

311-CD-624-001

**EOSDIS Core System Project**

**Release 6B Science Data Server  
Database Design and Schema  
Specifications for the ECS Project**

October 2002

Raytheon Company  
Upper Marlboro, Maryland

# **Release 6B Science Data Server Database Design and Schema Specifications for the ECS Project**

**October 2002**

Prepared Under Contract NAS5-60000  
CDRL Item #050

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# Preface

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This document describes the data design and database specification for the Subscription Server subsystem. It is one of eleven documents comprising the detailed database design specifications for each of the ECS subsystems.

The subsystem database design specifications for the as delivered system include:

- 311-CD-620-001      Release 6B Data Management (DM) Subsystem Database Design and Database Schema Specifications for the ECS Project
- 311-CD-621-001      Release 6B Ingest Subsystem Database Design and Database Schema Specifications for the ECS Project
- 311-CD-622-001      Release 6B Interoperability Subsystem (IOS) Database Design and Database Schema Specifications for the ECS Project
- 311-CD-623-001      Release 6B Planning and Data Processing Subsystem (PDPS) Database Design and Database Schema Specifications for the ECS Project
- 311-CD-624-001      Release 6B Science Data Server (SDSRV) Subsystem Database Design and Database Schema Specifications for the ECS Project
- 311-CD-625-001      Release 6B Storage Management (STMGMT) Subsystem Database Design and Database Schema Specifications for the ECS Project
- 311-CD-626-001      Release 6B Subscription Server (SUBSRV) Subsystem Database Design and Database Schema Specifications for the ECS Project
- 311-CD-627-001      Release 6B Management Support Subsystem (MSS) Database Design and Database Schema Specifications for the ECS Project
- 311-CD-628-001      Release 6B Configuration Registry Subsystem (CONFIG) Database Design and Database Schema Specifications for the ECS Project
- 311-CD-630-001      Release 6B PDS Subsystem Database Design and Database Schema Specification
- 311-CD-631-001      Release 6B Name Server Subsystem Database Design and Database Schema Specification

This document is a contract deliverable with an approval code 2. As such, it does not require formal Government acceptance. Contractor approved changes to this document are handled in accordance with change control requirements described in the EOS Configuration Management Plan. Changes to this document will be made by document change notice (DCN) or by complete revision.

Entity Relationship Diagrams (ERDs) presented in this document have been exported directly from tools and some cases contain too much detail to be easily readable within hard copy page constraints. The reader is encouraged to view these drawings on-line using the Portable Document Format (PDF) electronic copy available via the ECS Data Handling System (ECS) on the world-wide web at <http://edhs1.gsfc.nasa.gov>.

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## **Abstract**

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This document outlines Release 6B “as-built” database design and database schema of the Science Data Server Subsystem database including the physical layout of the database and initial installation parameters.

**Keywords:** data, database, design, configuration, database installation, scripts, security, data model, data dictionary, replication, performance tuning, SQL server, database security, replication, database scripts

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## **Appendix A. Science Data Server ERDs**

### **Abbreviations and Acronyms**

# **1. Introduction**

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## **1.1 Identification**

This Science Data Server Subsystem (SDPS) Database Design and Database Schema Specification document, Contract Data Requirement List (CDRL) Item Number 052, whose requirements are specified in Data Item description (DID) 311/DV2, is a required deliverable under the Earth Observing System (EOS) Data and Information System (EOSDIS) Core System (ECS), Contract NAS5-60000.

## **1.2 Scope**

The SDSRV Database Design and Database Schema Specification document describes the data design and database specifications to support the data requirements of Release 6B SDSRV software.

## **1.3 Purpose**

The purpose of the SDSRV Database Design and Database Schema Specification document is to support the maintenance of SDSRV data and databases throughout the life cycle of ECS. This document communicates the database implementation in sufficient detail to support ongoing configuration management.

## **1.4 Audience**

This document is intended to be used by ECS maintenance and operations staff. The document is organized as follows:

Section 1 provides information regarding the identification, scope, purpose and audience of this document.

Section 2 provides a listing of the related documents, which were used as a source of information for this document.

Section 3 contains the SDSRV data design which is the database tables, triggers, stored procedures, and flat file usage.

Section 4 provides a description of database performance and tuning features such as indexes, caches, and segments.

Section 5 provides a description of the database security infrastructure used and list of the users, groups, and permissions available upon initial installation.

Section 6 provides a description of database and database related scripts used for installation, de-installation, backup/recovery, and other miscellaneous functions.

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## 2. Related Documents

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### 2.1 Applicable Documents

The following documents, including Internet links, are referenced in this document, or are directly applicable, or contain policies or other directive matters that are binding upon the content of this volume.

|             |   |
|-------------|---|
| 305-CD-610  | Release 6B Segment Design Specification for the ECS Project |
| 920-TDG-009 | DAAC Hardware Database Mapping/GSFC                         |
| 920-TDN-009 | DAAC Hardware Database Mapping/NSIDC                        |
| 920-TDE-009 | DAAC Hardware Database Mapping/EDC                          |
| 920-TDL-009 | DAAC Hardware Database Mapping/LARC                         |
| 920-TDS-009 | DAAC Hardware Database Mapping/SMC                          |
| 920-TDG-010 | DAAC Database Configuration/GSFC                            |
| 920-TDN-010 | DAAC Database Configuration/NSIDC                           |
| 920-TDE-010 | DAAC Database Configuration/EDC                             |
| 920-TDL-010 | DAAC Database Configuration/LARC                            |
| 920-TDS-010 | DAAC Database Configuration/SMC                             |
| 920-TDG-011 | DAAC Sybase Log Mapping/GSFC                                |
| 920-TDN-011 | DAAC Sybase Log Mapping/NSIDC                               |
| 920-TDE-011 | DAAC Sybase Log Mapping/EDC                                 |
| 920-TDL-011 | DAAC Sybase Log Mapping/LARC                                |
| 920-TDS-011 | DAAC Sybase Log Mapping/SMC                                 |
| 922-TDG-013 | Disk Partitions/GSFC  |
| 922-TDN-013 | Disk Partitions/NSIDC                                       |
| 922-TDL-013 | Disk Partitions/LARC  |
| 922-TDS-013 | Disk Partitions/SMC   |

These documents are maintained as part of the ECS baseline and available on the World Wide Web at the URL: <http://cmdm.east.hitc.com/baseline>. Please note that this is a partial mirror site in that some items are not available (they are identified) since this is OPEN to all. This site may

also be reached through the EDHS homepage. Scroll page to the connections line and click on the ECS Baseline Information System link.

## **2.2 Information Documents**

The following documents, although not directly applicable, amplify or clarify the information presented in this document. These documents are not binding on this document.

|            |   |
|------------|---|
| 313-CD-610 | Release 6B CSMS/SDPS Internal ICD for the ECS Project       |
| 609-CD-610 | Release 6B Operations Tools Manual for the ECS Project      |
| 611-CD-610 | Release 6B Mission Operation Procedures for the ECS Project |

These documents are accessible via the EDHS homepage.

## 3. Data Design

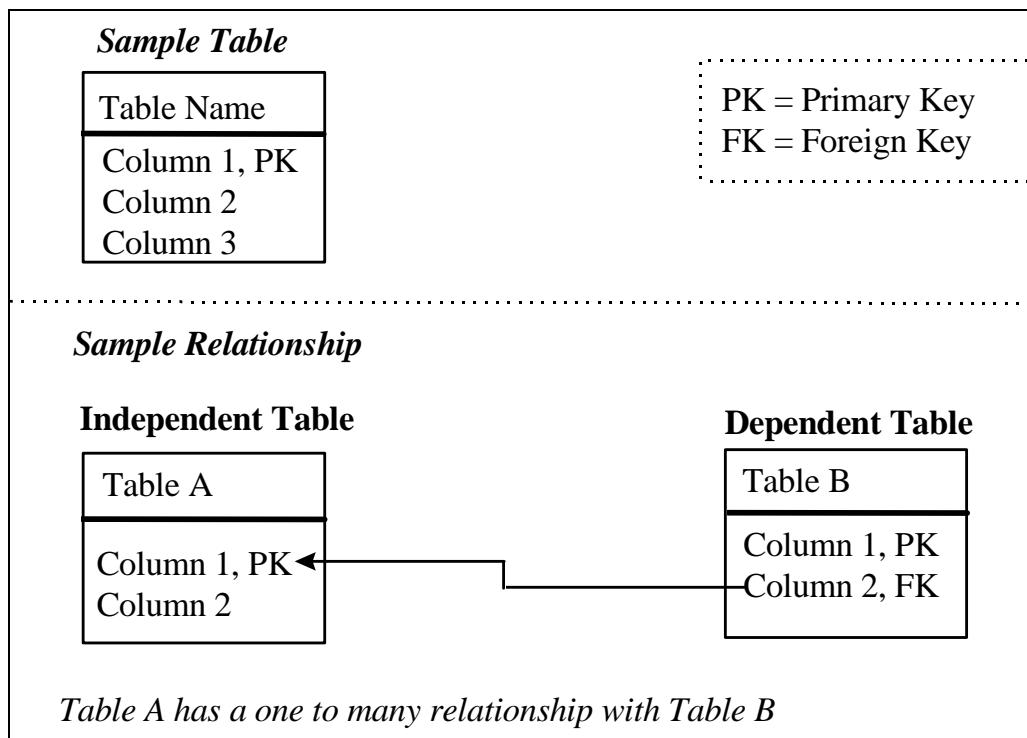
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### 3.1 Database Overview

The SDSRV database implements the large majority of the persistent data requirements for the SDSRV subsystem. The database is designed in such a manner as to satisfy business policy while maintaining data integrity and consistency. Database tables are implemented using the Sybase Relational Database Management system (DBMS). All components of the SDSRV database are described in the sections that follow in sufficient detail to support maintenance needs.

#### 3.1.1 Physical Data Model Entity Relationship Diagram

The Entity Relationship Diagram (ERD) presents a schematic depiction of the SDSRV physical data model. The ERDs presented here for the SDSRV database were produced using the S-Designer Data Architect Computer Aided Software Engineering (CASE) tool. ERDs represent the relationship between entities or database tables. On ERDs, tables are represented as shown in Figure 3-1.



**Figure 3-1. ERD Key**

Data in the SDSRV database falls into categories:

1. Metadata (Md) – information used to describe the contents of a Earth Science Data Collections housed in the SDSRV. Including:
  2. Delivered Algorithm Package metadata – descriptive information about the science algorithm software components used to generate or produce the contents of an Earth Science Data Collection.
  3. Collection metadata – information describing all data elements comprising an Earth Science Data Collection.
  4. Contact metadata – information describing the persons and organization associated with an Earth Science Data Collection.
  5. Granule metadata – information describing a select data element in an Earth Science Data Collection.
  6. Data Originator metadata – information describing the source from which an Earth Science Data Collection and/or comprising data elements were obtained.
  7. Spatial metadata – information describing the locations pertinent to an Earth Science Data Collection and/or comprising data elements.
  8. Temporal metadata – information describing the time periods pertinent to an Erath Science Data Collection and/or comprising data elements.
9. SQS Data – Information used by the Spatial Query Server COTS product to provide spatial query functionality.
10. System Management Data – Information used by the SDSRV to manage its functionality and operations.

ERDs for each of these data categories are found in Appendix A.

### **3.1.2 Tables**

Table 3-1 provides a listing of each database table in the SDSRV database. A brief definition and column list for each database table follows. The Column List indicates the column name, the column code used in Sybase, if the column is part of the primary key for the table. That is if the columns can be used alone or in combination with other primary key columns to uniquely identify a single row in the table. The column list also indicates whether the column is a mandatory attribute that must be included in every row.

**Table 3-1. DataTable List (1 of 4)**

| Data Table Name                | Data Category                        |
|--------------------------------|--------------------------------------|
| DsBtNotifierQueue              | System Management Data               |
| DsDeDictionaryAttribute        | System Management Data               |
| DsDeDictionaryContent          | System Management Data               |
| DsDeDictionaryRule             | System Management Data               |
| DsDeECSKeywordValids           | System Management Data               |
| DsDeEvent                      | System Management Data               |
| DsGeESDTConfiguredType         | System Management Data               |
| DsMdAdditionalAttributes       | Collection and Granule Metadata      |
| DsMdAlgorithmPackage           | Delivered Algorithm Package Metadata |
| DsMdAlgorithmPkgFileStorage    | Delivered Algorithm Package Metadata |
| DsMdAltitudeResolution         | Spatial Metadata                     |
| DsMdAnalysisSource             | Data Originator Metadata             |
| DsMdAncillaryInput             | Granule Metadata                     |
| DsMdApContactXref              | Contact Metadata                     |
| DsMdAPSAPComponentXref         | Delivered Algorithm Package Metadata |
| DsMdAttributeConversion        | System Management Data               |
| DsMdAttributeList              | System Management Data               |
| DsMdAttributeTableXref         | System Management Data               |
| DsMdBaseDependent              | System Management Data               |
| DsMdBrowse                     | Granule Metadata                     |
| DsMdBrowseFileStorage          | Granule Metadata                     |
| DsMdBrowseGranuleXref          | Granule Metadata                     |
| DsMdCampaign                   | Data Originator Metadata             |
| DsMdCIBoundingRectangle        | Collection Metadata                  |
| DsMdCICircle                   | Collection Metadata                  |
| DsMdCIGPolygon                 | Collection Metadata                  |
| DsMdTemporalSize               | Collection Metadata                  |
| DsMdCIPoint                    | Collection Metadata                  |
| DsMdCollBrowseXref             | Collection Metadata                  |
| DsMdCollDisciplineKeywordXref  | Collection Metadata                  |
| DsMdCollectionAddnlAttribsXref | Collection Metadata                  |
| DsMdCollectionAnalysisXref     | Collection Metadata                  |
| DsMdCollectionAPXref           | Collection Metadata                  |
| DsMdCollectionAssociation      | Collection Metadata                  |
| DsMdCollectionCampaignXref     | Collection Metadata                  |
| DsMdCollectionContactXref      | Collection Metadata                  |
| DsMdCollectionGranuleXref      | Collection Metadata                  |
| DsMdCollectionInstrumentXref   | Collection Metadata                  |
| DsMdCollectionPlatformXref     | Collection Metadata                  |
| DsMdCollections                | Collection Metadata                  |

**Table 3-1. DataTable List (2 of 4)**

| Data Table Name               | Data Category                        |
|-------------------------------|--------------------------------------|
| DsMdCollectionSensorXref      | Collection Metadata                  |
| DsMdCollFloatInfoContent      | Collection Metadata                  |
| DsMdCollIntegerInfoContent    | Collection Metadata                  |
| DsMdCollReview                | Collection Metadata                  |
| DsMdCollStorageMedium         | Collection Metadata                  |
| DsMdCollStringInfoContent     | Collection Metadata                  |
| DsMdCollURLInfo               | Collection Metadata                  |
| DsMdCollVerticalSpatialDomain | Collection Metadata                  |
| DsMdCollZoneIdentifier        | Collection Metadata                  |
| DsMdCommandConversion         | System Management Data               |
| DsMdContact                   | Contact Metadata                     |
| DsMdContactAddress            | Contact Metadata                     |
| DsMdContactOrganizations      | Contact Metadata                     |
| DsMdContactPersons            | Contact Metadata                     |
| DsMdCSDTDescription           | Collection Metadata                  |
| DsMdDAP                       | Delivered Algorithm Package Metadata |
| DsMdDAPFileStorage            | Delivered Algorithm Package Metadata |
| DsMdDeletedGranules           | System Management Data               |
| DsMdDepthResolution           | Collection Metadata                  |
| DsMdDisciplineKeywords        | Collection Metadata                  |
| DsMdECSPParameterKeywords     | Collection Metadata                  |
| DsMdEmailAddress              | Contact Metadata                     |
| DsMdFileStorage               | Granule Metadata                     |
| DsMdGranuleAnalysisXref       | Granule Metadata                     |
| DsMdGranuleCampaignXref       | Granule Metadata                     |
| DsMdGranuleInstrumentXref     | Granule Metadata                     |
| DsMdGranuleLocality           | Granule Metadata                     |
| DsMdGranulePlatformXref       | Granule Metadata                     |
| DsMdGranuleReview             | Granule Metadata                     |
| DsMdGranules                  | Granule Metadata                     |
| DsMdGranuleSensorXref         | Granule Metadata                     |
| DsMdGranuleVersions           | Granule Metadata                     |
| DsMdGrBoundingRectangle       | Granule Metadata                     |
| DsMdGrCircle                  | Granule Metadata                     |
| DsMdGrFloatInfoContent        | Granule Metadata                     |
| DsMdGrGPolygon                | Granule Metadata                     |
| DsMdGrIntegerInfoContent      | Granule Metadata                     |
| DsMdGrPoint                   | Granule Metadata                     |
| DsMdGrSensorCharacteristics   | Granule Metadata                     |
| DsMdGrStorageMedium           | Granule Metadata                     |

**Table 3-1. DataTable List (3 of 4)**

| Data Table Name              | Data Category                        |
|------------------------------|--------------------------------------|
| DsMdGrStringInfoContent      | Granule Metadata                     |
| DsMdGrVerticalSpatialDomain  | Granule Metadata                     |
| DsMdIdentifier               | System Management Data               |
| DsMdInputGranule             | Granule Metadata                     |
| DsMdInsertSequence           | System Management Data               |
| DsMdInstrument               | Data Originator Metadata             |
| DsMdInstrumentCharacteristic | System Management Data               |
| DsMdJoins                    | System Management Data               |
| DsMdKeyDependency            | System Management Data               |
| DsMdLocality                 | Collection Metadata                  |
| DsMdL7ErrorHandling          | System Management Data               |
| DsMdL7ErrorHandling_gr       | System Management Data               |
| DsMdMeasuredParameter        | Granule Metadata                     |
| DsMdMultipleDateTimePeriod   | Temporal Metadata                    |
| DsMdMultipleTypeCollection   | Collection Metadata                  |
| DsMdOperationMode            | Data Originator Metadata             |
| DsMdOperatorConversion       | System Management Data               |
| DsMdOrbitCalcSpatialDomain   | Granule Metadata                     |
| DsMdOrbitCalculatedSpatial   | Granule Metadata                     |
| DsMdOrbitPolygons            | Granule Metadata                     |
| DsMdParmToTableVector        | System Management Data               |
| DsMdPersonOrganizationXref   | Contact Metadata                     |
| DsMdPGEGroup                 | Delivered Algorithm Package Metadata |
| DsMdPlanarCoordinateSystems  | Spatial Metadata                     |
| DsMdPlatform                 | Data Originator Metadata             |
| DsMdPlatformCharacteristic   | Data Originator Metadata             |
| DsMdPlatInstrCode            | Data Originator Metadata             |
| DsMdProcessingHistory        | Granule Metadata                     |
| DsMdProcessHistFileStorage   | Granule Metadata                     |
| DsMdProcessingQA             | Granule Metadata                     |
| DsMdProductDbXref            | System Management Data               |
| DsMdQaGranule                | Granule Metadata                     |
| DsMdQaGranuleFileStorage     | Granule Metadata                     |
| DsMdQaGranuleXref            | Granule Metadata                     |
| DsMdQualityTextComment       | Collection Metadata                  |
| DsMdRangeDateTime            | Temporal Metadata                    |
| DsMdRegularPeriodic          | Temporal Metadata                    |
| DsMdSDSRVLookup              | System Management Metadata           |
| DsMdSensor                   | Data Originator Metadata             |
| DsMdSensorCharacteristic     | Data Originator Metadata             |

**Table 3-1. DataTable List (4 of 4)**

| Data Table Name              | Data Category                        |
|------------------------------|--------------------------------------|
| DsMdSingleDateTime           | Temporal Metadata                    |
| DsMdSpatial                  | Spatial Metadata                     |
| DsMdSpatialKeyword           | Collection Metadata                  |
| DsMdSSAPComponent            | Delivered Algorithm Package Metadata |
| DsMdSSAPComponentAPVersion   | Delivered Algorithm Package Metadata |
| DsMdSSAPComponentFileStorage | Delivered Algorithm Package Metadata |
| DsMdStagingTable             | System Management Data               |
| DsMdTelephoneNumbers         | Contact Metadata                     |
| DsMdTemporal                 | Temporal Metadata                    |
| DsMdTemporalKeyword          | Collection Metadata                  |
| DsMdUninterpretedData        | Granule Metadata                     |
| DsMdUnloadList               | System Management Data               |
| DsMdUpdateSequence           | System Management Data               |
| DsMdUserCommentDocument      | Collection Metadata                  |
| DsMdValidationDocument       | Collection Metadata                  |
| DsMdXAR                      | Granule Metadata                     |
| DsSiAcqBand                  | System Management Data               |
| DsSiAcqPolygon               | System Management Data               |
| DsSiAcquireCmd               | System Management Data               |
| DsSiAcquireCmdFileInfo       | System Management Data               |
| DsSiReqDomain                | System Management Data               |
| DsSiRequest                  | System Management Data               |
| DsSiURs                      | System Management Data               |
| DsSiRequestDetails           | System Management Data               |
| DsSiParameters               | System Management Data               |
| DsQAMUTESDTSite              | System Management Data               |
| EcDbDatabaseVersions         | Database Versioning                  |

Table 3-2 maintains a queue of requests for backup threads relative to fault recovery.

**Table 3-2. *DsBtNotifierQueue***

| Column Name | Code        | Type         | PK  | Mandatory |
|-------------|-------------|--------------|-----|-----------|
| granUR      | GranUR      | varchar(255) | No  | Yes       |
| insdate     | Insdate     | DsTMDModDate | No  | Yes       |
| rpcid       | Rpcid       | varchar(100) | Yes | Yes       |
| servicename | Servicename | varchar(30)  | No  | Yes       |
| status      | Status      | tinyint      | No  | Yes       |
| triggerTime | TriggerTime | DsTMDModDate | No  | No        |

Table 3-3 maintains the system level data dictionary and provides a mechanism for processing validation rules used by the Science Data Server.

**Table 3-3. *DsDeDictionaryAttribute***

| Column Name       | Code              | Type         | PK  | Mandatory |
|-------------------|-------------------|--------------|-----|-----------|
| attributeID       | AttributeID       | ID           | Yes | Yes       |
| contentID         | ContentID         | ID           | No  | Yes       |
| glType            | GIType            | char(10)     | No  | No        |
| length            | Length            | int          | No  | No        |
| maxOccurrences    | MaxOccurrences    | smallint     | No  | No        |
| operator          | Operator          | varchar(255) | No  | No        |
| optionalIndicator | OptionalIndicator | tinyint      | No  | No        |
| psalIndicator     | PsalIndicator     | tinyint      | No  | No        |
| qualifiedAttrName | QualifiedAttrName | varchar(255) | No  | No        |
| seqNum            | SeqNum            | int          | No  | No        |
| seqType           | SeqType           | int          | No  | No        |
| type              | Type              | varchar(15)  | No  | No        |

Table 3-4 maintains the system level metadata for the data dictionary. It facilitates the data dictionary level processing within Science Data Server.

**Table 3-4. DsDeDictionaryContent**

| Column Name        | Code               | Type         | PK  | Mandatory |
|--------------------|--------------------|--------------|-----|-----------|
| containerIndicator | ContainerIndicator | tinyint      | No  | No        |
| contentID          | ContentID          | ID           | Yes | Yes       |
| numAttribs         | NumAttribs         | smallint     | No  | No        |
| numLevels          | NumLevels          | smallint     | No  | No        |
| numMultiples       | NumMultiples       | smallint     | No  | No        |
| optionalIndicator  | OptionalIndicator  | tinyint      | No  | No        |
| qualifiedGroupName | QualifiedGroupName | varchar(255) | No  | No        |
| skips              | Skips              | tinyint      | No  | No        |

Table 3-5 maintains the system level data dictionary and provides a mechanism for storing validation rules for each attribute used by the Science Data Server.

**Table 3-5. DsDeDictionaryRule**

| Column Name | Code        | Type         | PK  | Mandatory |
|-------------|-------------|--------------|-----|-----------|
| attributeID | attributeID | ID           | Yes | Yes       |
| sequenceNo  | SequenceNo  | int          | yes | Yes       |
| ruleText    | RuleText    | varchar(255) | No  | Yes       |

Table 3-6 maintains the stores the validation rules for the hierarchical relationship among the ECS Keyword stack. Each row in this table corresponds to a valid combination of the values in the ECS attributes: ECSDisciplineKeyword, ECSTopicKeyword, ECSTermKeyword, ECSVariableKeyword, ECSPParameterKeyword.

**Table 3-6. DsDeECSKeywordValids**

| Column Name         | Code                | Type        | PK  | Mandatory |
|---------------------|---------------------|-------------|-----|-----------|
| disciplineKeyword   | DisciplineKeyword   | varchar(24) | No  | Yes       |
| disciplineKeywordId | DisciplineKeywordId | numeric(16) | Yes | Yes       |
| parameterKeyword    | ParameterKeyword    | varchar(80) | No  | No        |
| termKeyword         | TermKeyword         | varchar(50) | No  | Yes       |
| topicKeyword        | TopicKeyword        | varchar(32) | No  | Yes       |
| variableKeyword     | VariableKeyword     | varchar(80) | No  | No        |

Table 3-7 maintains the suscribable events for a given ESDT Version.

**Table 3-7. DsDeEvent**

| Column Name | Code      | Type        | PK  | Mandatory |
|-------------|-----------|-------------|-----|-----------|
| ShortName   | ShortName | char(9)     | Yes | Yes       |
| VersionID   | VersionID | tinyint     | Yes | Yes       |
| EventName   | eventName | varchar(80) | Yes | Yes       |
| EventID     | EventID   | int         | No  | No        |

Table 3-8 maintains the ESDT level installation data, one row per ESDT Version.

**Table 3-8. DsGeESDTConfiguredType**

| Column Name        | Code               | Type         | PK  | Mandatory |
|--------------------|--------------------|--------------|-----|-----------|
| ConfiguredName     | configuredName     | varchar(20)  | Yes | Yes       |
| Description        | description        | varchar(255) | No  | No        |
| DescriptorFileName | descriptorFileName | varchar(80)  | No  | No        |
| DllFileName        | dllFileName        | varchar(80)  | No  | No        |
| esdtState          | esdtState          | tinyint      | No  | Yes       |
| spatialSearchType  | spatialSearchType  | Varchar(40)  | No  | Yes       |
| VersionID          | versionID          | tinyint      | Yes | Yes       |

Table 3-9 identifies the product specific attributes (i.e. attributes used to describe the unique characteristics of the collection which extend beyond those defined in this model).

**Table 3-9. DsMdAdditionalAttributes**

| Column Name                    | Code                           | Type         | PK  | Mandatory |
|--------------------------------|--------------------------------|--------------|-----|-----------|
| AdditionalAttributeDataType    | AdditionalAttributeDataType    | char(10)     | No  | Yes       |
| AdditionalAttributeDescription | AdditionalAttributeDescription | varchar(255) | No  | Yes       |
| AdditionalAttributeName        | AdditionalAttributeName        | varchar(40)  | No  | Yes       |
| AttributelId                   | attributelId                   | int          | Yes | Yes       |
| MeasurementResolution          | MeasurementResolution          | varchar(30)  | No  | No        |
| ParameterRangeBegin            | ParameterRangeBegin            | varchar(40)  | No  | No        |
| ParameterRangeEnd              | ParameterRangeEnd              | varchar(40)  | No  | No        |
| ParameterUnitsOfMeasure        | ParameterUnitsOfMeasure        | varchar(20)  | No  | No        |
| ParameterValueAccuracy         | ParameterValueAccuracy         | varchar(30)  | No  | No        |
| ValueAccuracyExplanation       | ValueAccuracyExplanation       | varchar(255) | No  | No        |

Table 3-10 provides the common characteristics of the algorithms used in product generation. These characteristics include the algorithm package name, date, version, maturity code and generating system characteristics for the package.

**Table 3-10. *DsMdAlgorithmPackage***

| Column Name                  | Code                         | Type          | PK  | Mandatory |
|------------------------------|------------------------------|---------------|-----|-----------|
| AlgorithmPackageAcceptDate   | AlgorithmPackageAcceptDate   | datetime      | No  | Yes       |
| AlgorithmPackageMaturityCode | AlgorithmPackageMaturityCode | char(10)      | No  | Yes       |
| AlgorithmPackageName         | AlgorithmPackageName         | varchar(80)   | No  | Yes       |
| AlgorithmPackageVersion      | AlgorithmPackageVersion      | varchar(20)   | No  | Yes       |
| DbID                         | dbID                         | ID            | Yes | Yes       |
| DeleteEffectiveDate          | deleteEffectiveDate          | smalldatetime | No  | No        |
| DeliveryPurpose              | DeliveryPurpose              | varchar(20)   | No  | Yes       |
| InsertTime                   | insertTime                   | datetime      | No  | Yes       |
| LastUpdate                   | lastUpdate                   | DsTMdModDate  | No  | No        |
| PGEDateLastModified          | PGEDateLastModified          | datetime      | No  | Yes       |
| PGEFunction                  | PGEFunction                  | varchar(80)   | No  | Yes       |
| PGEIdentifier                | PGEIdentifier                | varchar(15)   | No  | Yes       |
| PGEName                      | PGEName                      | varchar(30)   | No  | Yes       |
| PGEVersion                   | PGEVersion                   | float         | No  | Yes       |
| SWDateLastModified           | SWDateLastModified           | datetime      | No  | Yes       |
| SWVersion                    | SWVersion                    | varchar(12)   | No  | Yes       |

Table 3-11 contains file storage information on Algorithm Package Products.

**Table 3-11. *DsMdAlgorithmPkgFileStorage***

| Column Name      | Code             | Type         | PK  | Mandatory |
|------------------|------------------|--------------|-----|-----------|
| checkSum         | checkSum         | int          | No  | No        |
| creationDate     | creationDate     | datetime     | No  | No        |
| filePath         | filePath         | varchar(80)  | No  | No        |
| fileSize         | fileSize         | int          | No  | No        |
| granuleId        | granuleId        | numeric(16)  | Yes | Yes       |
| internalFileName | internalFileName | varchar(80)  | Yes | Yes       |
| userDataFile     | userDataFile     | varchar(255) | No  | No        |

Table 3-12 stores the reference frame or system from which altitudes (elevations) are measured. The term altitude is used instead of the common term elevation to conform to the terminology in Federal Information Processing Standards 70-1 and 173.

**Table 3-12. DsMdAltitudeResolution**

| Column Name        | Code               | Type  | PK  | Mandatory |
|--------------------|--------------------|-------|-----|-----------|
| AltitudeResolution | AltitudeResolution | float | Yes | Yes       |
| collectionId       | CollectionId       | ID    | Yes | Yes       |

Table 3-13 is used to describe the data acquisition or data processing processes which characterize a collection. Collections can have both data acquisition and data processing processes associated with them. An example would be a weather analysis collection which included data collected using the NWS ASOS network (PlatformType=Network, PlatformShortName=ASOS) which was processed using an NMC analysis model (e.g. AnalysisType=Model, AnalysisShortName=RAFS, AnalysisDescription=Regional Area Forecast System, AnalysisTechnique= Regional Optimal Interpolation).

**Table 3-13. DsMdAnalysisSource**

| Column Name       | Code              | Type         | PK  | Mandatory |
|-------------------|-------------------|--------------|-----|-----------|
| AnalysisLongName  | AnalysisLongName  | varchar(80)  | No  | No        |
| AnalysisShortName | AnalysisShortName | varchar(20)  | No  | Yes       |
| AnalysisTechnique | AnalysisTechnique | varchar(80)  | No  | No        |
| AnalysisType      | AnalysisType      | varchar(20)  | No  | Yes       |
| dbID              | dbID              | ID           | Yes | Yes       |
| insertTime        | insertTime        | datetime     | No  | Yes       |
| lastUpdate        | lastUpdate        | DsTMDModDate | No  | Yes       |

Table 3-14 contains logical pointer references to ancillary data used to generate ECS science data granules.

**Table 3-14. DsMdAncillaryInput**

| Column Name           | Code                  | Type         | PK  | Mandatory |
|-----------------------|-----------------------|--------------|-----|-----------|
| AncillaryInputPointer | AncillaryInputPointer | Varchar(255) | No  | Yes       |
| AncillaryInputType    | AncillaryInputType    | Varchar(20)  | No  | Yes       |
| GranuleId             | granuleId             | ID           | Yes | Yes       |
| LastUpdate            | lastUpdate            | DsTMDModDate | No  | No        |
| SequenceNumber        | sequenceNumber        | smallint     | Yes | Yes       |

Table 3-15 contains the cross-reference between Contact and AlgorithmPackage.

**Table 3-15. DsMdApContactXref**

| Column Name | Code      | Type | PK  | Mandatory |
|-------------|-----------|------|-----|-----------|
| contactId   | contactId | ID   | Yes | Yes       |
| dapId       | dapId     | ID   | Yes | Yes       |

Table 3-16 contains the cross-reference between SAPComponent and AlgorithmPackage.

**Table 3-16. DsMdAPSAPComponentXref**

| Column Name | Code   | Type | PK  | Mandatory |
|-------------|--------|------|-----|-----------|
| apId        | apId   | ID   | Yes | Yes       |
| ssapId      | ssapId | ID   | Yes | Yes       |

Table 3-17 is used to convert ECS Metadata attributes into database calls.

**Table 3-17. DsMdAttributeConversion**

| Column Name    | Code           | Type        | PK  | Mandatory |
|----------------|----------------|-------------|-----|-----------|
| DBString       | DBString       | varchar(40) | No  | Yes       |
| DynamicSQLFlag | DynamicSQLFlag | char        | Yes | Yes       |
| glType         | glType         | varchar(40) | Yes | Yes       |

Table 3-18 is used to store lists used for processing insert, select, update, and delete operations by the Science Data Server.

**Table 3-18. DsMdAttributeList**

| Column Name    | Code           | Type         | PK  | Mandatory |
|----------------|----------------|--------------|-----|-----------|
| attributeName  | attributeName  | varchar(255) | No  | No        |
| glType         | glType         | varchar(30)  | No  | No        |
| listName       | listName       | varchar(30)  | Yes | Yes       |
| sequenceNumber | sequenceNumber | smallint     | Yes | Yes       |

Table 3-19 is used to map ECS Metadata attributes to their physical tables.

**Table 3-19. *DsMdAttributeTableXref***

| Column Name   | Code          | Type        | PK  | Mandatory |
|---------------|---------------|-------------|-----|-----------|
| attributeName | attributeName | varchar(80) | Yes | Yes       |
| columnName    | columnName    | varchar(32) | No  | No        |
| productName   | productName   | varchar(80) | Yes | Yes       |
| tableName     | tableName     | varchar(32) | No  | No        |

Table 3-20 is used to relate granule level metadata base tables and their dependent cross-reference tables grouped by the type of granule for processing by the Science Data Server.

**Table 3-20. *DsMdBaseDependent***

| Column Name          | Code                 | Type        | PK  | Mandatory |
|----------------------|----------------------|-------------|-----|-----------|
| BaseTableName        | BaseTableName        | varchar(40) | No  | Yes       |
| BaseType             | BaseType             | varchar(40) | Yes | Yes       |
| DependentTableIDName | DependentTableIDName | varchar(40) | No  | Yes       |
| DependentTableName   | DependentTableName   | varchar(40) | No  | Yes       |
| SequenceNo           | SequenceNo           | int         | Yes | Yes       |
| SubType              | SubType              | varchar(30) | Yes | Yes       |

Table 3-21 contains the description and size of a Browse product. The logical pointer to the actual Browse product instance is also included in this class. Its association with the collection indicates that it can apply to a collection as a whole while its association with a granule indicates that browse products may also occur one or more per granule.

**Table 3-21. *DsMdBrowse***

| Column Name              | Code                     | Type          | PK  | Mandatory |
|--------------------------|--------------------------|---------------|-----|-----------|
| BrowseDescription        | BrowseDescription        | varchar(255)  | No  | No        |
| BrowsePointer            | BrowsePointer            | varchar(255)  | No  | No        |
| BrowseProductionDateTime | BrowseProductionDateTime | datetime      | No  | No        |
| BrowseSize               | BrowseSize               | int           | No  | No        |
| dbID                     | dbID                     | ID            | Yes | Yes       |
| deleteEffectiveDate      | deleteEffectiveDate      | smalldatetime | No  | No        |
| insertTime               | insertTime               | datetime      | No  | Yes       |
| lastUpdate               | lastUpdate               | DsTMDModDate  | No  | No        |
| subType                  | subType                  | varchar(60)   | No  | No        |

Table 3-22 contains the file storage details for Browse products

**Table 3-22. *DsMdBrowseFileStorage***

| Column Name      | Code             | Type         | PK  | Mandatory |
|------------------|------------------|--------------|-----|-----------|
| checkSum         | checkSum         | int          | No  | No        |
| creationDate     | creationDate     | datetime     | No  | No        |
| filePath         | filePath         | varchar(80)  | No  | No        |
| fileSize         | fileSize         | int          | No  | No        |
| granuleId        | granuleId        | numeric(16)  | Yes | Yes       |
| internalFileName | internalFileName | varchar(80)  | Yes | Yes       |
| userDataFile     | userDataFile     | varchar(255) | No  | No        |

Table 3-23 contains the cross-reference between browse and granule.

**Table 3-23. *DsMdBrowseGranuleXref***

| Column Name | Code      | Type | PK  | Mandatory |
|-------------|-----------|------|-----|-----------|
| browseld    | browseld  | ID   | Yes | Yes       |
| granuleId   | granuleId | ID   | Yes | Yes       |

Table 3-24 contains field campaign data.

**Table 3-24. *DsMdCampaign***

| Column Name       | Code              | Type         | PK  | Mandatory |
|-------------------|-------------------|--------------|-----|-----------|
| CampaignEndDate   | CampaignEndDate   | datetime     | No  | Yes       |
| CampaignLongName  | CampaignLongName  | varchar(80)  | No  | Yes       |
| CampaignShortName | CampaignShortName | varchar(20)  | No  | Yes       |
| CampaignStartDate | CampaignStartDate | datetime     | No  | Yes       |
| dbID              | DbID              | ID           | Yes | Yes       |
| insertTime        | InsertTime        | datetime     | No  | Yes       |
| lastUpdate        | LastUpdate        | DsTMDModDate | No  | Yes       |

Table 3-25 contains area coverage as an LLBOX for ECS collections. This area coverage is expressed by latitude and longitude values in the order western, eastern, northern, and southern - most.

**Table 3-25. DsMdCIBoundingRectangle**

| Column Name       | Code              | Type  | PK  | Mandatory |
|-------------------|-------------------|-------|-----|-----------|
| BoundingRectangle | BoundingRectangle | llbox | No  | Yes       |
| collectionId      | CollectionId      | ID    | Yes | Yes       |

Table 3-26 identifies the characteristics required to specify the area coverage for a collection as a circle consisting of latitude center, longitude center, radius units, and radius value.

**Table 3-26. DsMdCICircle**

| Column Name    | Code           | Type     | PK  | Mandatory |
|----------------|----------------|----------|-----|-----------|
| BoundingCircle | BoundingCircle | circle   | No  | Yes       |
| collectionId   | CollectionId   | ID       | Yes | Yes       |
| RadiusUnits    | RadiusUnits    | char(10) | No  | No        |

Table 3-27 identifies the characteristics required to specify the area coverage for a collection as a polygon consisting of multiple points expressed by latitude and longitude values in clockwise order.

**Table 3-27. DsMdCIGPolygon**

| Column Name       | Code              | Type     | PK  | Mandatory |
|-------------------|-------------------|----------|-----|-----------|
| collectionId      | CollectionId      | ID       | Yes | Yes       |
| GPolygonContainer | GpolygonContainer | gpolygon | No  | Yes       |

Table 3-28 identifies the characteristics required to specify the area coverage for a collection as a single point expressed by latitude and longitude.

**Table 3-28. DsMdCIPoint**

| Column Name   | Code          | Type  | PK  | Mandatory |
|---------------|---------------|-------|-----|-----------|
| CollectionId  | collectionId  | ID    | Yes | Yes       |
| PointLocation | PointLocation | point | No  | Yes       |

Table 3-29 contains the cross-reference between collection and browse.

**Table 3-29. DsMdCollBrowseXref**

| Column Name  | Code         | Type | PK  | Mandatory |
|--------------|--------------|------|-----|-----------|
| Browseld     | browseld     | ID   | Yes | Yes       |
| CollectionId | collectionId | ID   | Yes | Yes       |

Table 3-30 contains the cross-reference between collection and discipline keyword.

**Table 3-30. DsMdCollDisciplineKeywordXref**

| Column Name         | Code                | Type | PK  | Mandatory |
|---------------------|---------------------|------|-----|-----------|
| collectionId        | CollectionId        | ID   | Yes | Yes       |
| disciplineKeywordId | DisciplineKeywordId | ID   | Yes | Yes       |

Table 3-31 contains the cross-reference between collection and additional attributes.

**Table 3-31. DsMdCollectionAddnlAttrbsXref**

| Column Name  | Code         | Type | PK  | Mandatory |
|--------------|--------------|------|-----|-----------|
| attributeld  | Attributeld  | int  | Yes | Yes       |
| collectionId | CollectionId | ID   | Yes | Yes       |

Table 3-32 contains the cross-reference between collection and analysis source.

**Table 3-32. DsMdCollectionAnalysisXref**

| Column Name      | Code             | Type | PK  | Mandatory |
|------------------|------------------|------|-----|-----------|
| analysisSourceld | analysisSourceld | ID   | Yes | Yes       |
| collectionId     | collectionId     | ID   | Yes | Yes       |

Table 3-33 contains the cross-reference between collection and algorithm package.

**Table 3-33. DsMdCollectionAPXref**

| Column Name  | Code         | Type | PK  | Mandatory |
|--------------|--------------|------|-----|-----------|
| apld         | apld         | ID   | Yes | Yes       |
| collectionId | collectionId | ID   | Yes | Yes       |

Table 3-34 is used to describe collections associated with the instance of a collection; i.e., the name and other details of input collections, collections associated (in science data terms) with the instance and/or collections dependent on the collection in some way.

**Table 3-34. DsMdCollectionAssociation**

| Column Name         | Code                | Type         | PK  | Mandatory |
|---------------------|---------------------|--------------|-----|-----------|
| AssociatedShortName | AssociatedShortName | char(8)      | Yes | Yes       |
| AssociatedVersionId | AssociatedVersionId | tinyint      | Yes | Yes       |
| collectionId        | collectionId        | numeric(16)  | Yes | Yes       |
| CollectionType      | CollectionType      | varchar(20)  | Yes | Yes       |
| CollectionUse1      | CollectionUse1      | varchar(255) | No  | No        |
| CollectionUse2      | CollectionUse2      | varchar(255) | No  | No        |

Table 3-35 contains the cross-reference between collection and campaign.

**Table 3-35. DsMdCollectionCampaignXref**

| Column Name  | Code         | Type | PK  | Mandatory |
|--------------|--------------|------|-----|-----------|
| campaignId   | campaignId   | ID   | Yes | Yes       |
| CollectionId | collectionId | ID   | Yes | Yes       |

Table 3-36 contains the cross -reference between collection and contact.

**Table 3-36. DsMdCollectionContactXref**

| Column Name  | Code         | Type | PK  | Mandatory |
|--------------|--------------|------|-----|-----------|
| CollectionId | CollectionId | ID   | Yes | Yes       |
| ContactId    | ContactId    | ID   | Yes | Yes       |

Table 3-37 contains the cross-reference between collection and granule.

**Table 3-37. DsMdCollectionGranuleXref**

| Column Name  | Code         | Type | PK  | Mandatory |
|--------------|--------------|------|-----|-----------|
| collectionId | CollectionId | ID   | Yes | Yes       |
| granuleId    | GranuleId    | ID   | Yes | Yes       |

Table 3-38 contains the cross-reference between collection and instrument.

**Table 3-38. *DsMdCollectionInstrumentXref***

| Column Name  | Code         | Type | PK  | Mandatory |
|--------------|--------------|------|-----|-----------|
| collectionId | CollectionId | ID   | Yes | Yes       |
| instrumentId | InstrumentId | ID   | Yes | Yes       |

Table 3-39 contains the cross-reference between collection and platform.

**Table 3-39. *DsMdCollectionPlatformXref***

| Column Name  | Code         | Type | PK  | Mandatory |
|--------------|--------------|------|-----|-----------|
| collectionId | CollectionId | ID   | Yes | Yes       |
| platformId   | PlatformId   | ID   | Yes | Yes       |

Table 3-40 contains brief description of all collections, also includes the short and long names and the version of the collection.

**Table 3-40. *DsMdCollections (1 of 2)***

| Column Name                    | Code                           | Type         | PK  | Mandatory |
|--------------------------------|--------------------------------|--------------|-----|-----------|
| AccessConstraints              | AccessConstraints              | varchar(255) | No  | No        |
| accessPermissions              | accessPermissions              | varchar(30)  | No  | No        |
| ArchiveCenter                  | ArchiveCenter                  | varchar(20)  | No  | Yes       |
| CitationForExternalPublication | CitationForExternalPublication | varchar(255) | No  | No        |
| CollectionDescription          | CollectionDescription          | varchar(255) | No  | Yes       |
| CollectionState                | CollectionState                | char(10)     | No  | No        |
| dbID                           | dbID                           | ID           | Yes | Yes       |
| insertTime                     | insertTime                     | datetime     | No  | Yes       |
| lastUpdate                     | lastUpdate                     | datetime     | No  | No        |
| LongName                       | LongName                       | varchar(80)  | No  | Yes       |
| MaintenanceUpdateFrequency     | MaintenanceUpdateFrequency     | varchar(80)  | No  | Yes       |
| primaryCollectionFlag          | primaryCollectionFlag          | char(1)      | No  | No        |
| ProcessingCenter               | ProcessingCenter               | varchar(20)  | No  | No        |
| ProcessingLevelDescription     | ProcessingLevelDescription     | varchar(80)  | No  | No        |
| ProcessingLevelID              | ProcessingLevelID              | char(6)      | No  | No        |
| RevisionDate                   | RevisionDate                   | datetime     | No  | No        |
| ShortName                      | ShortName                      | char(8)      | No  | Yes       |

**Table 3-40. DsMdCollections (2 of 2)**

| Column Name         | Code                | Type         | PK | Mandatory |
|---------------------|---------------------|--------------|----|-----------|
| subType             | subType             | varchar(30)  | No | No        |
| SuggestedUsage1     | SuggestedUsage1     | varchar(255) | No | No        |
| SuggestedUsage2     | SuggestedUsage2     | varchar(245) | No | No        |
| temporalRestriction | temporalRestriction | smallint     | No | No        |
| type                | type                | varchar(30)  | No | Yes       |
| VersionDescription  | VersionDescription  | varchar(255) | No | Yes       |
| VersionID           | VersionID           | tinyint      | No | Yes       |

Table 3-41 contains the cross-reference between collection and sensor.

**Table 3-41. DsMdCollectionSensorXref**

| Column Name  | Code         | Type | PK  | Mandatory |
|--------------|--------------|------|-----|-----------|
| collectionId | collectionId | ID   | Yes | Yes       |
| sensorId     | sensorId     | ID   | Yes | Yes       |

Table 3-42 contains collection level float additional attribute values.

**Table 3-42. DsMdCollFloatInfoContent**

| Column Name  | Code         | Type  | PK  | Mandatory |
|--------------|--------------|-------|-----|-----------|
| attributeld  | attributeld  | int   | Yes | Yes       |
| clFloatValue | clFloatValue | float | Yes | Yes       |
| collectionId | collectionId | ID    | Yes | Yes       |

Table 3-43 contains collection level integer additional attribute values.

**Table 3-43. DsMdCollIntegerInfoContent**

| Column Name  | Code         | Type    | PK  | Mandatory |
|--------------|--------------|---------|-----|-----------|
| attributeld  | attributeld  | int     | Yes | Yes       |
| clIntValue   | clIntValue   | integer | Yes | Yes       |
| collectionId | collectionId | ID      | Yes | Yes       |

Table 3-44 contains information related to a collection review.

**Table 3-44. DsMdCollReview**

| Column Name         | Code                | Type        | PK  | Mandatory |
|---------------------|---------------------|-------------|-----|-----------|
| collectionId        | collectionId        | ID          | Yes | Yes       |
| FutureReviewDate    | FutureReviewDate    | datetime    | No  | No        |
| ScienceReviewDate   | ScienceReviewDate   | datetime    | Yes | Yes       |
| ScienceReviewStatus | ScienceReviewStatus | varchar(20) | No  | Yes       |

Table 3-45 holds information about the storage medium for a collection.

**Table 3-45. DsMdCollStorageMedium**

| Column Name   | Code          | Type        | PK  | Mandatory |
|---------------|---------------|-------------|-----|-----------|
| collectionId  | collectionId  | ID          | Yes | Yes       |
| StorageMedium | StorageMedium | varchar(30) | Yes | Yes       |

Table 3-46 contains collection level string additional attribute values.

**Table 3-46. DsMdCollStringInfoContent**

| Column Name   | Code          | Type         | PK  | Mandatory |
|---------------|---------------|--------------|-----|-----------|
| attributeld   | attributeld   | int          | Yes | Yes       |
| clStringValue | clStringValue | varchar(255) | No  | Yes       |
| collectionId  | collectionId  | ID           | Yes | Yes       |

Table 3-47 contains collection level URL information.

**Table 3-47. DsMdCollURLInfo**

| Column Name              | Code                     | Type         | PK  | Mandatory |
|--------------------------|--------------------------|--------------|-----|-----------|
| collectionId             | collectionId             | ID           | Yes | Yes       |
| DatasetDisclaimerPtr     | DatasetDisclaimerPtr     | varchar(200) | No  | No        |
| ECSCollGuidePtr          | ECSCollGuidePtr          | varchar(200) | No  | No        |
| ECSCollGuidePtrComment   | ECSCollGuidePtrComment   | varchar(255) | No  | No        |
| MisInformationPtr        | MisInformationPtr        | varchar(200) | No  | No        |
| MisInformationPtrComment | MisInformationPtrComment | varchar(255) | No  | No        |

Table 3-48 has information about the vertical spatial domain represented by a collection.

**Table 3-48. *DsMdCollVerticalSpatialDomain***

| Column Name                | Code                       | Type        | PK  | Mandatory |
|----------------------------|----------------------------|-------------|-----|-----------|
| collectionId               | collectionId               | ID          | Yes | Yes       |
| VerticalSpatialDomainType  | VerticalSpatialDomainType  | varchar(20) | Yes | Yes       |
| VerticalSpatialDomainValue | VerticalSpatialDomainValue | varchar(20) | Yes | Yes       |

Table 3-49 holds information about the various zones for a collection.

**Table 3-49. *DsMdCollZoneIdentifier***

| Column Name     | Code            | Type        | PK  | Mandatory |
|-----------------|-----------------|-------------|-----|-----------|
| collectionId    | collectionId    | ID          | Yes | Yes       |
| ZonelIdentifier | ZonelIdentifier | varchar(64) | Yes | Yes       |

Table 3-50 translates ECS Metadata operations into database commands.

**Table 3-50. *DsMdCommandConversion***

| Column Name | Code       | Type         | PK  | Mandatory |
|-------------|------------|--------------|-----|-----------|
| BaseTable   | BaseTable  | varchar(40)  | Yes | Yes       |
| DBCommand   | DBCommand  | varchar(255) | No  | Yes       |
| GroupName   | GroupName  | varchar(40)  | Yes | Yes       |
| Operator    | Operator   | varchar(40)  | Yes | Yes       |
| SequenceNo  | SequenceNo | int          | Yes | Yes       |

Table 3-51 describes the basic characteristics for a person or an organization type of contact. These contacts may provide information about a Collection, Delivered Algorithm Package, PGE or Data Originator. The role attribute specifies the type of contact and serves to differentiate the use of the module for the various classes associated with it from other modules. System and user profile contact information is held elsewhere.

**Table 3-51. DsMdContact**

| Column Name         | Code                | Type         | PK  | Mandatory |
|---------------------|---------------------|--------------|-----|-----------|
| ContactInstructions | ContactInstructions | varchar(255) | No  | No        |
| ContactRole         | ContactRole         | varchar(20)  | No  | Yes       |
| dbID                | dbID                | ID           | Yes | Yes       |
| HoursOfService      | HoursOfService      | varchar(255) | No  | No        |
| insertTime          | insertTime          | datetime     | No  | Yes       |
| lastUpdate          | lastUpdate          | DsTMDModDate | No  | Yes       |

Table 3-52 contains the address details for each contact.

**Table 3-52. DsMdContactAddress**

| Column Name   | Code          | Type        | PK  | Mandatory |
|---------------|---------------|-------------|-----|-----------|
| City          | City          | varchar(30) | No  | Yes       |
| contactId     | contactId     | numeric(16) | Yes | Yes       |
| Country       | Country       | varchar(10) | No  | Yes       |
| PostalCode    | PostalCode    | varchar(20) | No  | Yes       |
| StateProvince | StateProvince | varchar(30) | No  | Yes       |
| StreetAddress | StreetAddress | varchar(80) | Yes | Yes       |

Table 3-53 contains the name of the contact organization. This table is used optionally with ContactPerson. In some instances, ContactOrganization is the primary point of contact.

**Table 3-53. DsMdContactOrganizations**

| Column Name             | Code                    | Type         | PK  | Mandatory |
|-------------------------|-------------------------|--------------|-----|-----------|
| contactId               | contactId               | ID           | Yes | Yes       |
| ContactOrganizationName | ContactOrganizationName | varchar(255) | No  | Yes       |

Table 3-54 contains the contact person's name and position. This table is used optionally with ContactOrganization. In some instances, ContactPerson is the primary point of contact.

**Table 3-54. DsMdContactPersons**

| <b>Column Name</b> | <b>Code</b>        | <b>Type</b>  | <b>PK</b> | <b>Mandatory</b> |
|--------------------|--------------------|--------------|-----------|------------------|
| ContactFirstName   | ContactFirstName   | varchar(255) | No        | Yes              |
| contactId          | contactId          | ID           | Yes       | Yes              |
| ContactJobPosition | ContactJobPosition | varchar(255) | No        | No               |
| ContactLastName    | ContactLastName    | varchar(255) | No        | Yes              |
| ContactMiddleName  | ContactMiddleName  | varchar(255) | No        | No               |

Table 3-55 provides a description of the data organization for the product (i.e. a generalized granule description in terms of internal structure). There are many possible structures., all describable by one of the PrimaryCSDTs (fixed domain), but the specific implementation has an unbounded domain indicating the range at the lower structured level. While many CSDTs may exist in a granule, only the primary or dominant CSDT is described (e.g. PrimaryCSDT = swath, Implementation = HDF-EOS). The indirect reference is used for collection of specific data organization labels. A comment field is provided for further explanation.

**Table 3-55. DsMdCSDTDescription**

| <b>Column Name</b> | <b>Code</b>       | <b>Type</b>  | <b>PK</b> | <b>Mandatory</b> |
|--------------------|-------------------|--------------|-----------|------------------|
| collectionId       | collectionId      | ID           | Yes       | Yes              |
| CSDTComments       | CSDTComments      | varchar(255) | No        | No               |
| Implementation     | Implementation    | varchar(100) | No        | No               |
| IndirectReference  | IndirectReference | varchar(100) | No        | No               |
| PrimaryCSDT        | PrimaryCSDT       | varchar(30)  | Yes       | Yes              |

Table 3-56 provides a Delivered Algorithm Package association for one or more PGE Groups.

**Table 3-56. DsMdDAP**

| <b>Column Name</b>  | <b>Code</b>         | <b>Type</b>   | <b>PK</b> | <b>Mandatory</b> |
|---------------------|---------------------|---------------|-----------|------------------|
| DAPID               | DAPID               | varchar(12)   | No        | Yes              |
| DAPInsertDate       | DAPInsertDate       | datetime      | No        | Yes              |
| dbID                | dbID                | ID            | Yes       | Yes              |
| insertTime          | insertTime          | datetime      | No        | Yes              |
| deleteEffectiveDate | deleteEffectiveDate | smalldatetime | No        | No               |
| lastUpdate          | lastUpdate          | DsTMDModDate  | No        | No               |

Table 3-57 contains the file storage details for the Delivered Algorithm Package.

**Table 3-57. *DsMdDAPFileStorage***

| <b>Column Name</b> | <b>Code</b>      | <b>Type</b>  | <b>PK</b> | <b>Mandatory</b> |
|--------------------|------------------|--------------|-----------|------------------|
| checkSum           | checkSum         | int          | No        | No               |
| creationDate       | creationDate     | datetime     | No        | No               |
| filePath           | filePath         | varchar(80)  | No        | No               |
| fileSize           | fileSize         | int          | No        | No               |
| granuleId          | granuleId        | numeric(16)  | Yes       | Yes              |
| internalFileName   | internalFileName | varchar(80)  | Yes       | Yes              |
| userDataFile       | userDataFile     | varchar(255) | No        | No               |

Table 3-58 holds the information of the granules that have been requested to be marked as deleted or DFAed.

**Table 3-58. *DsMdDeletedGranules***

| <b>Column Name</b> | <b>Code</b>     | <b>Type</b> | <b>PK</b> | <b>Mandatory</b> |
|--------------------|-----------------|-------------|-----------|------------------|
| DFAFlag            | FAFlag          | tinyint     | No        | No               |
| GranuleID          | GranuleID       | ID          | Yes       | Yes              |
| insertTime         | insertTime      | datetime    | No        | No               |
| ShortName          | ShortName       | char(8)     | No        | Yes              |
| status             | status          | tinyint     | No        | No               |
| transactionTime    | transactionTime | datetime    | No        | No               |
| VersionID          | VersionID       | tinyint     | No        | Yes              |

Table 3-59 holds the depth resolution measurements for collection level spatial coverage.

**Table 3-59. *DsMdDepthResolution***

| <b>Column Name</b> | <b>Code</b>     | <b>Type</b> | <b>PK</b> | <b>Mandatory</b> |
|--------------------|-----------------|-------------|-----------|------------------|
| collectionId       | collectionId    | ID          | Yes       | Yes              |
| DepthResolution    | DepthResolution | float       | Yes       | Yes              |

Table 3-60 provides the discipline keyword(s) associated with a collection.

**Table 3-60. *DsMdDisciplineKeywords***

| Column Name          | Code                 | Type         | PK  | Mandatory |
|----------------------|----------------------|--------------|-----|-----------|
| dbID                 | dbID                 | ID           | Yes | Yes       |
| ECSDisciplineKeyword | ECSDisciplineKeyword | varchar(24)  | No  | Yes       |
| ECSTermKeyword       | ECSTermKeyword       | varchar(50)  | No  | Yes       |
| ECSTopicKeyword      | ECSTopicKeyword      | varchar(32)  | No  | Yes       |
| ECSVariableKeyword   | ECSVariableKeyword   | varchar(80)  | No  | No        |
| insertTime           | insertTime           | datetime     | No  | Yes       |
| lastUpdate           | lastUpdate           | DsTMDModDate | No  | Yes       |

Table 3-61 contains keywords, associated with the collection.

**Table 3-61. *DsMdECSParameterKeywords***

| Column Name         | Code                | Type        | PK  | Mandatory |
|---------------------|---------------------|-------------|-----|-----------|
| ECSParameterKeyword | ECSParameterKeyword | varchar(80) | Yes | Yes       |
| parameterKeywordId  | parameterKeywordId  | numeric(16) | Yes | Yes       |

Table 3-62 contains the electronic mail address of the contact or document author.

**Table 3-62. *DsMdEmailAddress***

| Column Name           | Code                  | Type         | PK  | Mandatory |
|-----------------------|-----------------------|--------------|-----|-----------|
| contactId             | contactId             | numeric(16)  | Yes | Yes       |
| ElectronicMailAddress | ElectronicMailAddress | varchar(255) | No  | Yes       |
| emailAddressId        | emailAddressId        | int          | Yes | Yes       |

Table 3-63 contains the file storage details for granules.

**Table 3-63. *DsMdFileStorage***

| Column Name         | Code                | Type          | PK  | Mandatory |
|---------------------|---------------------|---------------|-----|-----------|
| checkSum            | checkSum            | int           | No  | No        |
| creationDate        | creationDate        | DsTMDModDate  | No  | No        |
| deleteEffectiveDate | deleteEffectiveDate | smalldatetime | No  | No        |
| filePath            | filePath            | varchar(80)   | No  | No        |
| fileSize            | fileSize            | int           | No  | No        |
| granuleId           | granuleId           | ID            | Yes | Yes       |
| internalFileName    | internalFileName    | varchar(80)   | Yes | Yes       |
| userDataFile        | userDataFile        | varchar(40)   | No  | No        |

Table 3-64 contains the cross-reference between granules and source analysis.

**Table 3-64. *DsMdGranuleAnalysisXref***

| Column Name      | Code             | Type | PK  | Mandatory |
|------------------|------------------|------|-----|-----------|
| analysisSourceId | analysisSourceId | ID   | Yes | Yes       |
| granuleId        | granuleId        | ID   | Yes | Yes       |

Table 3-65 contains the cross-reference between granules and field campaigns.

**Table 3-65. *DsMdGranuleCampaignXref***

| Column Name | Code       | Type | PK  | Mandatory |
|-------------|------------|------|-----|-----------|
| campaignId  | campaignId | ID   | Yes | Yes       |
| granuleId   | granuleId  | ID   | Yes | Yes       |

Table 3-66 contains the cross-reference between granules and instruments.

**Table 3-66. *DsMdGranuleInstrumentXref***

| Column Name   | Code          | Type        | PK  | Mandatory |
|---------------|---------------|-------------|-----|-----------|
| granuleId     | granuleId     | ID          | Yes | Yes       |
| instrumentId  | instrumentId  | ID          | Yes | Yes       |
| OperationMode | OperationMode | varchar(20) | No  | No        |

Table 3-67 contains the value for the granule's locality.

**Table 3-67. *DsMdGranuleLocality***

| Column Name   | Code          | Type        | PK  | Mandatory |
|---------------|---------------|-------------|-----|-----------|
| granuleId     | granuleId     | ID          | Yes | Yes       |
| LocalityValue | LocalityValue | varchar(80) | Yes | Yes       |

Table 3-68 contains the cross-reference between granules and platforms.

**Table 3-68. *DsMdGranulePlatformXref***

| Column Name | Code       | Type | PK  | Mandatory |
|-------------|------------|------|-----|-----------|
| granuleId   | granuleId  | ID   | Yes | Yes       |
| platformId  | platformId | ID   | Yes | Yes       |

Table 3-69 provides review status details for each granule.

**Table 3-69. *DsMdGranuleReview***

| Column Name         | Code                | Type        | PK  | Mandatory |
|---------------------|---------------------|-------------|-----|-----------|
| FutureReviewDate    | FutureReviewDate    | datetime    | No  | No        |
| granuleId           | granuleId           | ID          | Yes | Yes       |
| ScienceReviewDate   | ScienceReviewDate   | datetime    | Yes | Yes       |
| ScienceReviewStatus | ScienceReviewStatus | varchar(20) | No  | Yes       |

Table 3-70 provides the core attributes for all science granules associated with ESDTs. It also includes the range date and time attributes for each granule.

**Table 3-70. DsMdGranules**

| Column Name               | Code                      | Type          | PK  | Mandatory |
|---------------------------|---------------------------|---------------|-----|-----------|
| BeginningDateTime         | BeginningDateTime         | datetime      | No  | No        |
| CalendarDate              | CalendarDate              | datetime      | No  | No        |
| DayNightFlag              | DayNightFlag              | char(5)       | No  | No        |
| dbID                      | dbID                      | ID            | Yes | Yes       |
| deleteEffectiveDate       | deleteEffectiveDate       | smalldatetime | No  | No        |
| deleteFromArchive         | deleteFromArchive         | char(1)       | No  | No        |
| EndingDateTime            | EndingDateTime            | datetime      | No  | No        |
| insertTime                | insertTime                | datetime      | No  | Yes       |
| lastUpdate                | lastUpdate                | datetime      | No  | No        |
| LocalGranuleID            | LocalGranuleID            | varchar(80)   | No  | No        |
| LocalVersionID            | LocalVersionID            | varchar(60)   | No  | No        |
| PGEVersion                | PGEVersion                | char(10)      | No  | No        |
| primaryCollectionId       | primaryCollectionId       | numeric(16)   | No  | Yes       |
| processingHistoryId       | processingHistoryId       | numeric(16)   | No  | No        |
| processingHistoryTypeCode | processingHistoryTypeCode | int           | No  | No        |
| ProductionDateTime        | ProductionDateTime        | datetime      | No  | No        |
| RangeBeginningDate        | RangeBeginningDate        | datetime      | No  | No        |
| RangeBeginningTime        | RangeBeginningTime        | nvarchar(20)  | No  | No        |
| RangeEndingDate           | RangeEndingDate           | datetime      | No  | No        |
| RangeEndingTime           | RangeEndingTime           | nvarchar(20)  | No  | No        |
| ReprocessingActual        | ReprocessingActual        | varchar(20)   | No  | No        |
| ReprocessingPlanned       | ReprocessingPlanned       | varchar(45)   | No  | No        |
| ShortName                 | ShortName                 | char(8)       | No  | Yes       |
| SizeMBECSDataGranule      | SizeMBECSDataGranule      | float         | No  | No        |
| TimeOfDay                 | TimeOfDay                 | nvarchar(20)  | No  | No        |
| VersionID                 | VersionID                 | tinyint       | No  | Yes       |
| ZonelIdentifier           | ZonelIdentifier           | varchar(64)   | No  | No        |

Table 3-71 contains the cross-reference between granules and sensor.

**Table 3-71. DsMdGranuleSensorXref**

| Column Name | Code      | Type | PK  | Mandatory |
|-------------|-----------|------|-----|-----------|
| granuleId   | granuleId | ID   | Yes | Yes       |
| sensorId    | sensorId  | ID   | Yes | Yes       |

Table 3-72 provides version details for each granule. Multiple versions of the same granule may exist and each version of a granule may be associated with one of more collection.

**Table 3-72. DsMdGranuleVersions**

| Column Name       | Code              | Type     | PK  | Mandatory |
|-------------------|-------------------|----------|-----|-----------|
| currentGranuleId  | currentGranuleId  | ID       | Yes | Yes       |
| currentVersion    | currentVersion    | char(16) | No  | No        |
| previousGranuleId | previousGranuleId | ID       | No  | No        |
| previousVersion   | previousVersion   | char(16) | No  | No        |

Table 3-73 contains area coverage as an LL\_BOX for a granule. This area coverage is expressed as an llbox.

**Table 3-73. DsMdGrBoundingRectangle**

| Column Name         | Code                | Type  | PK  | Mandatory |
|---------------------|---------------------|-------|-----|-----------|
| BoundingRectangle   | BoundingRectangle   | llbox | No  | Yes       |
| granuleId           | granuleId           | ID    | Yes | Yes       |
| PrimaryCollectionId | PrimaryCollectionId | ID    | No  | No        |

Table 3-74 identifies the characteristics required to specify the area coverage for a granule as a circle consisting of latitude center, longitude center, radius units, and radius value.

**Table 3-74. DsMdGrCircle**

| Column Name         | Code                | Type     | PK  | Mandatory |
|---------------------|---------------------|----------|-----|-----------|
| BoundingCircle      | BoundingCircle      | circle   | No  | Yes       |
| granuleId           | granuleId           | ID       | Yes | Yes       |
| RadiusUnits         | RadiusUnits         | char(10) | No  | No        |
| PrimaryCollectionId | PrimaryCollectionId | ID       | No  | No        |

Table 3-75 contains granule level float additional attribute values.

**Table 3-75. *DsMdGrFloatInfoContent***

| Column Name  | Code         | Type  | PK  | Mandatory |
|--------------|--------------|-------|-----|-----------|
| attributeld  | attributeld  | int   | Yes | Yes       |
| granuleId    | granuleId    | ID    | Yes | Yes       |
| grFloatValue | grFloatValue | float | Yes | Yes       |

Table 3-76 identifies the characteristics required to specify the area coverage for a collection as a polygon consisting of multiple points expressed by latitude and longitude values in clockwise order.

**Table 3-76. *DsMdGrGPolygon***

| Column Name         | Code                | Type     | PK  | Mandatory |
|---------------------|---------------------|----------|-----|-----------|
| GPolygonContainer   | GPolygonContainer   | gpolygon | No  | Yes       |
| granuleId           | granuleId           | ID       | Yes | Yes       |
| PrimaryCollectionId | PrimaryCollectionId | ID       | No  | No        |

Table 3-77 contains granule level integer additional attribute values.

**Table 3-77. *DsMdGrIntegerInfoContent***

| Column Name | Code        | Type | PK  | Mandatory |
|-------------|-------------|------|-----|-----------|
| attributeld | attributeld | int  | Yes | Yes       |
| granuleId   | granuleId   | ID   | Yes | Yes       |
| grIntValue  | grIntValue  | int  | Yes | Yes       |

Table 3-78 identifies the characteristics required to specify the area coverage for a collection as a single point expressed by latitude and longitude.

**Table 3-78. *DsMdGrPoint***

| Column Name   | Code          | Type  | PK  | Mandatory |
|---------------|---------------|-------|-----|-----------|
| granuleId     | granuleId     | ID    | Yes | Yes       |
| PointLocation | PointLocation | point | No  | Yes       |

Table 3-79 holds the specific characteristics for each type of sensor used to produce the granule.

**Table 3-79. *DsMdGrSensorCharacteristics***

| Column Name               | Code                      | Type        | PK  | Mandatory |
|---------------------------|---------------------------|-------------|-----|-----------|
| granuleId                 | granuleId                 | ID          | Yes | Yes       |
| SensorCharacteristicName  | SensorCharacteristicName  | varchar(80) | Yes | Yes       |
| SensorCharacteristicValue | SensorCharacteristicValue | varchar(80) | No  | No        |

Table 3-80 holds the quantity and or type of storage medium on which the granules are distributed.

**Table 3-80. *DsMdGrStorageMedium***

| Column Name   | Code          | Type        | PK  | Mandatory |
|---------------|---------------|-------------|-----|-----------|
| granuleId     | granuleId     | ID          | Yes | Yes       |
| StorageMedium | StorageMedium | varchar(30) | Yes | Yes       |

Table 3-81 contains granule level string additional attribute values.

**Table 3-81. *DsMdGrStringInfoContent***

| Column Name    | Code           | Type         | PK  | Mandatory |
|----------------|----------------|--------------|-----|-----------|
| attributeld    | attributeld    | int          | Yes | Yes       |
| granuleId      | granuleId      | ID           | Yes | Yes       |
| grStringValue  | grStringValue  | varchar(255) | No  | Yes       |
| SequenceNumber | sequenceNumber | smallint     | Yes | Yes       |

Table 3-82 contains the vertical spatial locality coverage for the granule.

**Table 3-82. *DsMdGrVerticalSpatialDomain***

| Column Name                | Code                       | Type        | PK  | Mandatory |
|----------------------------|----------------------------|-------------|-----|-----------|
| granuleId                  | granuleId                  | ID          | Yes | Yes       |
| VerticalSpatialDomainType  | VerticalSpatialDomainType  | varchar(20) | Yes | Yes       |
| VerticalSpatialDomainValue | VerticalSpatialDomainValue | varchar(20) | Yes | Yes       |

Table 3-83 contains the next available system generated unique identifier. There is a separate row in this table to generate identifiers for the DsMdAnalysisSource, DsMdCampaign, DsDeDictionaryAttribute, DsMdAdditionalAttributesm DsMdPlanarCoordinateSystems tables. There is also another row used to generate identifiers for DsMdCollections and DsMdGranules tables.

Each row in this table is padded out to the 2K page size to minimize locking contention on a per row basis.

**Table 3-83. DsMdIdentifier**

| Column Name            | Code                   | Type        | PK  | Mandatory |
|------------------------|------------------------|-------------|-----|-----------|
| identifierObjectType   | IdentifierObjectType   | char(30)    | Yes | Yes       |
| identifierPad1         | IdentifierPad1         | char(255)   | No  | Yes       |
| identifierPad2         | IdentifierPad2         | char(255)   | No  | Yes       |
| identifierPad3         | IdentifierPad3         | char(255)   | No  | Yes       |
| identifierPad4         | IdentifierPad4         | char(255)   | No  | Yes       |
| identifierPad5         | IdentifierPad5         | char(255)   | No  | Yes       |
| identifierPad6         | IdentifierPad6         | char(255)   | No  | Yes       |
| identifierPad7         | IdentifierPad7         | char(255)   | No  | Yes       |
| identifierType         | IdentifierType         | char(30)    | Yes | Yes       |
| lastIdentifier         | LastIdentifier         | numeric(16) | No  | Yes       |
| lastIntIdentifier      | LastIntIdentifier      | int         | No  | Yes       |
| lastSmallIntIdentifier | LastSmallIntIdentifier | smallint    | No  | Yes       |

Table 3-84 contains the logical pointer to the input granule.

**Table 3-84. DsMdInputGranule**

| Column Name           | Code                  | Type         | PK  | Mandatory |
|-----------------------|-----------------------|--------------|-----|-----------|
| granuleId             | GranuleId             | numeric(16)  | Yes | Yes       |
| inputGranule          | InputGranule          | numeric(16)  | Yes | Yes       |
| inputGranuleFileCount | InputGranuleFileCount | smallint     | No  | No        |
| InputPointer          | InputPointer          | varchar(255) | No  | Yes       |
| insertDatetime        | InsertDatetime        | datetime     | Yes | Yes       |

Table 3-85 holds system level metadata necessary for the Science Data Server to process ECS metadata. It tracks the various list sequences that are needed to properly insert each type of Earth Science Data Type (ESDT).

**Table 3-85. DsMdInsertSequence**

| <b>Column Name</b> | <b>Code</b>    | <b>Type</b> | <b>PK</b> | <b>Mandatory</b> |
|--------------------|----------------|-------------|-----------|------------------|
| BaseType           | BaseType       | varchar(40) | Yes       | Yes              |
| CommandType        | CommandType    | char        | No        | Yes              |
| DataType           | DataType       | char        | No        | Yes              |
| ListName           | ListName       | varchar(40) | No        | Yes              |
| SequenceNo         | SequenceNo     | int         | Yes       | Yes              |
| StoredProcName     | StoredProcName | varchar(40) | No        | Yes              |

Table 3-86 defines the devices used to measure or record data, including direct human observation. Included in this table are defined EOS Instruments. In cases where instruments have a single sensor or the instrument and sensor are used synonymously (e.g. AVHRR) the both Instrument and sensor should be recorded.

**Table 3-86. DsMdInstrument**

| <b>Column Name</b>  | <b>Code</b>         | <b>Type</b>  | <b>PK</b> | <b>Mandatory</b> |
|---------------------|---------------------|--------------|-----------|------------------|
| DbID                | DbID                | ID           | Yes       | Yes              |
| InstrumentLongName  | InstrumentLongName  | varchar(80)  | No        | No               |
| InstrumentShortName | InstrumentShortName | varchar(20)  | No        | Yes              |
| InstrumentTechnique | InstrumentTechnique | varchar(80)  | No        | No               |
| NumberOfSensors     | NumberOfSensors     | int          | No        | No               |
| insertTime          | InsertTime          | datetime     | No        | Yes              |
| lastUpdate          | LastUpdate          | DsTMdModDate | No        | Yes              |
| platformId          | PlatformId          | numeric(16)  | No        | Yes              |

Table 3-87 is used to define the characteristics of instrument specific attributes. It should not be used to define attributes of new objects.

**Table 3-87. DsMdInstrumentCharacteristic**

| <b>Column Name</b>            | <b>Code</b>                   | <b>Type</b> | <b>PK</b> | <b>Mandatory</b> |
|-------------------------------|-------------------------------|-------------|-----------|------------------|
| InstrumentCharacteristicDesc  | InstrumentCharacteristicDesc  | varchar(80) | No        | No               |
| InstrumentCharacteristicName  | InstrumentCharacteristicName  | varchar(40) | Yes       | Yes              |
| InstrumentCharacteristicUnit  | InstrumentCharacteristicUnit  | varchar(20) | No        | No               |
| InstrumentCharacteristicValue | InstrumentCharacteristicValue | varchar(15) | Yes       | Yes              |
| InstrumentCharDataType        | InstrumentCharDataType        | char(8)     | No        | No               |
| instrumentId                  | InstrumentId                  | numeric(16) | Yes       | Yes              |

Table 3-88 is used for functionality to be delivered in the future. This table holds the joinable pairs or tables and columns for SDSRV metadata tables.

**Table 3-88. DsMdJoins**

| Column Name | Code    | Type        | PK  | Mandatory |
|-------------|---------|-------------|-----|-----------|
| column1     | Column1 | varchar(60) | Yes | Yes       |
| column2     | Column2 | varchar(60) | Yes | Yes       |
| table1      | table1  | varchar(60) | Yes | Yes       |
| table2      | table2  | varchar(60) | Yes | Yes       |

Table 3-89 is used by the Science Data Server to define relationships between tables that are needed when constructing SQL calls or joins to retrieve data.

**Table 3-89. DsMdKeyDependency**

| Column Name           | Code                  | Type        | PK  | Mandatory |
|-----------------------|-----------------------|-------------|-----|-----------|
| DependentTableKeyName | DependentTableKeyName | varchar(40) | No  | No        |
| DependentTableName    | DependentTableName    | varchar(40) | No  | Yes       |
| SequenceNo            | SequenceNo            | int         | Yes | Yes       |
| TableKeyName          | TableKeyName          | varchar(40) | No  | Yes       |
| TableName             | TableName             | varchar(40) | Yes | Yes       |
| XrefFlag              | XrefFlag              | char        | No  | Yes       |

Table 3-90 is used at the collection level to describe the labeling of granules with compounded time/space text values and which are subsequently used to define more phenomenologically-based collections, thus the locality type and description are contained in this table.

**Table 3-90. DsMdLocality**

| Column Name         | Code                | Type         | PK  | Mandatory |
|---------------------|---------------------|--------------|-----|-----------|
| collectionId        | CollectionId        | ID           | Yes | Yes       |
| LocalityDescription | LocalityDescription | varchar(255) | No  | No        |
| LocalityType        | LocalityType        | varchar(20)  | Yes | Yes       |

Table 3-91 is used by the Landsat 7 Error Handling scripts to temporay save the points of a polygon.

**Table 3-91. DsMdL7ErrorHandling**

| <b>Column Name</b> | <b>Code</b> | <b>Type</b>  | <b>PK</b> | <b>Mandatory</b> |
|--------------------|-------------|--------------|-----------|------------------|
| geoidflag          | Geoidflag   | char(1)      | Yes       | Yes              |
| granuleId          | GranuleId   | ID           | Yes       | Yes              |
| lat11              | lat11       | numeric(8.4) | No        | Yes              |
| lat12              | lat12       | numeric(8.4) | No        | Yes              |
| lat13              | lat13       | numeric(8.4) | No        | Yes              |
| lat14              | lat14       | numeric(8.4) | No        | Yes              |
| long11             | long11      | numeric(8.4) | No        | Yes              |
| long12             | long12      | numeric(8.4) | No        | Yes              |
| long13             | long13      | numeric(8.4) | No        | Yes              |
| long14             | long14      | numeric(8.4) | No        | Yes              |

Table 3-92 is used by the Landsat 7 Error Handling scripts to temporary save the granule information.

**Table 3-92. DsMdL7ErrorHandling\_gr**

| <b>Column Name</b> | <b>Code</b>    | <b>Type</b> | <b>PK</b> | <b>Mandatory</b> |
|--------------------|----------------|-------------|-----------|------------------|
| granuleId          | GranuleId      | ID          | Yes       | Yes              |
| sceneGranuleId     | SceneGranuleId | ID          | Yes       | Yes              |
| ShortName          | ShortName      | char(8)     | No        | Yes              |

Table 3-93 contains the name of the geophysical parameter expressed in the data.

**Table 3-93. DsMdMeasuredParameter**

| <b>Column Name</b>           | <b>Code</b>                  | <b>Type</b>  | <b>PK</b> | <b>Mandatory</b> |
|------------------------------|------------------------------|--------------|-----------|------------------|
| AutomaticQualityFlag         | AutomaticQualityFlag         | varchar(64)  | No        | No               |
| AutomaticQualityFlagExplan   | AutomaticQualityFlagExplan   | varchar(255) | No        | No               |
| granuleId                    | GranuleId                    | ID           | Yes       | Yes              |
| OperationalQualityFlag       | OperationalQualityFlag       | varchar(20)  | No        | No               |
| OperationalQualityFlagExplan | OperationalQualityFlagExplan | varchar(255) | No        | No               |
| ParameterName                | ParameterName                | varchar(40)  | Yes       | Yes              |
| QAPercentCloudCover          | QAPercentCloudCover          | int          | No        | No               |
| QAPercentInterpolatedData    | QAPercentInterpolatedData    | int          | No        | No               |
| QAPercentMissingData         | QAPercentMissingData         | int          | No        | No               |
| QAPercentOutOfBoundsData     | QAPercentOutOfBoundsData     | int          | No        | No               |
| ScienceQualityFlag           | ScienceQualityFlag           | varchar(25)  | No        | No               |
| ScienceQualityFlagExplan     | ScienceQualityFlagExplan     | varchar(255) | No        | No               |

Table 3-94 contains the name of the multiple date period. Multiple version of SingleDateTime are generally used at the collection level.

**Table 3-94. DsMdMultipleDateTimePeriod**

| Column Name      | Code             | Type        | PK  | Mandatory |
|------------------|------------------|-------------|-----|-----------|
| collectionId     | CollectionId     | ID          | Yes | Yes       |
| MultipleDateName | MultipleDateName | varchar(30) | Yes | Yes       |

Table 3-95 contains the value, relationship and type for the multiple type collection. This table is used only when the collection has been developed by aggregating single type or other multiple type collections and/or granules using criteria which is recorded using the aggregation attributes.

**Table 3-95. DsMdMultipleTypeCollection**

| Column Name             | Code                    | Type        | PK  | Mandatory |
|-------------------------|-------------------------|-------------|-----|-----------|
| AggregationRelationship | AggregationRelationship | varchar(2)  | Yes | Yes       |
| AggregationType         | AggregationType         | varchar(20) | Yes | Yes       |
| AggregationValue        | AggregationValue        | varchar(80) | Yes | Yes       |
| collectionId            | CollectionId            | numeric(16) | Yes | Yes       |

Table 3-96 identifies the instrument's operational modes associated with the channel, wavelength, and FOV (e.g., launch, survival, initialization, safe, diagnostic, standby, crosstrack, biaxial, solar calibration).

**Table 3-96. DsMdOperationMode**

| Column Name   | Code          | Type        | PK  | Mandatory |
|---------------|---------------|-------------|-----|-----------|
| instrumentId  | InstrumentId  | ID          | Yes | Yes       |
| OperationMode | OperationMode | varchar(20) | Yes | Yes       |

Table 3-97 holds database specific operators and associated string templates used to formulate advanced SQL queries as part of the Science Data Server processing.

**Table 3-97. DsMdOperatorConversion**

| Column Name | Code     | Type        | PK  | Mandatory |
|-------------|----------|-------------|-----|-----------|
| DBString    | DBString | varchar(40) | No  | Yes       |
| Operator    | Operator | varchar(40) | Yes | Yes       |

Table 3-98 is used to describe the characteristics of the orbit calculated spatial domain to include the model name, orbit number, start and stop orbit number, equator crossing date and time, and equator crossing longitude.

**Table 3-98. *DsMdOrbitCalcSpatialDomain***

| Column Name              | Code                     | Type        | PK  | Mandatory |
|--------------------------|--------------------------|-------------|-----|-----------|
| EquatorCrossingDate      | EquatorCrossingDate      | datetime    | No  | No        |
| EquatorCrossingLongitude | EquatorCrossingLongitude | float       | Yes | Yes       |
| EquatorCrossingTime      | EquatorCrossingTime      | DsTMDTime   | No  | No        |
| granuleId                | granuleId                | ID          | Yes | Yes       |
| Orbit modelName          | Orbit modelName          | varchar(80) | No  | No        |
| OrbitNumber              | OrbitNumber              | int         | No  | No        |
| StartOrbitNumber         | StartOrbitNumber         | int         | No  | No        |
| StopOrbitNumber          | StopOrbitNumber          | int         | No  | No        |

Table 3-99 is used to store the MISR orbit granule data for a platform and instrument combination for the orbit calculated spatial domain.

**Table 3-99. *DsMdOrbitCalculatedSpatial***

| Column Name  | Code         | Type     | PK  | Mandatory |
|--------------|--------------|----------|-----|-----------|
| EndBlock     | EndBlock     | smallint | No  | Yes       |
| granuleId    | granuleId    | ID       | Yes | Yes       |
| PathNo       | PathNo       | smallint | No  | Yes       |
| platInstCode | platInstCode | int      | No  | Yes       |
| StartBlock   | StartBlock   | smallint | Yes | Yes       |

Table 3-100 contains a series of orbit polygons for a platform and instrument combination.

**Table 3-100. *DsMdOrbitPolygons***

| Column Name  | Code         | Type     | PK  | Mandatory |
|--------------|--------------|----------|-----|-----------|
| Orbit        | Orbit        | polygon  | No  | Yes       |
| PathNo       | PathNo       | smallint | Yes | Yes       |
| platInstCode | platInstCode | int      | Yes | Yes       |
| SequenceNo   | SequenceNo   | smallint | Yes | Yes       |

Table 3-101 maps additional attributes (PSAs) the storage data types available within the database to the names of the tables for collection and granule levels where values will be stored. The values are stored based on data type (e.g. string values are stored in a separate table from float or integer values).

**Table 3-101. *DsMdParmToTableVector***

| Column Name | Code        | Type        | PK  | Mandatory |
|-------------|-------------|-------------|-----|-----------|
| clTableName | clTableName | varchar(32) | No  | No        |
| DataType    | DataType    | char(10)    | Yes | Yes       |
| grTableName | grTableName | varchar(32) | No  | No        |

Table 3-102 contains the cross-reference between person and organization.

**Table 3-102. *DsMdPersonOrganizationXref***

| Column Name    | Code           | Type | PK  | Mandatory |
|----------------|----------------|------|-----|-----------|
| organizationId | organizationId | ID   | Yes | Yes       |
| personId       | personId       | ID   | Yes | Yes       |

Table 3-103 contains the delivered algorithm package PGE group information.

**Table 3-103. *DsMdPGEGroup***

| Column Name  | Code         | Type        | PK  | Mandatory |
|--------------|--------------|-------------|-----|-----------|
| dapDBId      | dapDBId      | numeric(16) | Yes | Yes       |
| DAPPGEName   | DAPPGEName   | varchar(20) | Yes | Yes       |
| DAPPGVersion | DAPPGVersion | char(10)    | Yes | Yes       |
| DAPSVersion  | DAPSVersion  | varchar(12) | Yes | Yes       |

Table 3-104 contains information about the coordinate system developed on the planar surface to include the distance units and encoding method.

**Table 3-104. DsMdPlanarCoordinateSystems**

| <b>Column Name</b>             | <b>Code</b>                    | <b>Type</b>  | <b>PK</b> | <b>Mandatory</b> |
|--------------------------------|--------------------------------|--------------|-----------|------------------|
| AbscissaResolution             | AbscissaResolution             | float        | No        | No               |
| BearingReferenceDirection      | BearingReferenceDirection      | varchar(20)  | No        | No               |
| BearingReferenceMeridian       | BearingReferenceMeridian       | varchar(255) | No        | No               |
| BearingResolution              | BearingResolution              | float        | No        | No               |
| BearingUnits                   | BearingUnits                   | varchar(255) | No        | No               |
| collectionId                   | collectionId                   | numeric(16)  | Yes       | Yes              |
| DistanceResolution             | DistanceResolution             | float        | No        | No               |
| GridCoordinateSystemName       | GridCoordinateSystemName       | varchar(255) | No        | No               |
| LocalPlanarCoordinateSystemDes | LocalPlanarCoordinateSystemDes | varchar(255) | No        | No               |
| LocalPlanarGeoreferenceInforma | LocalPlanarGeoreferenceInforma | varchar(255) | No        | No               |
| MapProjectionName              | MapProjectionName              | varchar(80)  | No        | No               |
| MapProjectionPointer           | MapProjectionPointer           | varchar(255) | No        | No               |
| OrdinateResolution             | OrdinateResolution             | float        | No        | No               |
| PlanarCoordinateEncodingMeth   | PlanarCoordinateEncodingMeth   | varchar(80)  | No        | No               |
| planarCoordinateSystemsID      | planarCoordinateSystemsID      | int          | Yes       | Yes              |
| PlanarDistanceUnits            | PlanarDistanceUnits            | varchar(80)  | No        | No               |

Table 3-105 describes the relevant platforms associated with the acquisition of the collection or granule. Platform types include Spacecraft, Aircraft, Vessel, Buoy, Platform, Station, Network or Human. In cases where Human is the platform type it should be of scientific relevancy to the collection. If an instrument is hand held and is relevant to the collection of the data then PlatformType=Human. In cases where an instrument is hand-held but the human is associated with another platform then all relevant platforms should be associated with the collection. Humans can be both Platforms and Instruments (e.g. if a human is standing on the ground and makes a visual observation then: PlatformType=Human, Instrument=HumanObservation, SensorShortName=HumanVisual).

**Table 3-105. DsMdPlatform**

| <b>Column Name</b> | <b>Code</b>       | <b>Type</b>  | <b>PK</b> | <b>Mandatory</b> |
|--------------------|-------------------|--------------|-----------|------------------|
| dbID               | dbID              | ID           | Yes       | Yes              |
| insertTime         | insertTime        | datetime     | No        | Yes              |
| lastUpdate         | lastUpdate        | DsTMDModDate | No        | Yes              |
| PlatformLongName   | PlatformLongName  | varchar(80)  | No        | Yes              |
| PlatformShortName  | PlatformShortName | varchar(20)  | No        | Yes              |
| PlatformType       | PlatformType      | varchar(20)  | No        | Yes              |

Table 3-106 is used to define the characteristics of platform specific attributes. It should not be used to define attributes of new objects.

**Table 3-106. DsMdPlatformCharacteristic**

| Column Name                    | Code                           | Type        | PK  | Mandatory |
|--------------------------------|--------------------------------|-------------|-----|-----------|
| PlatformCharacteristicDataType | PlatformCharacteristicDataType | char(8)     | No  | Yes       |
| PlatformCharacteristicDesc     | PlatformCharacteristicDesc     | varchar(80) | No  | Yes       |
| PlatformCharacteristicName     | PlatformCharacteristicName     | varchar(40) | Yes | Yes       |
| PlatformCharacteristicUnit     | PlatformCharacteristicUnit     | varchar(20) | No  | Yes       |
| PlatformCharacteristicValue    | PlatformCharacteristicValue    | varchar(20) | Yes | Yes       |
| platformId                     | platformId                     | numeric(16) | Yes | Yes       |

Table 3-107 contains resolution information for platform and instrument combination.

**Table 3-107. DsMdPlatInstrCode**

| Column Name            | Code                   | Type        | PK  | Mandatory |
|------------------------|------------------------|-------------|-----|-----------|
| instrumentName         | instrumentName         | varchar(80) | No  | Yes       |
| platformInstrumentCode | platformInstrumentCode | int         | Yes | Yes       |
| platformShortName      | platformShortName      | varchar(20) | No  | Yes       |

Table 3-108 contains the file storage details on each granule processed that is related to the granule database.

**Table 3-108. DsMdProcessHistFileStorage**

| Column Name      | Code             | Type         | PK  | Mandatory |
|------------------|------------------|--------------|-----|-----------|
| checkSum         | checkSum         | int          | No  | No        |
| creationDate     | creationDate     | datetime     | No  | No        |
| filePath         | filePath         | varchar(80)  | No  | No        |
| fileSize         | fileSize         | int          | No  | No        |
| granuleId        | granuleId        | numeric(16)  | Yes | Yes       |
| internalFileName | internalFileName | varchar(80)  | Yes | Yes       |
| userDataFile     | userDataFile     | varchar(255) | No  | No        |

Table 3-109 contains a logical pointer to the processing history which provides information about the processing of each granule associated with the granule database. This includes the input products and granules used to generate the product.

**Table 3-109. DsMdProcessingHistory**

| Column Name              | Code                     | Type          | PK  | Mandatory |
|--------------------------|--------------------------|---------------|-----|-----------|
| dbID                     | dbID                     | ID            | Yes | Yes       |
| deleteEffectiveDate      | deleteEffectiveDate      | smalldatetime | No  | No        |
| insertTime               | insertTime               | datetime      | No  | Yes       |
| lastUpdate               | lastUpdate               | DsTMdModDate  | No  | No        |
| ProductionHistoryPointer | ProcessingHistoryPointer | varchar(255)  | No  | No        |
| subType                  | subType                  | varchar(60)   | No  | No        |

Table 3-110 contains the name of the attribute in error in addition to a brief description of the error that occurred during processing.

**Table 3-110. DsMdProcessingQA**

| Column Name             | Code                    | Type         | PK  | Mandatory |
|-------------------------|-------------------------|--------------|-----|-----------|
| granuleId               | granuleId               | ID           | Yes | Yes       |
| ProcessingQAAttribute   | ProcessingQAAttribute   | varchar(80)  | Yes | Yes       |
| ProcessingQADescription | ProcessingQADescription | varchar(255) | No  | No        |

Table 3-111 allows the Science Data Server to process product metadata across multiple databases. This methodology is not currently implemented within ECS SDSRV.

**Table 3-111. DsMdProductDbXref**

| Column Name | Code        | Type        | PK  | Mandatory |
|-------------|-------------|-------------|-----|-----------|
| dbName      | dbName      | varchar(60) | Yes | Yes       |
| endDate     | endDate     | datetime    | No  | No        |
| productName | productName | varchar(60) | Yes | Yes       |
| startDate   | startDate   | datetime    | No  | No        |

Table 3-112 specifies the logical pointer to the QA granule. This table contains material for a separate file or files containing user specified QA information about the granule.

**Table 3-112. DsMdQaGranule**

| <b>Column Name</b>  | <b>Code</b>         | <b>Type</b>   | <b>PK</b> | <b>Mandatory</b> |
|---------------------|---------------------|---------------|-----------|------------------|
| dbID                | dbID                | ID            | Yes       | Yes              |
| deleteEffectiveDate | deleteEffectiveDate | smalldatetime | No        | No               |
| insertTime          | insertTime          | datetime      | No        | Yes              |
| lastUpdate          | lastUpdate          | DsTMDModDate  | No        | No               |
| QAGranulePointer    | QAGranulePointer    | varchar(255)  | No        | No               |
| subType             | subType             | varchar(60)   | No        | No               |

Table 3-113 contains the file storage details about user specified QA information about granules.

**Table 3-113. DsMdQaGranuleFileStorage**

| <b>Column Name</b> | <b>Code</b>      | <b>Type</b>  | <b>PK</b> | <b>Mandatory</b> |
|--------------------|------------------|--------------|-----------|------------------|
| checkSum           | checkSum         | int          | No        | No               |
| creationDate       | creationDate     | datetime     | No        | No               |
| filePath           | filePath         | varchar(80)  | No        | No               |
| fileSize           | fileSize         | int          | No        | No               |
| granuleId          | granuleId        | numeric(16)  | Yes       | Yes              |
| internalFileName   | internalFileName | varchar(80)  | Yes       | Yes              |
| userDataFile       | userDataFile     | varchar(255) | No        | No               |

Table 3-114 contains cross reference information about QA and granules.

**Table 3-114. DsMdQaGranuleXref**

| <b>Column Name</b> | <b>Code</b> | <b>Type</b> | <b>PK</b> | <b>Mandatory</b> |
|--------------------|-------------|-------------|-----------|------------------|
| granuleID          | granuleID   | numeric(16) | Yes       | Yes              |
| qalD               | qalD        | numeric(16) | Yes       | Yes              |

Table 3-115 contains a logical pointer to documents which record details of quality measurement and other comments concerning the collection.

**Table 3-115. DsMdQualityTextComment**

| <b>Column Name</b>        | <b>Code</b>               | <b>Type</b>  | <b>PK</b> | <b>Mandatory</b> |
|---------------------------|---------------------------|--------------|-----------|------------------|
| collectionId              | collectionId              | ID           | Yes       | Yes              |
| QualityTextCommentPointer | QualityTextCommentPointer | varchar(255) | No        | Yes              |

Table 3-116 specifies the start and end date/time of a granule or collection.

**Table 3-116. *DsMdRangeDateTime***

| Column Name        | Code               | Type      | PK  | Mandatory |
|--------------------|--------------------|-----------|-----|-----------|
| collectionId       | collectionId       | ID        | Yes | Yes       |
| RangeBeginningDate | RangeBeginningDate | datetime  | Yes | Yes       |
| RangeBeginningTime | RangeBeginningTime | DsTMDTime | No  | Yes       |
| RangeEndingDate    | RangeEndingDate    | datetime  | No  | Yes       |
| RangeEndingTime    | RangeEndingTime    | DsTMDTime | No  | Yes       |

Table 3-117 contains the name of the temporal period in addition to the date, time, duration unit, and value, and cycle duration unit and value. It is used at the collection level to describe a collection having granules that cover a regularly occurring period.

**Table 3-117. *DsMdRegularPeriodic***

| Column Name              | Code                     | Type         | PK  | Mandatory |
|--------------------------|--------------------------|--------------|-----|-----------|
| collectionId             | collectionId             | numeric(16)  | Yes | Yes       |
| Period1stDate            | Period1stDate            | datetime     | No  | Yes       |
| Period1stTime            | Period1stTime            | nvarchar(20) | No  | Yes       |
| PeriodCycleDurationUnit  | PeriodCycleDurationUnit  | varchar(15)  | No  | Yes       |
| PeriodCycleDurationValue | PeriodCycleDurationValue | float        | No  | Yes       |
| PeriodDurationUnit       | PeriodDurationUnit       | varchar(15)  | No  | Yes       |
| PeriodDurationValue      | PeriodDurationValue      | float        | No  | Yes       |
| PeriodName               | PeriodName               | varchar(30)  | Yes | Yes       |

Table 3-118 is a generic lookup table for SDSRV internal processing. It is used to reduce the number hardcoded values within the SDSRV database code to encourage a table driven design.

**Table 3-118. *DsMdSDSRVLookup***

| Column Name    | Code           | Type         | PK  | Mandatory |
|----------------|----------------|--------------|-----|-----------|
| lookupDatetime | lookupDatetime | datetime     | No  | No        |
| lookupFloat    | lookupFloat    | float        | No  | No        |
| lookupInt      | lookupInt      | int          | No  | No        |
| lookupString   | lookupString   | varchar(255) | No  | No        |
| lookupType     | lookupType     | varchar(40)  | Yes | Yes       |
| lookupValue    | lookupValue    | varchar(40)  | Yes | Yes       |

Table 3-119 is used to describe sensory subcomponents of an instrument. In cases where instruments have a single sensor or the Instrument and Sensor are used synonomously (e.g. AVHRR) both the Instrument and Sensor should be recorded.

**Table 3-119. *DsMdSensor***

| Column Name     | Code            | Type         | PK  | Mandatory |
|-----------------|-----------------|--------------|-----|-----------|
| dbID            | dbID            | ID           | Yes | Yes       |
| insertTime      | insertTime      | datetime     | No  | Yes       |
| instrumentId    | instrumentId    | ID           | No  | Yes       |
| lastUpdate      | lastUpdate      | DsTMDModDate | No  | Yes       |
| SensorLongName  | SensorLongName  | varchar(80)  | No  | No        |
| SensorShortName | SensorShortName | varchar(20)  | No  | Yes       |
| SensorTechnique | SensorTechnique | varchar(80)  | No  | Yes       |

Table 3-120 is used to define the characteristics of sensor specific attributes. It should not be used to define attributes of new objects.

**Table 3-120. *DsMdSensorCharacteristic***

| Column Name                  | Code                         | Type        | PK  | Mandatory |
|------------------------------|------------------------------|-------------|-----|-----------|
| SensorCharacteristicDataType | SensorCharacteristicDataType | char(8)     | No  | Yes       |
| SensorCharacteristicDesc     | SensorCharacteristicDesc     | varchar(80) | No  | Yes       |
| SensorCharacteristicName     | SensorCharacteristicName     | varchar(40) | Yes | Yes       |
| SensorCharacteristicUnit     | SensorCharacteristicUnit     | varchar(20) | No  | No        |
| SensorCharacteristicValue    | SensorCharacteristicValue    | varchar(80) | Yes | Yes       |
| sensorId                     | sensorId                     | numeric(16) | Yes | Yes       |

Table 3-121 contains the time of day and calendar date for an ECS granule. It provides a means of encoding a single date and time for a granule occurring at that time or during the period covered by the time (e.g. one day for a single date excluding the time within the day).

**Table 3-121. *DsMdSingleDateTime***

| Column Name      | Code             | Type         | PK  | Mandatory |
|------------------|------------------|--------------|-----|-----------|
| CalendarDate     | CalendarDate     | datetime     | Yes | Yes       |
| collectionId     | collectionId     | numeric(16)  | Yes | Yes       |
| MultipleDateName | MultipleDateName | varchar(30)  | No  | No        |
| TimeOfDay        | TimeOfDay        | nvarchar(20) | Yes | Yes       |

Table 3-122 is used as indicating the general type of coverage for collections.

**Table 3-122. *DsMdSpatial***

| Column Name                  | Code                         | Type         | PK  | Mandatory |
|------------------------------|------------------------------|--------------|-----|-----------|
| AltitudeDatumName            | AltitudeDatumName            | varchar(40)  | No  | No        |
| AltitudeDistanceUnits        | AltitudeDistanceUnits        | varchar(20)  | No  | No        |
| AltitudeEncodingMethod       | AltitudeEncodingMethod       | varchar(255) | No  | No        |
| collectionId                 | collectionId                 | numeric(16)  | Yes | Yes       |
| DenominatorOfFlatteningRatio | DenominatorOfFlatteningRatio | float        | No  | No        |
| DepthDatumName               | DepthDatumName               | varchar(80)  | No  | No        |
| DepthDistanceUnits           | DepthDistanceUnits           | varchar(20)  | No  | No        |
| DepthEncodingMethod          | DepthEncodingMethod          | varchar(255) | No  | No        |
| EllipsoidName                | EllipsoidName                | varchar(255) | No  | No        |
| GeographicCoordinateUnits    | GeographicCoordinateUnits    | varchar(80)  | No  | No        |
| HorizontalDatumName          | HorizontalDatumName          | varchar(30)  | No  | No        |
| LatitudeResolution           | LatitudeResolution           | float        | No  | No        |
| LocalCoordinateSystemDesc    | LocalCoordinateSystemDesc    | varchar(255) | No  | No        |
| LocalGeoreferenceInformation | LocalGeoreferenceInformation | varchar(255) | No  | No        |
| LongitudeResolution          | LongitudeResolution          | float        | No  | No        |
| SpatialCoverageType          | SpatialCoverageType          | char(10)     | No  | No        |
| SemiMajorAxis                | SemiMajorAxis                | float        | No  | No        |

Table 3-123 contains the spatial keywords associated with the ECS collection.

**Table 3-123. *DsMdSpatialKeyword***

| Column Name    | Code           | Type        | PK  | Mandatory |
|----------------|----------------|-------------|-----|-----------|
| collectionId   | collectionId   | ID          | Yes | Yes       |
| SpatialKeyword | SpatialKeyword | varchar(40) | Yes | Yes       |

Table 3-124 defines a component of an SSAP (Science Software Algorithm Package). Components include Algorithm Theoretical Basis Documents (ATBD), Calibration Files, Change logs, Context Diagrams, Compile information, Delivery Contents Lists, Detailed Design Document, External Data Pointer, Journal Articles, Operational Manuals, Science Software Scripts, Science Software Source code, Software Development Standards, Test Plans, Test Scripts, Test Site Configuration Plan, Test Source Code, and Metadata Configuration Files.

**Table 3-124. DsMdSSAPComponent**

| Column Name              | Code                     | Type          | PK  | Mandatory |
|--------------------------|--------------------------|---------------|-----|-----------|
| ComponentName            | ComponentName            | varchar(80)   | No  | Yes       |
| ComponentType            | ComponentType            | varchar(40)   | No  | Yes       |
| dbID                     | dbID                     | ID            | Yes | Yes       |
| insertTime               | insertTime               | datetime      | No  | Yes       |
| deleteEffectiveDate      | deleteEffectiveDate      | smalldatetime | No  | No        |
| lastUpdate               | lastUpdate               | DsTMDModDate  | No  | No        |
| SSAPAlgorithmPackageName | SSAPAlgorithmPackageName | varchar(80)   | No  | Yes       |
| SSAPInsertDate           | SSAPInsertDate           | datetime      | No  | Yes       |

Table 3-125 defines the versions (of the Algorithm Package) associated with a software component.

**Table 3-125. DsMdSSAPComponentAPVersion**

| Column Name           | Code                  | Type        | PK  | Mandatory |
|-----------------------|-----------------------|-------------|-----|-----------|
| SSAPAlgPackageVersion | SSAPAlgPackageVersion | varchar(20) | Yes | Yes       |
| ssapId                | ssapId                | ID          | Yes | Yes       |

Table 3-126 contains the file storage details on the components of an SSAP (Science Software Algorithm Package)

**Table 3-126. DsMdSSAPComponentFileStorage**

| Column Name      | Code             | Type         | PK  | Mandatory |
|------------------|------------------|--------------|-----|-----------|
| checkSum         | checkSum         | int          | No  | No        |
| creationDate     | creationDate     | datetime     | No  | No        |
| filePath         | filePath         | varchar(80)  | No  | No        |
| fileSize         | fileSize         | int          | No  | No        |
| granuleId        | granuleId        | numeric(16)  | Yes | Yes       |
| internalFileName | internalFileName | varchar(80)  | Yes | Yes       |
| userDataFile     | userDataFile     | varchar(255) | No  | No        |

Table 3-127 is used to store the information of the deleted/DFAed granules that need to be migrated to the storage management table.

**Table 3-127. DsMdStagingTable**

| Column Name      | Code             | Type        | PK | Mandatory |
|------------------|------------------|-------------|----|-----------|
| insertTime       | insertTime       | datetime    | No | No        |
| internalFileName | internalFileName | varchar(80) | No | Yes       |
| ShortName        | ShortName        | char(8)     | No | Yes       |
| VersionID        | VersionID        | tinyint     | No | Yes       |

Table 3-128 contains the telephone details associated with the contact.

**Table 3-128. DsMdTelephoneNumber**

| Column Name         | Code                | Type        | PK  | Mandatory |
|---------------------|---------------------|-------------|-----|-----------|
| contactId           | contactId           | ID          | Yes | Yes       |
| TelephoneNumber     | TelephoneNumber     | varchar(23) | Yes | Yes       |
| TelephoneNumberType | TelephoneNumberType | char(10)    | Yes | Yes       |

Table 3-129 contains attributes that describe the basis of the time system used for the collection.

**Table 3-129. DsMdTemporal**

| Column Name        | Code               | Type        | PK  | Mandatory |
|--------------------|--------------------|-------------|-----|-----------|
| collectionId       | collectionId       | ID          | Yes | Yes       |
| DateType           | DateType           | char(10)    | No  | Yes       |
| EndsatPresentFlag  | EndsatPresentFlag  | char(1)     | No  | No        |
| PrecisionOfSeconds | PrecisionOfSeconds | int         | No  | Yes       |
| TemporalRangeType  | TemporalRangeType  | varchar(20) | No  | Yes       |
| TimeType           | TimeType           | char(10)    | No  | Yes       |

Table 3-130 identifies the type of temporal characterization for a granule or collection.

**Table 3-130. DsMdTemporalKeyword**

| Column Name     | Code            | Type        | PK  | Mandatory |
|-----------------|-----------------|-------------|-----|-----------|
| collectionId    | collectionId    | ID          | Yes | Yes       |
| TemporalKeyword | TemporalKeyword | varchar(40) | Yes | Yes       |

Table 3-131 contains the large polygon data to support MISR and other generic repeating data item.

**Table 3-131. *DsMdUninterpretedData***

| Column Name | Code      | Type         | PK  | Mandatory |
|-------------|-----------|--------------|-----|-----------|
| component   | component | varchar(255) | No  | Yes       |
| granuleId   | granuleId | ID           | Yes | Yes       |
| seqNumber   | seqNumber | smallint     | Yes | Yes       |

Table 3-132 defines how ECS Metadata should be unloaded from the database.

**Table 3-132. *DsMdUnloadList***

| Column Name        | Code               | Type        | PK  | Mandatory |
|--------------------|--------------------|-------------|-----|-----------|
| BaseType           | BaseType           | varchar(40) | Yes | Yes       |
| CommandType        | CommandType        | char(1)     | No  | Yes       |
| ContainerGroupName | ContainerGroupName | varchar(60) | No  | No        |
| DataType           | DataType           | char(1)     | No  | Yes       |
| GroupName          | GroupName          | varchar(60) | Yes | Yes       |
| ListName           | ListName           | varchar(40) | Yes | Yes       |
| SequenceNo         | SequenceNo         | int         | Yes | Yes       |
| SubType            | SubType            | varchar(30) | Yes | Yes       |

Table 3-133 defines how ECS Metadata is updated in the database.

**Table 3-133. *DsMdUpdateSequence***

| Column Name | Code        | Type         | PK  | Mandatory |
|-------------|-------------|--------------|-----|-----------|
| BaseType    | BaseType    | varchar(60)  | Yes | Yes       |
| CommandType | CommandType | char         | No  | Yes       |
| DataType    | DataType    | char         | No  | Yes       |
| DBCommand   | DBCommand   | varchar(120) | No  | Yes       |
| GroupName   | GroupName   | varchar(60)  | Yes | Yes       |
| ListName    | ListName    | varchar(60)  | No  | Yes       |
| SequenceNo  | SequenceNo  | int          | Yes | Yes       |

Table 3-134 contains a logical pointer to documents used to record user comments on the collection.

**Table 3-134. DsMdUserCommentDocument**

| Column Name                | Code                       | Type         | PK  | Mandatory |
|----------------------------|----------------------------|--------------|-----|-----------|
| collectionId               | collectionId               | ID           | Yes | Yes       |
| UserCommentDocumentPointer | UserCommentDocumentPointer | varchar(255) | No  | Yes       |

Table 3-135 contains a logical pointer to a document used to record details of validation steps used for the assessment of granules and collections.

**Table 3-135. DsMdValidationDocument**

| Column Name               | Code                      | Type         | PK  | Mandatory |
|---------------------------|---------------------------|--------------|-----|-----------|
| collectionId              | collectionId              | ID           | Yes | Yes       |
| ValidationDocumentPointer | ValidationDocumentPointer | varchar(255) | No  | Yes       |

Table 3-136 tracks the XAR id and types.

**Table 3-136. DsMdXAR**

| Column Name | Code      | Type        | PK  | Mandatory |
|-------------|-----------|-------------|-----|-----------|
| granuleId   | granuleId | numeric(16) | Yes | Yes       |
| XARId       | XARId     | int         | Yes | Yes       |
| XARType     | XARType   | varchar(8)  | No  | Yes       |

Table 3-137 allows the Science Data Server to recover all the acquires request when the server starts warm.

**Table 3-137. DsSiAcquireCmd (1 of 2)**

| Column Name     | Code            | Type        | PK  | Mandatory |
|-----------------|-----------------|-------------|-----|-----------|
| category        | category        | tinyint     | No  | Yes       |
| commandID       | commandID       | int         | Yes | Yes       |
| ddistMediaFmt   | ddistMediaFmt   | varchar(40) | No  | No        |
| ddistMediaType  | ddistMediaType  | varchar(40) | No  | No        |
| ddistNotifyType | ddistNotifyType | varchar(40) | No  | No        |
| ecsUserProfile  | ecsUserProfile  | varchar(80) | No  | No        |
| ftpHost         | ftpHost         | varchar(60) | No  | No        |
| ftpPassword     | ftpPassword     | Varchar(60) | No  | No        |
| ftpPushDest     | ftpPushDest     | varchar(60) | No  | No        |
| ftpUser         | ftpUser         | varchar(60) | No  | No        |

**Table 3-137. DsSiAcquireCmd (2 of 2)**

| Column Name        | Code               | Type        | PK | Mandatory |
|--------------------|--------------------|-------------|----|-----------|
| lastUpdate         | lastUpdate         | datetime    | No | Yes       |
| notify             | notify             | varchar(60) | No | No        |
| orderID            | orderID            | varchar(20) | No | No        |
| orderTrackingReqID | orderTrackingReqID | varchar(20) | No | No        |
| requestID          | requestID          | int         | No | Yes       |
| site               | site               | varchar(60) | No | No        |
| userString         | userString         | varchar(60) | No | No        |

Table 3-138 contains all the file names and the sequence of the file for an acquire command.

**Table 3-138. DsSiAcquireCmdFileInfo**

| Column Name  | Code         | Type        | PK  | Mandatory |
|--------------|--------------|-------------|-----|-----------|
| commandID    | commandID    | int         | Yes | Yes       |
| seqNumber    | seqNumber    | smallint    | Yes | Yes       |
| userFileName | userFileName | varchar(80) | No  | Yes       |

Table 3-139 contains all the LANDSAT band information for a LANDSAT acquire command.

**Table 3-139. DsSiAcqBand**

| Column Name | Code      | Type         | PK  | Mandatory |
|-------------|-----------|--------------|-----|-----------|
| commandID   | commandID | int          | Yes | Yes       |
| Band        | Band      | Varchar(100) | Yes | Yes       |

Table 3-140 contains all the latitude and longitude ifnformation for a LANDSAT acquire command.

**Table 3-140. DsSiAcqPolygon**

| Column Name | Code      | Type             | PK  | Mandatory |
|-------------|-----------|------------------|-----|-----------|
| commandID   | commandID | int              | Yes | Yes       |
| seqNumber   | seqNumber | smallint         | Yes | Yes       |
| Latitudde   | Latitude  | double precision | No  | Yes       |
| Longitude   | Longitude | double precision | No  | Yes       |

Table 3-141 allows the Science Data Server to make persistant requests so processing can continue once the system comes online after failure.

**Table 3-141. *DsSiReqDomain***

| Column Name   | Code        | Type         | PK  | Mandatory |
|---------------|-------------|--------------|-----|-----------|
| domainEntryUR | domainEntry | int          | Yes | Yes       |
| reqDomainID   | reqDomainID | varchar(200) | Yes | Yes       |

Table 3-142 tracks the request session and priority information and allows the Science Data Server to make persistant requests so processing can continue once the system comes online after failure.

**Table 3-142. *DsSiRequest***

| Column Name    | Code           | Type      | PK  | Mandatory |
|----------------|----------------|-----------|-----|-----------|
| asyncFlag      | asyncFlag      | tinyint   | No  | Yes       |
| clientCDSEntry | clientCDSEntry | char(255) | No  | Yes       |
| createTime     | createTime     | datetime  | No  | Yes       |
| priority       | priority       | smallint  | No  | Yes       |
| sessionID      | sessionID      | char(40)  | No  | Yes       |
| userID         | userID         | char(40)  | No  | Yes       |
| dbIDint        | dbIDint        | int       | Yes | Yes       |
| rpcID          | rpcID          | char(200) | No  | Yes       |
| state          | state          | tinyint   | No  | Yes       |

Table 3-143 identifies the current version of the Science Data Server Database.

**Table 3-143. *EcDbDatabaseVersions***

| Column Name            | Code                   | Type         | PK  | Mandatory |
|------------------------|------------------------|--------------|-----|-----------|
| EcDbComments           | EcDbComments           | varchar(255) | No  | No        |
| EcDbCurrentVersionFlag | EcDbCurrentVersionFlag | char(1)      | No  | No        |
| EcDbDatabaseName       | EcDbDatabaseName       | varchar(255) | No  | No        |
| EcDbDropDescription    | EcDbDropDescription    | varchar(255) | No  | No        |
| EcDbDropInstallDate    | EcDbDropInstallDate    | datetime     | No  | No        |
| EcDbDropVersion        | EcDbDropVersion        | char(64)     | Yes | Yes       |
| EcDbSchemaVersionId    | EcDbSchemaVersionId    | smallint     | Yes | Yes       |
| EcDbSybaseServer       | EcDbSybaseServer       | varchar(255) | No  | No        |
| EcDbSybaseVersion      | EcDbSybaseVersion      | varchar(255) | No  | No        |
| EcDbUpdateProcess      | EcDbUpdateProcess      | varchar(255) | No  | No        |

Table 3-144 provides the maximum date range for each ESDT.

**Table 3-144. *DsMdTemporalSize***

| Column Name           | Code                  | Type    | PK  | Mandatory |
|-----------------------|-----------------------|---------|-----|-----------|
| ShortName             | ShortName             | char(8) | Yes | Yes       |
| VersionID             | VersionID             | tinyint | Yes | Yes       |
| TemporalSizeInSeconds | TemporalSizeInSeconds | int     | No  | Yes       |

Table 3-145 allows the Science Data Server to make persistant requests so processing can continue once the system comes online after failure.

**Table 3-145. *DsSiURs***

| Column Name | Code      | Type         | PK  | Mandatory |
|-------------|-----------|--------------|-----|-----------|
| requestID   | requestID | int          | Yes | Yes       |
| seq         | seq       | smallint     | Yes | Yes       |
| ur          | ur        | varchar(200) | No  | Yes       |

Table 3-146 tracks the request session and priority information and allows the Science Data Server to make persistant requests so processing can continue once the system comes online after failure.

**Table 3-146. *DsSiRequestDetails***

| Column Name | Code       | Type      | PK  | Mandatory |
|-------------|------------|-----------|-----|-----------|
| dbID        | dbID       | int       | Yes | Yes       |
| rpcID       | rpcID      | char(200) | No  | Yes       |
| createTime  | createTime | datetime  | No  | Yes       |
| client      | client     | Char(40)  | No  | Yes       |
| state       | state      | tinyint   | No  | Yes       |
| priority    | priority   | smallint  | No  | Yes       |

Table 3-147 allows the Science Data Server to recover all the acquires request when the server starts warm.

**Table 3-147. DsSiParameters**

| Column Name | Code       | Type         | PK  | Mandatory |
|-------------|------------|--------------|-----|-----------|
| requestID   | requestID  | int          | Yes | Yes       |
| seq         | seq        | smallint     | Yes | Yes       |
| parameters  | parameters | Varchar(255) | No  | Yes       |

Table 3-148 allows the system to determine which science site can update the QA flags of which ESDT.

**Table 3-148. DsQAMUTESDTSite**

| Column Name | Code      | Type        | PK  | Mandatory |
|-------------|-----------|-------------|-----|-----------|
| ShortName   | ShortName | Char(8)     | Yes | Yes       |
| Site        | Site      | Varchar(25) | Yes | Yes       |

### 3.1.3 Columns

Brief definitions of each of the columns present in the database tables defined above are contained herein. Many of the columns in the SDSRV database have a set of approved data values that are checked againsts during data validation. This approved set of data values is found in 910-TDA-015.

| ColumnCode                     | Table                       | Description                                 |
|--------------------------------|-----------------------------|---|
| AbscissaResolution             | DsMdPlanarCoordinateSystems | Refer to technical paper 420-TP-020         |
| AccessConstraints              | DsMdCollections             | Refer to technical paper 420-TP-020         |
| accessPermissions              | DsMdCollections             | The access permission of an ESDT data type. |
| AdditionalAttributeDataType    | DsMdAdditionalAttributes    | Refer to technical paper 420-TP-020         |
| AdditionalAttributeDescription | DsMdAdditionalAttributes    | Refer to technical paper 420-TP-020         |
| AdditionalAttributeName        | DsMdAdditionalAttributes    | Refer to technical paper 420-TP-020         |
| AggregationRelationship        | DsMdMultipleTypeCollection  | Refer to technical paper 420-TP-020         |
| AggregationType                | DsMdMultipleTypeCollection  | Refer to technical paper 420-TP-020         |
| AggregationValue               | DsMdMultipleTypeCollection  | Refer to technical paper 420-TP-020         |

| <b>ColumnCode</b>            | <b>Table</b>  | <b>Description</b>  |
|------------------------------|---|---|
| AlgorithmPackageAcceptDate   | DsMdAlgorithmPackage                                  | Refer to technical paper 420-TP-020   |
| AlgorithmPackageMaturityCode | DsMdAlgorithmPackage                                  | Refer to technical paper 420-TP-020   |
| AlgorithmPackageName         | DsMdAlgorithmPackage                                  | Refer to technical paper 420-TP-020   |
| AlgorithmPackageVersion      | DsMdAlgorithmPackage                                  | Refer to technical paper 420-TP-020   |
| AltitudeDatumName            | DsMdSpatial   | Refer to technical paper 420-TP-020   |
| AltitudeDistanceUnits        | DsMdSpatial   | Refer to technical paper 420-TP-020   |
| AltitudeEncodingMethod       | DsMdSpatial   | Refer to technical paper 420-TP-020   |
| AltitudeResolution           | DsMdAltitudeResolution<br>DsMdSpatial                 | Refer to technical paper 420-TP-020   |
| AnalysisLongName             | DsMdAnalysisSource                                    | Refer to technical paper 420-TP-020   |
| AnalysisShortName            | DsMdAnalysisSource                                    | Refer to technical paper 420-TP-020   |
| analysisSourceId             | DsMdCollectionAnalysisXref<br>DsMdGranuleAnalysisXref | The unique ID which identifies the analysis source.   |
| AnalysisTechnique            | DsMdAnalysisSource                                    | Refer to technical paper 420-TP-020   |
| AnalysisType                 | DsMdAnalysisSource                                    | Refer to technical paper 420-TP-020   |
| AncillaryInputPointer        | DsMdAncillaryInput                                    | Refer to technical paper 420-TP-020   |
| AncillaryInputType           | DsMdAncillaryInput                                    | Refer to technical paper 420-TP-020   |
| apld                         | DsMdAPSAPComponentXref<br>DsMdCollectionAPXref        | The unique identifier of an algorithm package.  |
| ArchiveCenter                | DsMdCollections                                       | Refer to technical paper 420-TP-020   |
| AssociatedShortName          | DsMdCollectionAssociation                             | The Shortname of a collection that is in some way related to the collection in question.                            |
| AssociatedVersionId          | DsMdCollectionAssociation                             | The version ID of the ESDT which is associated to another ESDT. This is used together with the AssociatedShortName. |
| asyncFlag                    | DsSiRequest   | Determines if a processing request is asynchronous or synchronous.  |

| <b>ColumnCode</b>          | <b>Table</b>   | <b>Description</b>  |
|----------------------------|--|---|
| attributeID                | DsDeDictionaryAttribute<br>DsDeDictionaryRule  | The unique ID which identifies a dictionary attribute used to validate a metadata attribute during ESDT insertion.                                  |
| attributeld                | DsMsAdditionalAttributes<br>DsMdCollectionAddnlAttribsXref<br>DsMdCollFloatInfoContent<br>DsMdCollIntegerInfoContent<br>DsMdCollStringInfoContent<br>DsMdGrIntegerInfoContent<br>DsMdGrFloatInfoContent<br>DsMdGrStringInfoContent | The unique ID which identifies an additional attribute (product specific attribute supplied by a data provider).                                    |
| attributeName              | DsMdAttributeList  | This holds the name (255 character or less) of the attribute.   |
| attributeName              | DsMdAttributeTableXref   | This holds the name (80 character or less) of the attribute.  |
| AutomaticQualityFlag       | DsMdMeasuredParameter  | Refer to technical paper 420-TP-020   |
| AutomaticQualityFlagExplan | DsMdMeasuredParameter  | Refer to technical paper 420-TP-020   |
| Band                       | DsSiAcqBand  | Holds the band information of a lansat floating scence acquire command  |
| BaseTable                  | DsMdCommandConversion  | The table name associated with a metadata group, operator and SQL string used to process a SDSRV internal command. See table DsMdCommandConversion. |
| BaseTableName              | DsMdBaseDependent  | The name of a base (parent) table.  |
| BaseType                   | DsMdBaseDependent<br>DsMdInsertSequence<br>DsMdUnloadList<br>DsMdUpdateSequence  | Type of ESDT which is being processed (i.e. Browse, Science, QA, PH, ORBIT).  |
| BearingReferenceDirection  | DsMdPlanarCoordinateSystems  | Refer to technical paper 420-TP-020   |
| BearingReferenceMeridian   | DsMdPlanarCoordinateSystems  | Refer to technical paper 420-TP-020   |
| BearingResolution          | DsMdPlanarCoordinateSystems  | Refer to technical paper 420-TP-020   |
| BearingUnits               | DsMdPlanarCoordinateSystems  | Refer to technical paper 420-TP-020   |

| <b>ColumnCode</b>              | <b>Table</b>  | <b>Description</b>   |
|--------------------------------|---|--|
| BeginningDateTime              | DsMdGranules  | The attribute within SDSRV that allows both the SingleDateTime (TimeOfDay) and RangeDateTime(RangeBeginningDate) to be efficiently indexed and searched. |
| BoundingCircle                 | DsMdCICircle<br>DsmdGrCircle  | The geographic extent of circular region included in granule or collection.  |
| BoundingRectangle              | DsMdCIBoundingRectangle<br>DsMdGrBoundingRectangle  | The geographic extent of rectangular region included in granule or collection.   |
| BrowseDescription              | DsMdBrowse  | Refer to technical paper 420-TP-020  |
| browseld                       | DsMdCollBrowseXref<br>DsMdBrowseGranuleXref   | The unique ID which identifies the browse.   |
| BrowsePointer                  | DsMdBrowse  | Refer to technical paper 420-TP-020  |
| BrowseProductionDateTime       | DsMdBrowse  | Refer to technical paper 420-TP-020  |
| BrowseSize                     | DsMdBrowse  | Refer to technical paper 420-TP-020  |
| CalendarDate                   | DsMdGranules<br>DsMdSingleDateTime  | Refer to technical paper 420-TP-020  |
| CampaignEndDate                | DsMdCampaign  | Refer to technical paper 420-TP-020  |
| campaignId                     | DsMdCollectionCampaignXref<br>DsMdGranuleCampaignXref   | The unique ID which identifies a campaign.   |
| CampaignLongName               | DsMdCampaign  | Refer to technical paper 420-TP-020  |
| CampaignShortName              | DsMdCampaign  | Refer to technical paper 420-TP-020  |
| CampaignStartDate              | DsMdCampaign  | Refer to technical paper 420-TP-020  |
| category                       | DsSiAcquireCmd  | The category for an acquire request.   |
| checkSum                       | DsMdFileStorage<br>DsMdAlgorithmPkgFileStorage<br>DsMdSSAPComponentFileStorage<br>DsMdProcessHistFileStorage<br>DsMdBrowseFileStorage<br>DsMdQaGranuleFileStorage<br>DsMdDAPFileStorage | The checksum digit which is saved to ensure that a granules file within the STMGT archive is not corrupted.  |
| CitationForExternalPublication | DsMdCollections   | Refer to technical paper 420-TP-020  |

| <b>ColumnCode</b>     | <b>Table</b>  | <b>Description</b>   |
|-----------------------|---|--|
| City                  | DsMdContactAddress  | Refer to technical paper 420-TP-020  |
| clFloatValue          | DsMdCollFloatInfoContent  | Refer to technical paper 420-TP-020  |
| clientCDSEntry        | DsSiRequest   | The DCE CDS entry saved for persistence of processing requests.  |
| client                | DsSiRequestDetails  | The DCE CDS entry saved for persistence of processing requests.  |
| clIntValue            | DsMdCollIntegerInfoContent  | The ESDT level column used to hold AdditionalAttribute values of type integer.   |
| clStringValue         | DSMdCollStringInfoContent   | The ESDT level column used to hold AdditionalAttribute values of type varchar. This includes strings and dates in string format. |
| clTableName           | DsMdParmToTableVector   | The name of the ESDT level table holding the specific datatype specific Additional Attribute Value.                              |
| CollectionDescription | DsMdCollections   | Refer to technical paper 420-TP-020  |
| collectionId          | DsMdAltitudeResolution<br>DsMdCollectionAddnlAttribsXref<br>DsMdCollBrowseXref<br>DsMdCollDisciplineKeywordXref<br>DsMdCollectionAnalysisXref<br>DsMdCollectionAPXref<br>DsMdCollectionAssociation<br>DsMdCollectionCampaignXref<br>DsMdCollectionContactXref<br>DsMdCollectionGranuleXref<br>DsMdClboundingRectangle<br>DsMdCICircle<br>DsMdCIGPolygon<br>DsMdCIPoint<br>DsMdCollectionInstrumentXref<br>DsMdCollStringInfoContent<br>DsMdCollectionSensorXref<br>DsMdCollFloatInfoContent<br>DsMdCollIntegerInfoContent<br>DsMdCollectionPlatformXref<br>DsMdCollReview | The unique ID which identifies the collection.   |

| <b>ColumnCode</b> | <b>Table</b>  | <b>Description</b>   |
|-------------------|---|--|
|                   | DsMdCollStorageMedium<br>DsMdCollURLInfo<br>DsMdCollZoneIdentifier<br>DsMdCSDTDescription<br>DsMdDepthResolution<br>DsMdLocality<br>DsMdMultipleDateTimePeriod<br>DsMdMultipleTypeCollection<br>DsMdPlanarCoordinateSystems<br>DsMdQualityTextComment<br>DsMdRangeDateTime<br>DsMdRegularPeriodic<br>DsMdSingleDateTime<br>DsMdSpatial<br>DsMdSpatialKeyword<br>DsMdTemporal<br>DsMdTemporalKeyword<br>DsMdUserCommentDocument<br>DsMdValidationDocument<br>DsMdVerticalSpatialDomain |  |
| CollectionState   | DsMdCollections   | Refer to technical paper 420-TP-020  |
| CollectionType    | DsMdCollectionAssociation   | Refer to technical paper 420-TP-020  |
| CollectionUse1    | DsMdCollectionAssociation   | Refer to defintion on Collection Use in technical paper 420-TP-020                         |
| CollectionUse2    | DsMdCollectionAssociation   | Refer to definition of Collectionuse in technical paper 420-TP-020                         |
| column1           | DsMdJoins   | The first column of a pair used within a SQL statement to join two SDSRV tables together.  |
| column2           | DsMdJoins   | The second column of a pair used within a SQL statement to join two SDSRV tables together. |
| columnName        | DsMsAttributeTableXref  | The name of a database table column.   |
| commandID         | DsSiAcquireCmd<br>DsSiAcquireCmdFileInfo<br>DsSiAcqBand<br>DsSiAcqPolygon   | The unique identifier of an SDSRV acquire command request.                                 |
| CommandType       | DsMdInsertSequence<br>DsMdUnloadList<br>DsMdUpdateSequence  | The type of command to be performed.   |

| <b>ColumnCode</b>       | <b>Table</b>   | <b>Description</b>  |
|-------------------------|--|---|
| component               | DsMdUninterpretedData  | The string of a large polygon data.   |
| ComponentName           | DsMdSSAPComponent  | Refer to technical paper 420-TP-020   |
| ComponentType           | DsMdSSAPComponent  | Refer to technical paper 420-TP-020   |
| ContactFirstName        | DsMdContactPersons   | Refer to technical paper 420-TP-020   |
| configuredName          | DsGeESDTConfiguredType   | The name identifying a installable object within the SDSRV. This is usually the ShortName of ESDT.  |
| contactId               | DsMdApContactXref<br>DsMdCollectionContactXref<br>DsMdContactAddress<br>DsMdContactOrganizations<br>DsMdContactPersons<br>DsMdEmailAddress<br>DsMdTelephoneNumbers | The unique ID which identifies the contact information.   |
| ContactInstructions     | DsMdContact  | Refer to technical paper 420-TP-020   |
| ContactJobPosition      | DsMdContactPersons   | Refer to technical paper 420-TP-020   |
| ContactLastName         | DsMdContactPersons   | Refer to technical paper 420-TP-020   |
| ContactMiddleName       | DsMdContactPersons   | Refer to technical paper 420-TP-020   |
| ContactOrganizationName | DsMdContactOrganizations   | Refer to technical paper 420-TP-020   |
| ContactRole             | DsMdContact  | Refer to technical paper 420-TP-020   |
| ContainerGroupName      | DsMdUnloadList   | The name of the metadata container group that holds specific attributes. Used for internal SDSRV processing.  |
| ContainerIndicator      | DsDeDictionaryContent  | Indicates whether the qualified group name in the same table is a container group. A container group is a meta data attribute that contains other groups or attributes. |
| ContentID               | DsDeDictionaryContent<br>DsDeDictionaryAttribute   | The unique ID which identifies the dictionary content.  |
| Country                 | DsMdContactAddress   | Refer to technical paper 420-TP-020   |

| <b>ColumnCode</b>    | <b>Table</b>  | <b>Description</b>  |
|----------------------|---|---|
| createTime           | DsSiRequest<br>DsSiRequestDetails   | The date and time that the request was created.   |
| creationDate         | DsMdFileStorage<br>DsMdAlgorithmPkgFileStorage<br>DsMdBrowseFileStorage<br>DsMdSSAPComponentFileStorage<br>DsMdDAPFileStorage<br>DsMdQaGranuleFileStorage<br>DsMdProcessHistFileStorage | The date of the granule creation passed to SDSRV from the data provider.  |
| CSDTComments         | DsMdCSDTDescription   | Refer to technical paper 420-TP-020   |
| currentGranuleId     | DsMdGranuleVersions   | The unique granule identifier of the current granule that associates two granule version together. Contrast with previousGranuleId.                                   |
| currentVersion       | DsMdGranuleVersions   | The name of the current granule version granule that associates two granule version together. Contrast with previousVersion.  |
| dapDBId              | DsMdPGEGroup  | One of the columns in the unique identifier for the DsMdPGEGroup table.   |
| DAPID                | DsMdDAP   | The unique identifier for the DsMdDAP table.  |
| dapId                | DsMdApContactXref   | Is a foreign key to the unique identifier for the Delivered Algorithm Package table (DsMdDAP).  |
| DAPInsertDate        | DsMdDAP   | The insert date given to SDSRV by the data provider for the Delivered Algorithm Package (DsMdDAP) table. The PGENAME associated with the Delivered Algorithm Package. |
| DAPPGEName           | DsMdPGEGroup  | Refer to definition of PGENAME in technical paper 420-TP-020  |
| DAPPGEVersion        | DsMdPGEGroup  | Refer to definition of PGEVersion in technical paper 420-TP-020   |
| DAPSVersion          | DsMdPGEGroup  | Refer to definition of SWVersion in technical paper 420-TP-020  |
| DatasetDisclaimerPtr | DsMdCollURLInfo   | The URL of the dataset disclaimer page.   |

| <b>ColumnCode</b> | <b>Table</b>   | <b>Description</b>                                |
|-------------------|--|---|
| DataType          | DsMdInsertSequence<br>DsMdParmToTableVector<br>DsMdUnloadList<br>DsMdUpdateSequence  | The type of data.                                 |
| DateType          | DsMdTemporal   | Refer to technical paper 420-TP-020               |
| DayNightFlag      | DsMdGranules   | Refer to technical paper 420-TP-020               |
| DBCommand         | DsMdCommandConversion<br>DsMdUpdateSequence  | The database command to be performed.             |
| dbID              | DsMdAlgorithmPackage<br>DsMdAnalysisSource<br>DsMdBrowse<br>DsMdCampaign<br>DsMdCollections<br>DsMdContact<br>DsMdDAP<br>DsMdDisciplineKeywords<br>DsMdGranules<br>DsMdInstrument<br>DsMdPlatform<br>DsMdProcessingHistory<br>DsMdQaGranule<br>DsMdSensor<br>DsMdSSAPComponent | The unique ID which identifies a database tuple.  |
| dbID              | DsSiRequestDetails   | The unique request ID                             |
| dbIDint           | DsSiRequest  | The unique request ID                             |
| dbName            | DsMdProductDbXref  | Holds the database name.                          |
| DBString          | DsMdAttributeConversion<br>DsMdOperatorConversion  | The database map to an attribute of ECS metadata. |
| ddistMediaFmt     | DsSiAcquireCmd   | The media format for an acquire request.          |
| ddistMediaType    | DsSiAcquireCmd   | The media type for an acquire request.            |
| ddistNotifyType   | DsSiAcquireCmd   | The notify type for an acquire request.           |

| <b>ColumnCode</b>            | <b>Table</b>  | <b>Description</b>  |
|------------------------------|---|---|
| deleteEffectiveDate          | DsMdAlgorithmPackage<br>DsMdDAP<br>DsMdBrowse<br>DsMdFileStorage<br>DsMdGranules<br>DsMdSSAPComponent<br>DsMdProcessingHistory<br>DsMdQaGranule | Date on which the entry may be deleted.   |
| deleteFromArchive            | DsMdGranules  | Granules deleted from the archives.   |
| DeliveryPurpose              | DsMdAlgorithmPackage  | Refer to technical paper 420-TP-020   |
| DenominatorOfFlatteningRatio | DsMdSpatial   | Refer to technical paper 420-TP-020   |
| DependentTableIDName         | DsMdBaseDependent   | The unique identifier of a dependent (child) table.   |
| DependentTableName           | DsMdKeyDependency   | The name of the primary key attribute of a dependent table.   |
| DependentTableName           | DsMdBaseDependent<br>DsMdKeyDependency  | The name of a dependent (child) table.  |
| DepthDatumName               | DsMdSpatial   | Refer to technical paper 420-TP-020   |
| DepthDistanceUnits           | DsMdSpatial   | Refer to technical paper 420-TP-020   |
| DepthEncodingMethod          | DsMdSpatial   | Refer to technical paper 420-TP-020   |
| DepthResolution              | DsMdDepthResolution   | Refer to technical paper 420-TP-020   |
| description                  | DsGeESDTConfiguredType  | The ESDT description  |
| descriptorFileName           | DsGeESDTConfiguredType  | The ESDT description from the Descriptor file given by the data provider.   |
| DFAFlag                      | DsMdDeletedGranules   | Refer to technical paper 420-TP-020   |
| disciplineKeyword            | DsDeECSKeywordValids  | The specific attribute valid value corresponding to the ECSDisciplineKeyword attribute for a given ECS keyword stack entry. |
| disciplineKeywordId          | DsDeECSKeywordValids<br>DsMdCollDisciplineKeywordXref   | The unique identifier for a discipline keyword.   |
| DistanceResolution           | DsMdPlanarCoordinateSystems   | Refer to technical paper 420-TP-020   |
| dllFileName                  | DsGeESDTConfiguredType  | The file name of the ESDTs dynamic link library file.   |

| <b>ColumnCode</b>      | <b>Table</b>             | <b>Description</b>   |
|------------------------|--------------------------|--|
| domainEntryUR          | DsSiReqDomain            | The domain number for a specific persisted request.  |
| DynamicSQLFlag         | DsMdAttributeConversion  | A flag indicating whether dynamic SQL is used.   |
| EcDbComments           | EcDbDatabaseVersions     | Notes or comments on the database version level.   |
| EcDbCurrentVersionFlag | EcDbDatabaseVersions     | Flag indicating if this row represents the current database version entry.   |
| EcDbDatabaseName       | EcDbDatabaseVersions     | The name of the database for which this database versions level is applied.  |
| EcDbDropDescription    | EcDbDatabaseVersions     | The official name of the ECS software drops for this database version level.   |
| EcDbDropInstallDate    | EcDbDatabaseVersions     | The date and time that the database versions level was installed.  |
| EcDbDropVersion        | EcDbDatabaseVersions     | The official description of the ECS software drops for this database version level.                                      |
| EcDbSchemaVersionId    | EcDbDatabaseVersions     | The subsystem-specific identifier for this database schema version.  |
| EcDbSybaseServer       | EcDbDatabaseVersions     | The name of the baseline Sybase SQL server controlling this database.  |
| EcDbSybaseVersion      | EcDbDatabaseVersions     | The software release version of the Sybase SQL server in place when this database version level was initially installed. |
| EcDbUpdateProcess      | EcDbDatabaseVersions     | The installation method by which this database version level was installed.  |
| ECSCollGuidePtr        | DsMdCollURLInfo          | The URL address of ECS Collection Guide.   |
| ECSCollGuidePtrComment | DsMdCollURLInfo          | The comment of the ECS Collection Guide page.  |
| ECSDisciplineKeyword   | DsMdDisciplineKeywords   | Refer to technical paper 420-TP-020  |
| ECSParameterKeyword    | DsMdECSParameterKeywords | Refer to technical paper 420-TP-020  |
| ECSTermKeyword         | DsMdDisciplineKeywords   | Refer to technical paper 420-TP-020  |
| ECSTopicKeyword        | DsMdDisciplineKeywords   | Refer to technical paper 420-TP-020  |

| <b>ColumnCode</b>        | <b>Table</b>               | <b>Description</b>   |
|--------------------------|----------------------------|--|
| ecsUserProfile           | DsSiAcquireCmd             | The user profile ID for an acquire request.  |
| ECSVariableKeyword       | DsMdDisciplineKeywords     | Refer to technical paper 420-TP-020  |
| ElectronicEmailAddress   | DsMdEmailAddress           | Refer to technical paper 420-TP-020  |
| EllipsoidName            | DsMdSpatial                | Refer to technical paper 420-TP-020  |
| emailAddressId           | DsMdEmailAddress           | The column used with contactId for the unique identifier of the DsMdEmailAddress table.<br>This is an artificially derived column used because of a 255 length limit for an index within Sybase. ElectronicEmailAddress is 255 character long by itself. |
| EndBlock                 | DsMdOrbitCalculatedSpatial | The value of the PSA SP_AM_MISR_EndBlock.  |
| endDate                  | DsMdProductDbXref          | The date on which this product will no longer be stored in the referenced database.  |
| EndingDateTime           | DsMdGranules               | The attribute within SDSRV that allows both the SingleDateTime (TimeOfDay) and RangeDateTime (RangeEndingDate) to be efficiently indexed and searched.   |
| EndsatPresentFlag        | DsMdTemporal               | Refer to technical paper 420-TP-020  |
| EquatorCrossingDate      | DsMdOrbitCalcSpatialDomain | Refer to technical paper 420-TP-020  |
| EquatorCrossingLongitude | DsMdOrbitCalcSpatialDomain | Refer to technical paper 420-TP-020  |
| EquatorCrossingTime      | DsMdOrbitCalcSpatialDomain | Refer to technical paper 420-TP-020  |
| esdtState                | DsGeESDTConfiguredType     | Refer to technical paper 420-TP-020  |
| eventID                  | DsDeEvent                  | The unique identifier of an event.   |
| eventName                | DsDeEvent                  | The name of an event for which subscriptions may be made.  |

| <b>ColumnCode</b>         | <b>Table</b>  | <b>Description</b>  |
|---------------------------|---|---|
| filePath                  | DsMdFileStorage<br>DsMdAlgorithmPkgFileStorage<br>DsMdDAPFileStorage<br>DsMdBrowseFileStorage<br>DsMdProcessHistFileStorage<br>DsMdSSAPComponentFileStorage<br>DsMdQaGranuleFileStorage                           | The file path name of a granules file stored within STMGT.  |
| fileSize                  | DsMdFileStorage<br>DsMdAlgorithmPkgFileStorage<br>DsMdFileStorageOrphans<br>DsMdDAPFileStorage<br>DsMdBrowseFileStorage<br>DsMdProcessHistFileStorage<br>DsMdSSAPComponentFileStorage<br>DsMdQaGranuleFileStorage | The size in bytes of a granules file stored within STMGT.   |
| ftpHost                   | DsSiAcquireCmd  | The host name for a ftp acquire request.  |
| ftpPassword               | DsSiAcquireCmd  | Password for ftp  |
| ftpPushDest               | DsSiAcquireCmd  | The location of the ftp push area for an acquire request.   |
| ftpUser                   | DsSiAcquireCmd  | The user that the acquire request uses for ftppush.   |
| FutureReviewDate          | DsMdCollReview<br>DsMdGranuleReview   | Refer to technical paper 420-TP-020   |
| GeographicCoordinateUnits | DsMdSpatial   | Refer to technical paper 420-TP-020   |
| geoidFlag                 | DsMdL7ErrorHandling   | The flag to determine whether the granule is L70RWRS1 or L70RWRS2.  |
| glType                    | DsDeDictionaryAttribute<br>DsMdAttributeConversion<br>DsMdAttributeList   | The internal ECS GIParameter Data Classname. Values:<br>GIDateP, GILongP, GITimeP,<br>GIPointP, GICircleP,<br>GIDoubleP, GIStringP,<br>GIGPolygonP, GIRectangleP. |
| GPolygonContainer         | DsMdCIGpolygon<br>DsMdGrGPolygon  | The column name of type Gpolygon with the DsMdGrGPolygon and DsMdCIGPolygon.  |
| granuleId                 | DsMdAlgorithmPkgFileStorage<br>DsMdAncillaryInput<br>DsMdBrowseFileStorage<br>DsMdBrowseGranuleXref<br>DsMdDeletedGranules<br>DsMdCollectionGranuleXref   | The unique ID which identifies the granule.   |

| ColumnCode               | Table   | Description  |
|--------------------------|---|--|
|                          | DsMdDAPFileStorage<br>DsMdFileStorage<br>DsMdFileStorageOrphans<br>DsMdGranuleAnalysisXref<br>DsMdGranuleCampaignXref<br>DsMdGranuleInstrumentXref<br>DsMdGranuleLocality<br>DsMdGranulePlatformXref<br>DsMdGranuleReview<br>DsMdGranuleSensorXref<br>DsMdGrBoundingRectangle<br>DsMdGrBoundingRectangle_R<br>DsMdGrCircle<br>DsMdGrFloatInfoContent<br>DsMdInputGranule<br>DsMdGrIntegerInfoContent<br>DsMdGrPoint<br>DsMdGrGPolygon<br>DsMdGrSensorCharacteristics<br>DsMdGrStorageMedium<br>DsMdGrStringInfoContent<br>DsMdl7ErrorHandling<br>DsMdl7ErrorHandling_gr<br>DsMdMeasuredParameter<br>DsMdOrbitCalcSpatialDomain<br>DsMdOrbitCalulatedSpatial<br>DsMdProcessHistFileStorage<br>DsMdProcessingQA<br>DsMdQaGranuleFileStorage<br>DsMdSSAPComponentFileStorage<br>DsMdQaGranuleXref<br>DsMdUninterpretedData<br>DsMdGrVerticalSpatialDomain<br>DsMdXAR |  |
| granUR                   | DsBtNotifierQueue   | The universal reference used to locate a given granule                           |
| grFloatValue             | DsMdGrFloatInfoContent  | The column containing the granule level AdditionalAttribute value of type float. |
| GridCoordinateSystemName | DsMdPlanarCoordinateSystems   | Refer to technical paper 420-TP-020  |
| grIntValue               | DsMdGrIntegerInfoContent  | The granule level AdditionalAttribute column of type integer.                    |

| <b>ColumnCode</b>    | <b>Table</b>  | <b>Description</b>  |
|----------------------|---|---|
| GroupName            | DsMdUnloadList<br>DsMdUpdateSequence<br>DsMdCommandConversion | This attribute is used to tie a <i>ikind</i> of metadata to physical processing in the DBWrappers. For example <i>iQAGranule</i> relates the DsMdQaGranules table for a function (Physical Delete) and sequence of SQL code (EXEC DsDbProcDeleteQaGranule) to process the data. |
| grStringValue        | DsMdGrStringInfoContent                                       | The granule level AdditionalAttribute column of type varchar.   |
| grTableName          | DsMdParmToTableVector   | The table name of the granule level AdditionalAttribute for a given data type.  |
| HorizontalDatumName  | DsMdSpatial   | Refer to technical paper 420-TP-020   |
| HoursOfService       | DsMdContact   | Refer to technical paper 420-TP-020   |
| identifierObjectType | DsMdIdentifier  | The name or type of the SDSRV database object for which the DsMdIdentifier row exists.  |
| identifierPad        | DsMdIdentifier  | One of seven column (identifierPad1 through identifierPad7) of type char(255) used to pad each in the DsMdIdentifier table to the 2K page size.   |
| identifierType       | DsMdIdentifier  | The data type of the identifier for which the DsMdIdentifier row exists.  |
| Implementation       | DsMdCSDTDescription   | The name of the implemented form of the CSDT (standard formats, industry standards etc.), including lowest level object description.  |
| IndirectReference    | DsMdCSDTDescription   | Refer to technical paper 420-TP-020   |
| inputGranule         | DsMdInputGranule  | The unique identifier of a granule that is input to another granule. This relationship is captured in the DsMdInputGranule table.   |

| <b>ColumnCode</b>             | <b>Table</b>  | <b>Description</b>  |
|-------------------------------|---|---|
| inputGranuleFileCount         | DsMdInputGranule  | The number of times that a particular granules filename (based on InputGranule) is used as input to another granule. This is greater than one when an input granules is a multi-file granule. |
| InputPointer                  | DsMdInputGranule  | Refer to technical paper 420-TP-020   |
| insdate                       | DsBtNotifierQueue   | The date and time that an rpc notifier entry was placed in the queue.   |
| insertDatetime                | DsMdInputGranule  | The Sybase datetime that a specific Input Granule row is inserted. This is used to maintain the insert order of Input Granule rows for a specific granule.                                    |
| insertTime                    | DsMdAlgorithmPackage<br>DsMdAnalysisSource<br>DsMdBrowse<br>DsMdCampaign<br>DsMdCollections<br>DsMdContact<br>DsMdDeletedGranules<br>DsMdDAP<br>DsMdDisciplineKeywords<br>DsMdGranules<br>DsMdInstrument<br>DsMdPlatform<br>DsMdSensor<br>DsMdSSAPComponent<br>DsMdStagingTable<br>DsMdProcessingHistory<br>DsMdQaGranule | The time of original insertion.   |
| InstrumentCharacteristicDesc  | DsMdInstrumentCharacteristic  | Refer to technical paper 420-TP-020   |
| InstrumentCharacteristicName  | DsMdInstrumentCharacteristic  | Refer to technical paper 420-TP-020   |
| InstrumentCharacteristicUnit  | DsMdInstrumentCharacteristic  | Refer to technical paper 420-TP-020   |
| InstrumentCharacteristicValue | DsMdInstrumentCharacteristic  | Refer to technical paper 420-TP-020   |

| <b>ColumnCode</b>      | <b>Table</b>  | <b>Description</b>   |
|------------------------|---|--|
| InstrumentCharDataType | DsMdInstrumentCharacteristic  | Refer to definition of InstrumentCharacteristicDataType in technical paper 420-TP-020                |
| instrumentId           | DsMdCollectionInstrumentXref<br>DsMdGranuleInstrumentXref<br>DsMdInstrumentCharacteristic<br>DsMdOperationMode<br>DsMdSensor  | The unique ID which identifies the instrument.   |
| InstrumentLongName     | DsMdInstrument  | Refer to technical paper 420-TP-020  |
| instrumentName         | DsMdPlatInstrCode   | The InstrumentShortName used to determine platform/instrument specific Orbit Polygon.                |
| InstrumentShortName    | DsMdInstrument  | Refer to technical paper 420-TP-020  |
| InstrumentTechnique    | DsMdInstrument  | Refer to technical paper 420-TP-020  |
| internalFileName       | DsMdFileStorage<br>DsMdAlgorithmPkgFileStorage<br>DsMdDAPFileStorage<br>DsMdBrowseFileStorage<br>DsMdProcessHistFileStorage<br>DsMdSSAPComponentFileStorage<br>DsMdStagingTable<br>DsMdQaGranuleFileStorage | The ECS generated internal file for granule files within the STMGT archive.                          |
| lastIdentifier         | DsMdIdentifier  | The next available unique identifier available of type ID for a specific IdentifierObjectType.       |
| lastIntIdentifier      | DsMdIdentifier  | The next available unique identifier available of type integer for a specific IdentifierObjectType.  |
| lastSmallIntIdentifier | DsMdIdentifier  | The next available unique identifier available of type smallint for a specific IdentifierObjectType. |

| <b>ColumnCode</b>            | <b>Table</b>   | <b>Description</b>  |
|------------------------------|--|---|
| lastUpdate                   | DsMdAnalysisSource<br>DsMdAncillaryInput<br>DsMdAlgorithmPackage<br>DsMdBrowse<br>DsMdCampaign<br>DsMdCollections<br>DsMdContact<br>DsMdDAP<br>DsMdDisciplineKeywords<br>DsMdGranules<br>DsMdInstrument<br>DsMdPlatform<br>DsMdProcessingHistory<br>DsMdSensor<br>DsMdSSAPComponent<br>DsMdQaGranule<br>DsSiAcquireCmd | The time of the last update.  |
| lat                          |  | The Spatial Query Server generated column for latitude when a plural spatial datatype is created. |
| lat11                        | DsMdL7ErrorHandling  | The latitude of the first point for a landsat 7 polygon.  |
| lat12                        | DsMdL7ErrorHandling  | The latitude of the second point for a landsat 7 polygon.   |
| lat13                        | DsMdL7ErrorHandling  | The latitude of the third point for a landsat 7 polygon.  |
| lat14                        | DsMdL7ErrorHandling  | The latitude of the fourth point for a landsat 7 polygon.   |
| Latitude                     | DsSiAcqPolygon   | Latitude value of a point in a landsat floating scene acquire request.                            |
| LatitudeResolution           | DsMdSpatial  | Refer to technical paper 420-TP-020   |
| length                       | DsDeDictionaryAttribute  | The maximum character length (digits) of a attribute. Used in attribute valids processing.        |
| listName                     | DsMdUnloadList<br>DsMdUpdateSequence<br>DsMdAttributeList<br>DsMdInsertSequence  | The name of a specific GIParameter list format within the SDSRV. Used for internal processing.    |
| LocalCoordinateSystemDesc    | DsMdSpatial  | Refer to technical paper 420-TP-020   |
| LocalGeoreferenceInformation | DsMdSpatial  | Refer to technical paper 420-TP-020   |

| <b>ColumnCode</b>                  | <b>Table</b>                | <b>Description</b>  |
|------------------------------------|-----------------------------|---|
| LocalGranuleID                     | DsMdGranules                | Unique identifier for locally produced granule that ECS ingests and is required to capture. |
| LocalityDescription                | DsMdLocality                | Refer to technical paper 420-TP-020   |
| LocalityType                       | DsMdLocality                | Refer to technical paper 420-TP-020   |
| LocalityValue                      | DsMdGranuleLocality         | Refer to technical paper 420-TP-020   |
| LocalPlanarCoordinateSystemDes     | DsMdPlanarCoordinateSystems | Refer to defintion of LocalPlanarCoordinateSystemDescription in technical paper 420-TP-020  |
| LocalPlanarGeoreferenceInformation | DsMdPlanarCoordinateSystems | Refer to definition of LocalPlanarGeoreferenceInformation in technical paper 420-TP-020)    |
| LocalVersionID                     | DsMdGranules                | Local version identifier for PGE defined granule versions.                                  |
| long                               |                             | A Spatial Query Server generated column. Created when a plural spatial datatype is created. |
| long11                             | DsMdL7ErrorHandling         | The longitude of the first point for a landsat 7 polygon.                                   |
| long12                             | DsMdL7ErrorHandling         | The longitude of the second point for a landsat 7 polygon.                                  |
| long13                             | DsMdL7ErrorHandling         | The longitude of the third point for a landsat 7 polygon.                                   |
| long14                             | DsMdL7ErrorHandling         | The longitude of the fourth point for a landsat 7 polygon.                                  |
| Longitude                          | DsSiAcqPolygon              | Longitude value of a point in a Lansat floating scene acquire request.                      |
| LongitudeResolution                | DsMdSpatial                 | Refer to technical paper 420-TP-020   |
| LongName                           | DsMdCollections             | Refer to technical paper 420-TP-020   |
| lookupDatetime                     | DsMdSDSRVLookup             | The lookup value of type datetime in the DsMdSDSRVLookup table.                             |
| lookupFloat                        | DsMdSDSRVLookup             | The lookup value of type float in the DsMdSDSRVLookup table.                                |
| lookupInt                          | DsMdSDSRVLookup             | The lookup value of integer datetime in the DsMdSDSRVLookup table.                          |

| <b>ColumnCode</b>          | <b>Table</b>                                     | <b>Description</b>  |
|----------------------------|--|---|
| lookupString               | DsMdSDSRVLookup                                  | The lookup value of type varchar in the DsMdSDSRVLookup table.  |
| lookupType                 | DsMdSDSRVLookup                                  | The name of the lookup operation that the specific DsMdSDSRVLookup table row is used for. Example: lookupType - subType when looking up a valid ESDT subtype value. |
| lookupValue                | DsMdSDSRVLookup                                  | The value used to lookup another value in the DsMdSDSRVLookup table.  |
| MaintenanceUpdateFrequency | DsMdCollections                                  | Refer to technical paper 420-TP-020   |
| MapProjectionName          | DsMdPlanarCoordinateSystems                      | Refer to technical paper 420-TP-020   |
| MapProjectionPointer       | DsMdPlanarCoordinateSystems                      | Refer to technical paper 420-TP-020   |
| maxOccurrences             | DsDeDictionaryAttribute                          | Reserved for future use.  |
| MeasurementResolution      | DsMdAdditionalAttributes                         | Refer to definition of ParameterMeasurementresolution in technical paper 420-TP-020   |
| MisInformationPtr          | DsMdCollURLInfo                                  | The URL address of the Miscellaneous Information page.  |
| MisInformationPtrComment   | DsMdCollURLInfo                                  | The comment of the Miscellaneous Information page.  |
| MultipleDateName           | DsMdMultipleDateTimePeriod<br>DsMdSingleDateTime | Refer to technical paper 420-TP-020   |
| notify                     | DsSiAcquireCmd                                   | Refer to technical paper 420-TP-020   |
| numAttribs                 | DsDeDictionaryContent                            | The number of attributes within a specific GIParameter group name in the DsDeDictionaryContent table.   |
| NumberOfSensors            | DsMdInstrument                                   | Refer to technical paper 420-TP-020   |
| numLevels                  | DsDeDictionaryContent                            | The number of levels within a specific DsDeDictionaryContent qualifiedGroupName.  |
| numMultiples               | DsDeDictionaryContent                            | This column is not implemented within the SDSRV implementation.   |

| <b>ColumnCode</b>            | <b>Table</b>                                     | <b>Description</b>  |
|------------------------------|--|---|
| OperationalQualityFlag       | DsMdMeasuredParameter                            | Refer to technical paper 420-TP-020   |
| OperationalQualityFlagExplan | DsMdMeasuredParameter                            | Refer to definition of OperationalQualityFlagExplanation in technical paper 420-TP-020  |
| OperationMode                | DsMdOperationMode<br>DsMdGranuleInstrumentXref   | Refer to technical paper 420-TP-020   |
| Operator                     | DsMdCommandConversion<br>DsMdOperatorConversion  | The operation to be performed on ECS Metadata.  |
| operator                     | DsDeDictionaryAttribute                          | The type of attribute validation operation to be applied when checking input attribute checking. Values are NONE, Range, Match, and Expression. |
| optionalIndicator            | DsDeDictionaryAttribute<br>DsDeDictionaryContent | Used to indicate whether a specific qualifiedGroupName or qualifiedAttrName is optional or not. Optional = 0, required = 1.                     |
| Orbit                        | DsMdOrbitPolygons                                | The specific orbit number of a Orbit Polygon.   |
| OrbitModelName               | DsMdOrbitCalcSpatialDomain                       | Refer to technical paper 420-TP-020   |
| OrbitNumber                  | DsMdOrbitCalcSpatialDomain                       | Refer to technical paper 420-TP-020   |
|                              |  | Used with the granuleId in unique identifier in the association table between Science Granules and Orbit Parameter Granules.                    |
| OrdinateResolution           | DsMdPlanarCoordinateSystems                      | Refer to technical paper 420-TP-020   |
| orderID                      | DsSiAcquireCmd                                   | The order ID for an acquire request.  |
| orderTrackingReqID           | DsSiAcquireCmd                                   | The order tracking request ID for an acquire request.   |
| organizationId               | DsMdPersonOrganizationXref                       | The unique ID which identifies the organization.  |
| parameterKeyword             | DsDeECSKeywordValids                             | Refer to technical paper 420-TP-020   |
| parameterKeywordID           | DsMdECSPparameterKeywords                        | The unique ID which identifies the parameter keyword.   |
| ParameterName                | DsMdMeasuredParameter                            | The name of the parameter.  |
| ParameterRange               | DsMdAdditionalAttributes                         | This attribute provides maximum and minimum value of parameter over whole collection.   |

| <b>ColumnCode</b>            | <b>Table</b>                                    | <b>Description</b>  |
|------------------------------|---|---|
| ParameterRangeBegin          | DsMdAdditionalAttributes                        | This attribute provides the minimum value of parameter over whole collection        |
| ParameterRangeEnd            | DsMdAdditionalAttributes                        | This attribute provides the maximum value of parameter over whole collection.       |
| parameters                   | DsSiParameters                                  |   |
| ParameterUnitsOfMeasure      | DsMdAdditionalAttributes                        | Refer to definition of ParameterUnitsofMeasurement in technical paper 420-TP-020    |
| ParameterValueAccuracy       | DsMdAdditionalAttributes                        | Refer to technical paper 420-TP-020   |
| PathNo                       | DsMdOrbitCalculatedSpatial<br>DsMdOrbitPolygons | Refer to technical paper 420-TP-020   |
| Period1stDate                | DsMdRegularPeriodic                             | Refer to technical paper 420-TP-020   |
| Period1stTime                | DsMdRegularPeriodic                             | Refer to technical paper 420-TP-020   |
| PeriodCycleDurationUnit      | DsMdRegularPeriodic                             | Refer to technical paper 420-TP-020   |
| PeriodCycleDurationValue     | DsMdRegularPeriodic                             | Refer to technical paper 420-TP-020   |
| PeriodDurationUnit           | DsMdRegularPeriodic                             | Refer to technical paper 420-TP-020   |
| PeriodDurationValue          | DsMdRegularPeriodic                             | Refer to technical paper 420-TP-020   |
| PeriodName                   | DsMdRegularPeriodic                             | Refer to technical paper 420-TP-020   |
| personId                     | DsMdPersonOrganizationXref                      | The unique ID which identifies the person.  |
| PGEDateLastModified          | DsMdAlgorithmPackage                            | Refer to technical paper 420-TP-020   |
| PGEFunction                  | DsMdAlgorithmPackage                            | Refer to technical paper 420-TP-020   |
| PGEIdentifier                | DsMdAlgorithmPackage                            | Refer to technical paper 420-TP-020   |
| PGEName                      | DsMdAlgorithmPackage                            | Refer to technical paper 420-TP-020   |
| PGEVersion                   | DsMdAlgorithmPackage<br>DsMdGranules            | Refer to technical paper 420-TP-020   |
| PlanarCoordinateEncodingMeth | DsMdPlanarCoordinateSystems                     | Refer to definition of PlanarCoordinateEncodingMethod in technical paper 420-TP-020 |

| <b>ColumnCode</b>              | <b>Table</b>  | <b>Description</b>   |
|--------------------------------|---|--|
| planarCoordinateSystemsID      | DsMdPlanarCoordinateSystems   | An artificially derived column used with the collectionId to uniquely identify an row in the DsMdPlanarCoordinateSystems table.    |
| PlanarDistanceUnits            | DsMdPlanarCoordinateSystems   | Refer to technical paper 420-TP-020  |
| PlatformCharacteristicDataType | DsMdPlatformCharacteristic  | Refer to technical paper 420-TP-020  |
| PlatformCharacteristicDesc     | DsMdPlatformCharacteristic  | Refer to technical paper 420-TP-020  |
| PlatformCharacteristicName     | DsMdPlatformCharacteristic  | Refer to technical paper 420-TP-020  |
| PlatformCharacteristicUnit     | DsMdPlatformCharacteristic  | Refer to technical paper 420-TP-020  |
| PlatformCharacteristicValue    | DsMdPlatformCharacteristic  | Refer to technical paper 420-TP-020  |
| platformId                     | DsMdGranulePlatformXref<br>DsMdInstrument<br>DsMdPlatformCharacteristic<br>DsMdCollectionPlatformXref | The unique ID which identifies the platform.   |
| platformInstrumentCode         | DsMdPlatInstrCode   | An artificially derived unique identifier in the DsMdPlatInstrCode table.  |
| PlatformLongName               | DsMdPlatform  | Refer to technical paper 420-TP-020  |
| PlatformShortName              | DsMdPlatform<br>DsMdPlatInstrCode   | Refer to technical paper 420-TP-020  |
| PlatformType                   | DsMdPlatform  | Refer to technical paper 420-TP-020  |
| platInstCode                   | DsMdOrbitCalculatedSpatial<br>DsMdOrbitPolygons   | The ID of an entry in the DsMdPlatInstrCode table applicable to an orbit polygon.  |
| PointLocation                  | DsMdCIPoint<br>DsMdGrPoint  | An artificially derived column used with the equator Crossing Longitude to uniquely identify a row in the DsMdOrbitPolygons table. |
| PostalCode                     | DsMdContactAddress  | Refer to technical paper 420-TP-020  |
| PrecisionOfSeconds             | DsMdTemporal  | Refer to technical paper 420-TP-020  |
| previousGranuleId              | DsMdGranuleVersions   | The granuleId of the previous granule version used to maintain the relationship between granule versions.                          |

| <b>ColumnCode</b>          | <b>Table</b>  | <b>Description</b>   |
|----------------------------|---|--|
| previousVersion            | DsMdGranuleVersions   | The version of the previous granuleId associated with a currentGranuleId and version.                |
| primaryCollectionFlag      | DsMdCollections   | A flag indicating whether this is a single type collection.  |
| primaryCollectionId        | DsMdGranules<br>DsMdGrBoundingRectangle<br>DsMdGrCircle<br>DsMdGrGPolygon | The collectionId of primary collection for a group of granules.                                      |
| PrimaryCSDT                | DsMdCSDTDescription   | Refer to technical paper 420-TP-020  |
| priority                   | DsSiRequest<br>DsSiRequestDetails   | The relative processing priority associated with a request.  |
| ProcessingCenter           | DsMdCollections   | Refer to technical paper 420-TP-020  |
| processingHistoryId        | DsMdGranules  | The column used to associate a specific Processing History granules with a specific Science Granule. |
| processingHistoryTypeCode  | DsMdGranules  | Determines whether a granule has an associated Processing History granule.                           |
| ProcessingLevelDescription | DsMdCollections   | Refer to technical paper 420-TP-020  |
| ProcessingLevelID          | DsMdCollections   | Refer to technical paper 420-TP-020  |
| ProcessingQAAttribute      | DsMdProcessingQA  | Refer to technical paper 420-TP-020  |
| ProcessingQADescription    | DsMdProcessingQA  | Refer to technical paper 420-TP-020  |
| ProductionDateTime         | DsMdGranules  | Refer to technical paper 420-TP-020  |
| ProductionHistoryPointer   | DsMdProcessingHistory   | Refer to technical paper 420-TP-020  |
| productName                | DsMsAttributeXref<br>DsMdProductDbXref                                    | The name of an ECS product.  |
| psalIndicator              | DsDeDictionaryAttribute   | Flag indicating if attribute is a Product Specific Attribute.  |
| qald                       | DsMdQaGranuleXref   | A unique ID for QA.  |
| QAGranulePointer           | DsMdQaGranule   | Refer to technical paper 420-TP-020  |
| QAPercentCloudCover        | DsMdMeasuredParameter   | Refer to technical paper 420-TP-020  |
| QAPercentInterpolatedData  | DsMdMeasuredParameter   | Refer to technical paper 420-TP-020  |

| <b>ColumnCode</b>         | <b>Table</b>   | <b>Description</b>   |
|---------------------------|--|--|
| QAPercentMissingData      | DsMdMeasuredParameter                                  | Refer to technical paper 420-TP-020  |
| QAPercentOutOfBoundsData  | DsMdMeasuredParameter                                  | Refer to technical paper 420-TP-020  |
| qualifiedAttrName         | DsDeDictionaryAttribute                                | The fully qualified ECS attribute name, including all of the GIParameter list components.  |
| qualifiedGroupName        | DsDeDictionaryContent                                  | The fully qualified ECS metadata group name, including all of the GIParameter list components.   |
| QualityTextCommentPointer | DsMdQualityTextComment                                 | Refer to technical paper 420-TP-020  |
| RadiusUnits               | DsMdCICircle<br>DsMdGrCircle                           | Refer to technical paper 420-TP-020  |
| RangeBeginningDate        | DsMdGranules<br>DsMdRangeDateTime                      | Refer to technical paper 420-TP-020  |
| RangeBeginningTime        | DsMdGranules<br>DsMdRangeDateTime                      | Refer to technical paper 420-TP-020  |
| RangeEndingDate           | DsMdGranules<br>DsMdRangeDateTime                      | Refer to technical paper 420-TP-020  |
| RangeEndingTime           | DsMdGranules<br>DsMdRangeDateTime                      | Refer to technical paper 420-TP-020  |
| ReprocessingActual        | DsMdGranules   | Refer to technical paper 420-TP-020  |
| ReprocessingPlanned       | DsMdGranules   | Refer to technical paper 420-TP-020  |
| reqDomainID               | DsSiReqDomain  | Refer to technical paper 420-TP-020  |
| requestID                 | DsSiAcquireCmd<br>DsSiParameters<br>DsSiURs            | The unique identifier for a persisted SDSRV request.   |
| RevisionDate              | DsMdCollections  | Represents the date and possibly the time that this directory entry was created or the latest date and time of its modification or update. |
| rpcid                     | DsBtNotifierQueue<br>DsSiRequest<br>DsSiRequestDetails | A unique identifier of a remote procedure call instance.   |

| <b>ColumnCode</b>            | <b>Table</b>  | <b>Description</b>  |
|------------------------------|---|---|
| ruleText                     | DsDeDictionaryRule  | The actual attribute valid value used in conjunction with a given operator to validate the value of an input attribute value.<br>Example: DayNightFlag - Match(D), where D is the ruleText. |
| sceneGranuleId               | DsMdL7ErrorHandling_gr  | The granuleId of a L70RWRS granule.   |
| ScienceQualityFlag           | DsMdMeasuredParameter   | Refer to technical paper 420-TP-020   |
| ScienceQualityFlagExplan     | DsMdMeasuredParameter   | Refer to definition of ScienceQualityFlagExplanation in technical paper 420-TP-020  |
| ScienceReviewDate            | DsMdCollReview<br>DsMdGranuleReview   | Refer to technical paper 420-TP-020   |
| ScienceReviewStatus          | DsMdCollReview<br>DsMdGranuleReview   | Refer to technical paper 420-TP-020   |
| SemiMajorAxis                | DsMdSpatial   | Refer to technical paper 420-TP-020   |
| SensorCharacteristicDataType | DsMdSensorCharacteristic  | Refer to technical paper 420-TP-020   |
| SensorCharacteristicDesc     | DsMdSensorCharacteristic  | Refer to technical paper 420-TP-020   |
| SensorCharacteristicName     | DsMdGrSensorCharacteristics<br>DsMdSensorCharacteristic                       | Refer to technical paper 420-TP-020   |
| SensorCharacteristicUnit     | DsMdSensorCharacteristic  | Refer to technical paper 420-TP-020   |
| SensorCharacteristicValue    | DsMdGrSensorCharacteristics<br>DsMdSensorCharacteristic                       | Refer to technical paper 420-TP-020   |
| sensorId                     | DsMdCollectionSensorXref<br>DsMdGranuleSensorXref<br>DsMdSensorCharacteristic | The unique ID which identifies the sensor.  |
| SensorLongName               | DsMdSensor  | Refer to technical paper 420-TP-020   |
| SensorShortName              | DsMdSensor  | Refer to technical paper 420-TP-020   |
| SensorTechnique              | DsMdSensor  | Refer to technical paper 420-TP-020   |
| seq                          | DsSiURs<br>DsSiParameters   | The sequence Number of a particular request   |
| seqNum                       | DsDeDictionaryAttribute   | The sequence number of the dictionary attribute.  |

| <b>ColumnCode</b>    | <b>Table</b>   | <b>Description</b>  |
|----------------------|--|---|
| seqNumber            | DsSiAcquireCmdFileInfo<br>DsSiAcqPolygon<br>DsMdUninterpretedData  | The sequence that the file in the acquire request.                              |
| SequenceNo           | DsMdOrbitPolygons  | The sequence of the polygon for a MISR orbit granule.                           |
| SequenceNo           | DsMdBaseDependent<br>DsMdCommandConversion<br>DsMdInsertSequence<br>DsMdKeyDependency<br>DsMdUnloadList<br>DsMdUpdateSequence                            | The sequence of this action relative to other actions.                          |
| sequenceNo           | DsDeDictionaryRule   | The sequence of this attribute rule relative to other rules for that attribute. |
| sequenceNumber       | DsMdAttributeList  | The sequence that an attribute appears in an attribute list.                    |
| sequenceNumber       | DsMdAncillaryInput   | Used to ensure unique identity of row in the case of duplicate entries.         |
| sequenceNumber       | DsMdGrStringInfoContent  | Enforces unique identity of row in case of multi-valued PSAs                    |
| seqType              | DsDeDictionaryAttribute  | The type of sequence.   |
| servicename          | DsBtNotifierQueue  | The service name of an request.   |
| sessionID            | DsSiRequest  | The session identifier of a particular persisted SDSRV request.                 |
| ShortName            | DsMdCollections<br>DsDeEvent<br>DsMdDeletedGranules<br>DsMdGranules<br>DsMdL7ErrorHandling_gr<br>DsMdStagingTable<br>DsQAMUTESDTSite<br>DsMdTemporalSize | Refer to technical paper 420-TP-020   |
| site                 | DsSiAcquireCmd   | The site of the acquire request.  |
| Site                 | DsQAMUTESDTSite  | The site of SC team that does the QA update.                                    |
| SizeMBECSDataGranule | DsMdGranules   | Refer to technical paper 420-TP-020   |
| skips                | DsDeDictionaryContent  | This column is reserved for future functionality.                               |
| SpatialCoverageType  | DsMdSpatial  | Refer to technical paper 420-TP-020   |

| <b>ColumnCode</b>        | <b>Table</b>   | <b>Description</b>   |
|--------------------------|--|--|
| SpatialKeyword           | DsMdSpatialKeyword   | Refer to technical paper 420-TP-020  |
| SpatialSearchType        | DsGeESDTConfiguredType   | Refer to technical paper 420-TP-020  |
| SSAPAlgorithmPackageName | DsMdSSAPComponent  | Refer to technical paper 420-TP-020  |
| SSAPAlgPackageVersion    | DsMdSSAPComponentAPVersion   | Refer to technical paper 420-TP-020  |
| ssapId                   | DsMdAPSAPComponentXref<br>DsMdSSAPComponentAPVersion   | The unique ID which identifies a Science Algorithm Package Component.        |
| SSAPInsertDate           | DsMdSSAPComponent  | Date of insertion to the Data Server.  |
| StartBlock               | DsMdOrbitCaculatedSpatial  | The value of the PSA, SP_AM_MISR_StartBlock.                                 |
| startDate                | DsMdProductDbXref  | This column is reserved for future functionality.                            |
| StartOrbitNumber         | DsMdOrbitCalcSpatialDomain   | Refer to technical paper 420-TP-020  |
| state                    | DsSiRequest<br>DsSiRequestDetails  | Define the state of the request.   |
| StateProvince            | DsMdContactAddress   | Refer to technical paper 420-TP-020  |
| Status                   | DsBtNotifierQueue<br>DsMdDeletedGranules   | The status of a particular Notifier Queue entry.                             |
| StopOrbitNumber          | DsMdOrbitCalcSpatialDomain   | Refer to technical paper 420-TP-020  |
| StorageMedium            | DsMdCollStorageMedium<br>DsMdGrStorageMedium   | Refer to technical paper 420-TP-020  |
| StoredProcName           | DsMdInsertSequence   | The name of the insert GIParameter listname in the DsMdInsertSequence table. |
| StreetAddress            | DsMdContactAddress   | Refer to technical paper 420-TP-020  |
| subType                  | DsMdBaseDependent<br>DsMdBrowse<br>DsMdCollections<br><br>DsMdProcessingHistory<br>DsMdQaGranule<br>DsMdUnloadList | The internally created column used to hold the ShortName.                    |
| SuggestedUsage1          | DsMdCollections  | Refer to definition of SuggestedUsage in technical paper 420-TP-020          |

| <b>ColumnCode</b>     | <b>Table</b>                                | <b>Description</b>   |
|-----------------------|---|--|
| SuggestedUsage2       | DsMdCollections                             | Refer to definition of SuggestedUsage in technical paper 420-TP-020  |
| SWDateLastModified    | DsMdAlgorithmPackage                        | Refer to technical paper 420-TP-020  |
| SWVersion             | DsMdAlgorithmPackage                        | Refer to technical paper 420-TP-020  |
| table1                | DsMdJoins                                   | A table that is included in a database join.   |
| table2                | DsMdJoins                                   | A table that is included in a database join.   |
| TableKeyName          | DsMdKeyDependency                           | The name of the primary key attribute of an independent table.   |
| TableName             | DsMdKeyDependency<br>DsMsAttributeTableXref | The name of the independent table.   |
| TelephoneNumber       | DsMdTelephoneNumberNumbers                  | Refer to technical paper 420-TP-020  |
| TelephoneNumberType   | DsMdTelephoneNumberNumbers                  | Refer to technical paper 420-TP-020  |
| TemporalKeyword       | DsMdTemporalKeyword                         | Refer to technical paper 420-TP-020  |
| TemporalRangeType     | DsMdTemporal                                | Refer to technical paper 420-TP-020  |
| temporalRestriction   | DsMdCollections                             | The temporal restriction for accessing the ESDT.   |
| TemporalSizeInSeconds | DsMdTemporalSize                            | The maximum date range for a given ESDT  |
| termKeyword           | DsDeECSKeywordValids                        | The column used to check the ECSKeyword stack hierarchy that corresponds to the ECSTermKeyword column.               |
| TimeOfDay             | DsMdGranules<br>DsMdSingleDateTime          | Refer to technical paper 420-TP-020  |
| TimeType              | DsMdTemporal                                | Refer to technical paper 420-TP-020  |
| topicKeyword          | DsDeECSKeywordValids                        | The column used to validate the ECSKeyword stack hierarchy corresponding to the ECSKeywordTopic attribute.           |
| transactionTime       | DsMdDeletedGranules                         | Defines a transaction. Each request is a transaction which can involve multiple granules to be marked deleted/DFAed. |
| triggerTime           | DsBtNotifierQueue                           | The time of a request gets triggered.  |

| <b>ColumnCode</b>          | <b>Table</b>  | <b>Description</b>   |
|----------------------------|---|--|
| type                       | DsMdCollections<br>DsDeDictionaryAttribute  | The encoded value used to depict the basetype of a particular ESDT. Example SC corresponds to Science.           |
| UserCommentDocumentPointer | DsMdUserCommentDocument   | Refer to technical paper 420-TP-020  |
| userDataFile               | DsMdFileStorage<br>DsMdAlgorithmPkgFileStorage<br>DsMdDAPFileStorage<br>DsMdBrowseFileStorage<br>DsMdProcessHistFileStorage<br>DsMdSSAPComponentFileStorage<br>DsMdQaGranuleFileStorage | The name of a granules file in the STMGT archive.  |
| userFileName               | DsSiAcquireCmdFileInfo  | The data file name for an acquire request.   |
| UserID                     | DsSiRequest   | The unique identifier of a user.   |
| userString                 | DsSiAcquireCmd  | The user string for an acquire request.  |
| ur                         | DsSiURs   | The domain number for a specific persisted request.  |
| ValidationDocumentPointer  | DsMdValidationDocument  | Refer to technical paper 420-TP-020  |
| ValueAccuracyExplanation   | DsMdAdditionalAttributes  | Refer to definition of ParameterValueAccuracy in technical paper 420-TP-020                                      |
| variableKeyword            | DsDeECSKeywordValids  | The column used to validate the ECSKeyword stack hierarchy that corresponds to the ECSVariableKeyword attribute. |
| VersionDescription         | DsMdCollections   | Refer to technical paper 420-TP-020  |
| VersionID                  | DsGeESTDConFiguredType<br>DsMdCollections<br>DsMdDeletedGranules<br>DsDeEvent<br>DsMdGranules<br>DsMdStagingTable<br>DsMdTemporalSize   | Refer to technical paper 420-TP-020  |
| VerticalSpatialDomainType  | DsMdCollVerticalDomain<br>DsMdGrVerticalSpatialDomain   | Refer to technical paper 420-TP-020  |
| VerticalSpatialDomainValue | DsMdCollVerticalSpatialDomain<br>DsMdGrVerticalSpatialDomain  | Refer to technical paper 420-TP-020  |
| XARId                      | DsMdXAR   | The numeric identifier for a given ASTER XAR. Also known as DAR ID.  |

| ColumnCode     | Table                                  | Description   |
|----------------|--|---|
| XARType        | DsMdXAR                                | The text describing the type of a given XARId.            |
| XrefFlag       | DsMdKeyDependency                      | A flag indicating if the dependency is a cross-reference. |
| ZoneIdentifier | DsMdCollZoneIdentifier<br>DsMdGranules | Refer to technical paper 420-TP-020                       |

### 3.1.4 Column Domains

The user-defined datatypes defined in the SDSRV database are given here as well as an indication of the columns to which they apply.

#### Domain: DsTMDModDate

##### Reference List

| Table Code                   | Column Name            | Column Code            |
|------------------------------|------------------------|------------------------|
| DsBtNotifierSequence         | Insdate<br>triggerTime | Insdate<br>triggerTime |
| DsMdFileStorage              | creationDate           | creationDate           |
| DsMdAlgorithmPkgFileStorage  | creationDate           | creationDate           |
| DsMdFileStorageOrphans       | creationDate           | creationDate           |
| DsMdBrowseFileStorage        | creationDate           | creationDate           |
| DsMdSSAPComponentFileStorage | creationDate           | creationDate           |
| DsMdDAPFileStorage           | creationDate           | creationDate           |
| DsMdQaGranuleFileStorage     | creationDate           | creationDate           |
| DsMdProcessHistFileStorage   | creationDate           | creationDate           |
| DsMdAlgorithmPackage         | lastUpdate             | lastUpdate             |
|                              |                        |                        |
| DsMdBrowse                   | lastUpdate             | lastUpdate             |
| DsMdCollections              | lastUpdate             | lastUpdate             |
| DsMdContact                  | lastUpdate             | lastUpdate             |
| DsMdDAP                      | lastUpdate             | lastUpdate             |
| DsMdAncillaryInput           | lastUpdate             | lastUpdate             |
| DsMdGranules                 | lastUpdate             | lastUpdate             |
|                              |                        |                        |
| DsMdProcessingHistory        | lastUpdate             | lastUpdate             |
| DsMdQaGranule                | lastUpdate             | lastUpdate             |
| DsMdSSAPComponent            | lastUpdate             | lastUpdate             |

**Domain: DsTMDTime****Reference List**

| <b>Table Code</b>          | <b>Column Name</b>  | <b>Column Code</b>  |
|----------------------------|---------------------|---------------------|
| DsMdOrbitCalcSpatialDomain | EquatorCrossingTime | EquatorCrossingTime |
| DsMdRegularPeriodic        | Period1stTime       | Period1stTime       |
| DsMdGranules               | RangeBeginningTime  | RangeBeginningTime  |
| DsMdRangeDateTime          | RangeBeginningTime  | RangeBeginningTime  |
| DsMdRangeDateTime          | RangeEndingTime     | RangeEndingTime     |
| DsMdGranules               | RangeEndingTime     | RangeEndingTime     |
| DsMdGranules               | TimeOfDay           | TimeOfDay           |
| DsMdSingleDateTime         | TimeOfDay           | TimeOfDay           |

**Domain: ID****Reference List**

| <b>Table Code</b>              | <b>Column Name</b> | <b>Column Code</b> |
|--------------------------------|--------------------|--------------------|
| DsMdGranuleAnalysisXref        | analysisSourceld   | analysisSourceld   |
| DsMdCollectionAnalysisXref     | analysisSourceld   | analysisSourceld   |
| DsMdAPSAPComponentXref         | apld               | apld               |
| DsMdCollectionAPXref           | apld               | apld               |
| DsDeDictionaryRule             | attributeID        | attributeID        |
| DsDeDictionaryAttribute        | attributeID        | attributeID        |
| DsMdBrowseGranuleXref          | browseld           | browseld           |
| DsMdCollBrowseXref             | browseld           | browseld           |
| DsMdCollectionCampaignXref     | campaignId         | campaignId         |
| DsMdGranuleCampaignXref        | campaignId         | campaignId         |
| DsMdCICircle                   | collectionId       | collectionId       |
| DsMdCollectionSensorXref       | collectionId       | collectionId       |
| DsMdAltitudeResolution         | collectionId       | collectionId       |
| DsMdCollectionGranuleXref      | collectionId       | collectionId       |
| DsMdCollDisciplineKeywordXref  | collectionId       | collectionId       |
| DsMdCollectionInstrumentXref   | collectionId       | collectionId       |
| DsMdCIBoundingRectangle        | collectionId       | collectionId       |
| DsMdQualityTextComment         | collectionId       | collectionId       |
| DsMdCIGPolygGPolygonContainer  | collectionId       | collectionId       |
| DsMdCollIntegerInfoContent     | collectionId       | collectionId       |
| DsMdCIPoint                    | collectionId       | collectionId       |
| DsMdCollStorageMedium          | collectionId       | collectionId       |
| DsMdCollectionPlatformXref     | collectionId       | collectionId       |
| DsMdSpatial                    | collectionId       | collectionId       |
| DsMdCollVerticalSpatialDomain  | collectionId       | collectionId       |
| DsMdCollectionAddnlAttribsXref | collectionId       | collectionId       |

| <b>Table Code</b>           | <b>Column Name</b> | <b>Column Code</b> |
|-----------------------------|--------------------|--------------------|
| DsMdCollectionAnalysisXref  | collectionId       | collectionId       |
| DsMdCIGPolygon              | collectionId       | collectionId       |
| DsMdCollectionAPXref        | collectionId       | collectionId       |
| DsMdCollBrowseXref          | collectionId       | collectionId       |
| DsMdCollectionAssociation   | collectionId       | collectionId       |
| DsMdDepthResolution         | collectionId       | collectionId       |
| DsMdSingleDateTime          | collectionId       | collectionId       |
| DsMdCollectionContactXref   | collectionId       | collectionId       |
| DsMdSpatialKeyword          | collectionId       | collectionId       |
| DsMdMultipleDateTimePeriod  | collectionId       | collectionId       |
| DsMdMultipleTypeCollection  | collectionId       | collectionId       |
| DsMdRegularPeriodic         | collectionId       | collectionId       |
| DsMdCSDTDescription         | collectionId       | collectionId       |
| DsMdTemporalKeyword         | collectionId       | collectionId       |
| DsMdCollStringInfoContent   | collectionId       | collectionId       |
| DsMdCollURLInfo             | collectionId       | collectionId       |
| DsMdValidationDocument      | collectionId       | collectionId       |
| DsMdCollZoneIdentifier      | collectionId       | collectionId       |
| DsMdLocality                | collectionId       | collectionId       |
| DsMdCollFloatInfoContent    | collectionId       | collectionId       |
| DsMdPlanarCoordinateSystems | collectionId       | collectionId       |
| DsMdCollReview              | collectionId       | collectionId       |
| DsMdTemporal                | collectionId       | collectionId       |
| DsMdRangeDateTime           | collectionId       | collectionId       |
| DsMdCollectionCampaignXref  | collectionId       | collectionId       |
| DsMdUserCommentDocument     | collectionId       | collectionId       |
| DsMdApContactXref           | contactId          | contactId          |
| DsMdEmailAddress            | contactId          | contactId          |
| DsMdContactPersons          | contactId          | contactId          |
| DsMdContactOrganizations    | contactId          | contactId          |
| DsMdTelephoneNumberNumbers  | contactId          | contactId          |
| DsMdCollectionContactXref   | contactId          | contactId          |
| DsMdContactAddress          | contactId          | contactId          |
| DsDeDictionaryContent       | contentID          | contentID          |
| DsDeDictionaryAttribute     | contentID          | contentID          |
| DsMdGranuleVersions         | currentGranuleId   | currentGranuleId   |
| DsMdPGEGroup                | dapDBId            | dapDBId            |
| DsMdApContactXref           | dapId              | dapId              |
| DsMdDAP                     | dbID               | dbID               |
| DsMdProcessingHistory       | dbID               | dbID               |
| DsMdDisciplineKeywords      | dbID               | dbID               |

| <b>Table Code</b>              | <b>Column Name</b>  | <b>Column Code</b>  |
|--------------------------------|---------------------|---------------------|
| DsMdAnalysisSource             | dbID                | dbID                |
| DsMdContact                    | dbID                | dbID                |
| DsMdCollections                | dbID                | dbID                |
| DsMdAlgorithmPackage           | dbID                | dbID                |
| DsMdGranules                   | dbID                | dbID                |
| DsMdBrowse                     | dbID                | dbID                |
| DsMdCampaign                   | dbID                | dbID                |
| DsMdSensor                     | dbID                | dbID                |
| DsMdPlatform                   | dbID                | dbID                |
| DsMdInstrument                 | dbID                | dbID                |
| DsMdSSAPComponent              | dbID                | dbID                |
| DsMdQaGranule                  | dbID                | dbID                |
| DsMdCollDisciplineKeywordXref  | disciplineKeywordId | disciplineKeywordId |
| DsMdAlgorithmPkgFileStorage    | granuleId           | granuleId           |
| DsMdBrowseFileStorage          | granuleId           | granuleId           |
| DsMdMdSSAPComponentFileStorage | granuleId           | granuleId           |
| DsMdQaGranuleFileStorage       | granuleId           | granuleId           |
| DsMdProcessHistFileStorage     | granuleId           | granuleId           |
| DsMdFileStorageOrphans         | granuleId           | granuleId           |
| DsMdFileDAPStorage             | granuleId           | granuleId           |
| DsMdL7ErrorHandling            | granuleId           | granuleId           |
| DsMdL7ErrorHandling_gr         | granuleId           | granuleId           |
| DsMdOrbitCalcSpatialDomain     | granuleId           | granuleId           |
| DsMdOrbitCalculatedSpatial     | granuleId           | granuleId           |
| DsMdGrBoundingRectangle        | granuleId           | granuleId           |
| DsMdGranuleLocality            | granuleId           | granuleId           |
| DsMdAncillaryInput             | granuleId           | granuleId           |
| DsMdInputGranule               | granuleId           | granuleId           |
| DsMdGranuleReview              | granuleId           | granuleId           |
| DsMdGrIntegerInfoContent       | granuleId           | granuleId           |
| DsMdGrPoint                    | granuleId           | granuleId           |
| DsMdCollectionGranuleXref      | granuleId           | granuleId           |
| DsMdGrStorageMedium            | granuleId           | granuleId           |
| DsMdGrStringInfoContent        | granuleId           | granuleId           |
| DsMdFileStorage                | granuleId           | granuleId           |
| DsMdGranuleSensorXref          | granuleId           | granuleId           |
| DsMdGranuleAnalysisXref        | granuleId           | granuleId           |
| DsMdBrowseGranuleXref          | granuleId           | granuleId           |
| DsMdGrSensorCharacteristics    | granuleId           | granuleId           |
| DsMdGranuleInstrumentXref      | granuleId           | granuleId           |
| DsMdXAR                        | granuleId           | granuleId           |

| Table Code                    | Column Name         | Column Code         |
|-------------------------------|---------------------|---------------------|
| DsMdMeasuredParameter         | granuleId           | granuleId           |
| DsMdGranulePlatformXref       | granuleId           | granuleId           |
| DsMdGrGPolygGPolygonContainer | granuleId           | granuleId           |
| DsMdGrGPolygon                | granuleId           | granuleId           |
| DsMdQaGranule                 | granuleId           | granuleId           |
| DsMdQaGranuleXref             | granuleId           | granuleId           |
| DsMdGranuleCampaignXref       | granuleId           | granuleId           |
| DsMdProcessingQA              | granuleId           | granuleId           |
| DsMdGrVerticalSpatialDomain   | granuleId           | granuleId           |
| DsMdGrFloatInfoContent        | granuleId           | granuleId           |
| DsMdGrCircle                  | granuleId           | granuleId           |
| DsMdInputGranule              | inputGranule        | inputGranule        |
| DsMdInstrumentCharacteristic  | instrumentId        | instrumentId        |
| DsMdCollectionInstrumentXref  | instrumentId        | instrumentId        |
| DsMdSensor                    | instrumentId        | instrumentId        |
| DsMdOperationMode             | instrumentId        | instrumentId        |
| DsMdGranuleInstrumentXref     | instrumentId        | instrumentId        |
| DsMdIdentifier                | lastIdentifier      | lastIdentifier      |
| DsMdPersonOrganizationXref    | organizationId      | organizationId      |
| DsMdECSPparameterKeywords     | parameterKeywordId  | parameterKeywordId  |
| DsMdPersonOrganizationXref    | personId            | personId            |
| DsMdGranulePlatformXref       | platformId          | platformId          |
| DsMdCollectionPlatformXref    | platformId          | platformId          |
| DsMdInstrument                | platformId          | platformId          |
| DsMdPlatformCharacteristic    | platformId          | platformId          |
| DsMdGranuleVersions           | previousGranuleId   | previousGranuleId   |
| DsMdGranules                  | primaryCollectionId | primaryCollectionId |
| DsMdGranules                  | processingHistoryId | processingHistoryId |
| DsMdQaGranuleXref             | qald                | qald                |
| DsMdL7ErrorHandling_gr        | sceneGranuleId      | scenegranuleId      |
| DsMdCollectionSensorXref      | sensorId            | sensorId            |
| DsMdSensorCharacteristic      | sensorId            | sensorId            |
| DsMdGranuleSensorXref         | sensorId            | sensorId            |
| DsMdAPSAPComponentXref        | ssapId              | ssapId              |
| DsMdSSAPComponentAPVersion    | ssapId              | ssapId              |

### 3.1.6 Rules

Sybase supports the definitions of rules. Rules provide a means for enforcing domain constraints on a given column. Multiple rules may be defined for a given column. Multiple rules are not always uniquely named. All rules defined in Sybase for the SDSRV database are described herein.

**Rule: AbscissaResolution****Description**

Abscissa Resolution > 0.0

**Rule: AbstractPointer****Description**

If abstract exists (must for all papers), this must exist.

**Rule: AdditionalAttribute****Description**

If AdditionalAttributeDescription exists then AdditionalAttributeName must exist.

**Rule: AggregationRelationship****Description**

If AggregationType and AggregationValue exist then AggregationRelationship must exist.

**Rule: AggregationType****Description**

If AggregationValue and AggregationRelationship exist then AggregationType must exist.

**Rule: AggregationValue****Description**

If AggregationType and AggregationRelationship exist then AggregationValue must exist.

**Rule: AlgorithmPackageAcceptanceDate****Description**

AlgorithmPackageAcceptanceDate must exist if Delivered Algorithm Package (DsMdDAP) is utilized.

**Rule: AlgorithmPackageMaturityCode****Description**

AlgorithmPackageMaturityCode must exist if Delivered Algorithm Package is utilized.

**Rule: AlgorithmPackageName****Description**

AlgorithmPackageName must exist if Delivered Algorithm Package is utilized.

**Rule: AlgorithmPackageVersion****Description**

AlgorithmPackageVersion must exist if Delivered Algorithm Package is utilized.

**Rule: AltitudeDatumName****Description**

AltitudeDatumName is mandatory if AltitudeSystemDefinition class is applicable.

**Rule: AltitudeDistanceUnits****Description**

AltitudeDistanceUnits is mandatory if AltitudeSystemDefinition class is applicable.

**Rule: AltitudeResolution****Description**

Altitude Resolution > 0.0

**Rule: AnalysisShortName****Description**

Primary Key

**Rule: AnalysisType****Description**

Defined Valid

**Rule: AncillaryInputPointer****Description**

If ancillary data exists then AncillaryInputPointer exists.

**Rule: AncillaryInputPointer****Description**

If ancillary data exists then AncillaryInputPointer exists.

**Rule: AncillaryInputPointer****Description**

If ancillary data exists then AncillaryInputPointer exists.

**Rule: ATBDPointer****Description**

If ATBD exists, (type of DsMdSSAPComponent) then ATBDPointer exists.

**Rule: AutomaticQualityFlag****Description**

One flag from QAFlags (QutomaticQualityFlag, ScienceQualityFlag, OperationalQualityFlag) must exist.

**Rule: BearingReferenceMeridian****Description**

BearingReferenceMeridian is mandatory if DistanceandBearingRepresentation class is applicable.

**Rule: BearingResolution****Description**

BearingResolution is mandatory if DistanceandBearingRepresentation class is applicable.

**Rule: BearingResolution****Description**

Bearing Resolution > 0.0

**Rule: BearingUnits****Description**

BearingUnits is mandatory if DistanceandBearingRepresentation class is applicable.

**Rule: BrowseDescription****Description**

Must exist if browse produced.

**Rule: BrowsePointer****Description**

If browse product exists then BrowsePointer exists.

**Rule: BrowseSize****Description**

Must be < 1 MB.

**Rule: CalendarDate****Description**

CalendarDate is mandatory if SingleDateTime class is used.

**Rule: CalibrationFilesPointer****Description**

If Calibration File exists, (type of DsMdSSAPComponent) then CalibrationFilesPointer must exist.

**Rule: CampaignEndDate****Description**

Must be after campaign start date.

**Rule: CampaignShortName****Description**

Primary Key

**Rule: CampaignStartDate****Description**

Must be before campaign end date.

**Rule: CenterLatitude****Description**

CenterLatitude <= +90.0

**Rule: CenterLatitude****Description**

CenterLatitude => -90.0

**Rule: CenterLatitude****Description**

West,East,North,South Bounding Coordinate not allowed with center lat/lon

**Rule: CenterLongitude****Description**

CenterLongitude <= +180.0

**Rule: CenterLongitude****Description**

Not to be used with West,East,North,South Bounding Coordinates.

**Rule: CenterLongitude3****Description**

CenterLongitude => -180.0

**Rule: ChangeLogPointer****Description**

If Change Log exists, (type of DsMdSSAPComponent) then ChangeLogPointer must exist.

**Rule: CollectionType****Description**

Must exist when Collection Use is used.

**Rule: CollectionUse****Description**

Must exist when Collection Type is used.

**Rule: CompileInfoPointer****Description**

If CompileInfo exists, (type of DsMdSAAPComponent) then CompileInfoPointer must exist.

**Rule: ContactJobPosition****Description**

DIF= Investigator, Technical Contact, or Data Center Contact dependent upon Contact(First, Middle, Last)Name.

**Rule: ContactName****Description**

DIF= Investigator, Technical Contact, or Author dependent upon domain value of Role= Investigator, Technical Contact, or Author

**Rule: ContactOrganizationName****Description**

DIF= Data Center Name dependent upon domain value of Role=Archive; DIF=Originating Center dependent upon domain value of Role= Producer

**Rule: ContextDiagramsPointer****Description**

If Context Diagrams (type of DsMdSSAPComponent) exists then ContextDiagramsPointer must exist.

**Rule: DateLastModified****Description**

If Delivered Algorithm Package is utilized then DateLastModified must exist.

**Rule: DeliveryContentsListPointer****Description**

If Delivery Contents List exists, (type of DsMdSSAPComponent) then DeliveryContentsListPointer must exist.

**Rule: DeliveryPurpose****Description**

DeliveryPurpose must exist if Delivered Algorithm Package is utilized.

**Rule: DenominatorofFlatteningRatio****Description**

DenominatorofFlatteningRatio > 0.0

**Rule: DenominatorofFlateningRatio****Description**

DenominatorofFlatteningRatio is mandatory if GeodeticModel class is applicable.

**Rule: DepthDatumName****Description**

DepthDatumName is mandatory if DepthSystemDefinition class is applicable.

**Rule: DepthDistanceUnits****Description**

DepthDistanceUnits are mandatory if DepthSystemDefinition class is applicable.

**Rule: DepthEncodingMethod****Description**

DepthEncodingMethod is mandatory if DepthSystemDefinition class is applicable.

**Rule: DepthResolution****Description**

DepthResolution is mandatory if DepthSystemDefinition class is applicable.

**Rule: DepthResolution****Description**

Depth Resolution > 0.0

**Rule: DetailedDesignPointer****Description**

If Detailed Design Document exists, (type of DsMdSSAPComponent) then DetailedDesignPointer must exist.

**Rule: DistanceResolution****Description**

DistanceResolution > 0.0

**Rule: DistanceResolution****Description**

DistanceResolution is mandatory if DistanceandBearingRepresentation class is applicable.

**Rule: Document****Description**

Mandatory for all documents.

**Rule: EastBoundingCoordinate****Description**

EastBoundingCoordinate <= +180.0

**Rule: EastBoundingCoordinate****Description**

EastBoundingCoordinate not null for collection only.

**Rule: EastBoundingCoordinate****Description**

EastBoundingCoordinate => -180.0

**Rule: ECSPParameterKeyword****Description**

Controlled keyword

**Rule: EllipsoidName****Description**

EllipsoidName is mandatory if GeodeticModel class is applicable.

**Rule: ExclusionGRingFlag****Description**

ExclusionGRingFlag is mandatory if GRing class is applicable.

**Rule: ExternalDataPointer****Description**

If External Data exists, (type of DsMdSSAPComponent) then ExternalDataPointer must exist.

**Rule: GeographicalRegionName****Description**

If class utilized, this must exist.

**Rule: GeographicCoordinateUnits****Description**

Units of measure used for the geodetic latitude and longitude resolution values. For latitude, a 2 digit decimal number from 0-90; for longitude, a 3 digit decimal number from 0-180. + or absence of - for values north of equator or values west of prime meridian; - for all others.

**Rule: GRingPointLatitude****Description**

GRingPointLatitude <= +90.0

**Rule: GRingPointLatitude****Description**

GRingPointLatitude is mandatory if GRingPoint class is applicable.

**Rule: GRingPointLatitude****Description**

GRingPointLatitude >= -90.0

**Rule: GRingPointLongitude****Description**

GRingPointLongitude <= +180.0

**Rule: GRingPointLongitude****Description**

GRingPointLongitude is mandatory if GRingPoint class is applicable.

**Rule: GRingPointLongitude****Description**

GRingPointLongitude >= -180.0

**Rule: GRingPointSequenceNo****Description**

GRingPointSequenceNo is mandatory if GRingPoint class is applicable.

**Rule: HorizontalDatumName****Description**

HorizontalDatumName is mandatory if GeodeticModel class is applicable.

**Rule: InstrumentCharacteristic****Description**

Must exist if SensorCharacteristicValue exists.

**Rule: InstrumentCharacteristicName****Description**

Must conform to ECS attribute naming guidelines. Primary Key.

**Rule: InstrumentCharacteristicValue****Description**

Abstract class instantiated as either int:string:date:float.

**Rule: InstrumentEngineeringDataPointer****Description**

If Instrument Engineering Data exists, (type of DsMdSAAPComponent) then InstrumentEngineeringDataPointer must exist.

**Rule: InstrumentLongName****Description**

Defined Valid

**Rule: InstrumentScienceDataPointer****Description**

If Instrument Science Data exists, (type of DsMdSSAPComponent) then InstrumentScienceDataPointer must exist.

**Rule: InstrumentShortName****Description**

Primary Key

**Rule: JournalArtical****Description**

If journal article exists, (type of DsMdSSAPComponent) this must exist.

**Rule: LatitudeResolution****Description**

LatitudeResolution > 0.0

**Rule: LatitudeResolution****Description**

LatitudeResolution is mandatory if GeographicCoordinateSystem class is applicable.

**Rule: LinkandCompileScriptsPointer****Description**

If Link and Compile Scripts exists then LinkandCompilePointer must exist.

**Rule: LocalCoordinateSystemDescription****Description**

LocalCoordinateSystemDescription is mandatory if LocalCoordinateSystem class is applicable.

**Rule: LocalityDescription****Description**

Must exist if locality type does.

**Rule: LocalityType****Description**

Mandatory if class is applicable and if granule locality is used.

**Rule: LocalPlanarCoordinateSystem****Description**

LocalPlanarCoordinateSystemDescription is mandatory if LocalPlanarCoordinateSystem class is applicable.

**Rule: LocalPlanarGeoreferenceInformation****Description**

LocalPlanarGeoreferenceinformation is mandatory if LocalPlanarCoordinateSystem class is applicable.

**Rule: LongitudeResolution****Description**

LongitudeResolution > 0.0

**Rule: LongitudeResolution****Description**

LongitudeResolution is mandatory if GeographicCoordinateSystem class is applicable.

**Rule: LongName****Description**

Not null.

**Rule: LongName****Description**

Must be unique.

**Rule: Mandatory****Description**

Mandatory if applicable.

**Rule: MapProjectionName****Description**

The name of the systematic representation of all or part of the surface of the Earth on a plane or developable surface.

**Rule: MetadataConfigurationFilePointer****Description**

If Metadata Configuration File exists, (type of DsMdSSAPComponent) then MetadataConfigurationFilePointer must exist.

**Rule: NorthBoundingCoordinate****Description**

NorthBoundingCoordinate => -90.0

**Rule: NorthBoundingCoordinate****Description**

NorthBoundingCoordinate <= +90.0

**Rule: NorthBoundingCoordinate****Description**

NorthBoundingCoordinate => SouthBoundingCoordinate

**Rule: NorthBoundingCoordinate****Description**

NorthBoundingCoordinate not null for collection only.

**Rule: NotNull****Description**

This value is not null.

**Rule: NumberofSensors****Description**

Must correspond to sensors associated via SensorShortName.

**Rule: OperationalQualityFlag****Description**

One flag from QAFlags (QutomaticQualityFlag, OperationalQualityFlag, ScienceQualityFlag) must exist.

**Rule: OperationManualPointer****Description**

If Operation Manual exists then OperationManualPointer must exist.

**Rule: OrbitModelName****Description**

OrbitModelName is mandatory if OrbitCalculatedSpatialDomain class is applicable.

**Rule: OrbitModelName****Description**

OrbitModelName is mandatory if OrbitCalculatedSpatialDomain class is applicable.

**Rule: OrbitNumber****Description**

OrbitNumber is mandatory if OrbitCalculatedSpatialDomain class is applicable.

**Rule: OrbitNumber****Description**

Constraints should be provided per satellite.

**Rule: OrbitNumber****Description**

Orbitnumber > 0

**Rule: OrbitNumber****Description**

OrbitNumber is mandatory if OrbitCalculatedSpatialDomain class is applicable.

**Rule: OrbitParametersPointer****Description**

Orbit file must exist if OrbitParametersPointer is used.

**Rule: OrbitParametersPointer****Description**

Orbit file must exist if OrbitParametersPointer is used.

**Rule: OrbitParametersPointer****Description**

Orbit file must exist if OrbitParametersPointer is used.

**Rule: OrdinateResolution****Description**

Ordinate Resolution > 0.0

**Rule: ParameterUnitsofMeasurement****Description**

If ParameterValue exists then ParameterUnitsofMeasurement exist.

**Rule: ParameterValue****Description**

If parameter is physical then units must exist.

**Rule: ParameterValue****Description**

If ParameterValue exists then the class ECSParameter must exist.

**Rule: PerformanceTestResultsPointer****Description**

If Performance Test Results exist then PerformanceTestResultsPointer must exist.

**Rule: Period1stDate****Description**

Period1stDate is mandatory if RegularPeriodic class is used.

**Rule: Period1stTime****Description**

Period1stTime is mandatory if RegularPeriodic class is used.

**Rule: PeriodCycleDurationUnit****Description**

PeriodCycleDurationUnit is mandatory if RegularPeriodic class is used.

**Rule: PeriodCycleDurationValue****Description**

PeriodCycleDurationValue is mandatory if RegularPeriodic class is used.

**Rule: PeriodCycleDurationValue****Description**

PeriodCycleDurationValue > 0.0 if used.

**Rule: PeriodDurationUnit****Description**

PeriodDurationUnit is mandatory if RegularPeriodic class is used.

**Rule: PeriodName****Description**

PeriodName is mandatory if RegularPeriodic class is used.

**Rule: PGEConfigFilePointer****Description**

If PGE Configuration File exists then PGEConfigFilePointer exists.

**Rule: PGEErrorLogPointer****Description**

If PGE Error Log exists then PGEErrorLogPointer must exist.

**Rule: PGFunction****Description**

If Delivered Algorithm Package is utilized then PGFunction must exist.

**Rule: PGEIdentifier****Description**

If Delivered Algorithm Package is utilized then PGEIdentifier exists.

**Rule: PGName****Description**

If Delivered Algorithm Package is utilized then PGName exists.

**Rule: PGEVersion****Description**

If Delivered Algorithm Package is utilized then PGEVersion must exist.

**Rule: PlanarCoordinateEncodingMethod****Description**

PlanarCoordinateEncodingMethod is mandatory if map projection, grid coordinate system, or local planar coordinate.

**Rule: PlanarDistanceUnits****Description**

PlanarDistanceUnits are mandatory if map projection, grid coordinate system, or local planar coordinate system is used.

**Rule: PlatformAncillaryDataPointer****Description**

If Platform Ancillary Data exists then PlatformAncillaryDataPointer must exist.

**Rule: PlatformCharacteristicName****Description**

Must conform to ECS attribute naming guidelines.

**Rule: PlatformShortName****Description**

Primary Key

**Rule: PointLatitude****Description**

PointLatitude <= +90.0

**Rule: PointLatitude****Description**

PointLatitude => -90.0

**Rule: PointLatitude****Description**

PointLatitude is mandatory if Point class is applicable.

**Rule: PointLongitude****Description**

PointLongitude => -180.0

**Rule: PointLongitude****Description**

PointLongitude <= +180.0

**Rule: PointLongitude****Description**

PointLongitude is mandatory if Point class is applicable.

**Rule: PrecisionofSeconds****Description**

PrecisionofSeconds => 0

**Rule: ProcessControlParametersandResourceFilesPointer****Description**

If Process Control Parameters and Resource Files exist then its pointer must exist.

**Rule: ProcessingFileDescriptionPointer****Description**

If Processing File Description exists then ProcessingFileDescriptionPointer must exist.

**Rule: ProcessingHistoryPointer****Description**

Processing history log must exist.

**Rule: ProductionPlanPointer****Description**

Must exist for all ECS-produced products.

**Rule: ProductionPlanStartDate****Description**

ProductionPlanStartDate must exist for all ECS-produced products.

**Rule: ProgrammersGuidePointer****Description**

If Programmers Guide exists then ProgrammersGuidePointer must exist.

**Rule: QAGranulePointer****Description**

If QAGranule exists then QAGranulePointer must exist.

**Rule: QAGranulePointer****Description**

If QAGranule exists then QAGranulePointer must exist.

**Rule: QAGranulePointer****Description**

If QAGranule exists then QAGranulePointer must exist.

**Rule: QAPercentOutofBoundsData****Description**

Mandatory

**Rule: QualityTextCommentPointer****Description**

If QualityText exists then QualityTextCommentPointer exists.

**Rule: RangeBeginningDate****Description**

RangeBeginningDate is mandatory if RangeDateTime class is used.

**Rule: RangeBeginningTime****Description**

RangeBeginningTime is mandatory if RangeDateTime class is used.

**Rule: RangeEndingDate****Description**

RangeEndingDate is mandatory if RangeDateTime class is used.

**Rule: RangeEndingTime****Description**

RangeEndingTime is mandatory if RangeDateTime class is used.

**Rule: ReferencePaper****Description**

If reference papers utilized, this must exist.

**Rule: RegionalAreaDefinitionGuidePointer****Description**

if guide exists, this must exist.

**Rule: ReprocessingActual****Description**

Constrained to number of times reprocessed.

**Rule: ResultProductFilePointer****Description**

If Results Product File exists then ResultsProductFilePointer must exist.

**Rule: ResultReportPointer****Description**

If Results Report exists then ResultsReportPointer must exist.

**Rule: Role****Description**

Role is mandatory if contact is used.

**Rule: ScienceQualityFlag****Description**

One flag from QAFlags (AutomaticQualityFlag, OperationalQualityFlag, ScienceQualityFlag) must exist.

**Rule: ScSWScriptPointer****Description**

If Science Software Script exists, (type of DsMdSSAPComponent) then ScSWScriptPointer must exist.

**Rule: ScSWSourceCodePointer****Description**

If Science Software Source Code exists, (type of DsMdSSAPComponent) then ScSWSourceCodePointer exists.

**Rule: SemiMajorAxis****Description**

SemiMajorAxis mandatory if GeodeticModel class is applicable.

**Rule: SemiMajorAxis****Description**

SemiMajorAxis > 0.0

**Rule: SensorCharacteristicDescription****Description**

Use to define single-valued sensor attributes, not new objects.

**Rule: SensorCharacteristicName****Description**

Used to define sensor attributes, not objects associated with sensors.

**Rule: SensorCharacteristicValue****Description**

Domain defined by SensorCharacteristicDataType

**Rule: SouthBoundingCoordinate****Description**

SouthBoundingCoordinate <= NorthBoundingCoordinate

**Rule: SouthBoundingCoordinate****Description**

SouthBoundingCoordinate => -90.0

**Rule: SouthBoundingCoordinate****Description**

SouthBoundingCoordinate not null for collection only.

**Rule: SouthBoundingCoordinate****Description**

SouthBoundingCoordinate <= +90.0

**Rule: StandAloneDocumentPointer****Description**

If guide exists, this must exist.

**Rule: StartOrbitNumber****Description**

StartOrbitNumber is mandatory if OrbitCalculatedSpatialDomain class is applicable.

**Rule: StartOrbitNumber****Description**

StartOrbitNumber is mandatory if OrbitCalculatedSpatialDomain class is applicable.

**Rule: StopOrbitNumber****Description**

StopOrbitNumber is mandatory if OrbitCalculatedSpatialDomain class is applicable.

**Rule: StopOrbitNumber****Description**

StopOrbitNumber is mandatory if OrbitCalculatedSpatialDomain class is applicable.

**Rule: SWDateLastModified****Description**

Mandatory if any modification made.

**Rule: SWDevelopmentStandardPointer****Description**

If SW Development Standard exists, (type of DsMdSSAPComponent) then SWDevelopmentStandardPointer must exists.

**Rule: SystemDescriptionPointer****Description**

If System Description exists then SystemDescriptionPointer exists.

**Rule: TelephoneNumber****Description**

Phone is dependent upon TelephoneNumberType=Facsimile, TDD/TTY, Voice.

**Rule: TestPlanPointer****Description**

If Test Plan exists, (type of DsMdSSAPComponent) then TestPlanPointer exists.

**Rule: TestScriptPointer****Description**

If Test Script exists, (type of DsMdSSAPComponent) then TestScriptPointer exists.

**Rule: TestSiteConfigPointer****Description**

If Test Site Config exists, (type of DsMdSSAPComponent) then TestSiteConfigPointer exists.

**Rule: TestSourceCodePointer****Description**

If Test Source Code exists, (type of DsMdSSAPComponent) then TestSourceCodePointer exists.

**Rule: TimeOfDay****Description**

TimeOfDay is mandatory if SingleDateTime class is used.

**Rule: UserCommentDocumentPointer****Description**

User comment document must exist.

**Rule: ValidationDocumentPointer****Description**

Validation document must exist.

**Rule: VersionID****Description**

Should all default to 1.

**Rule: WestBoundingCoordinate****Description**

WestBoundingCoordinate not null for collection only.

**Rule: WestBoundingCoordinate****Description**

WestBoundingCoordinate => -180.0

**Rule: WestBoundingCoordinate****Description**

WestBoundingCoordinate <= +180.0

**Rule: ZonelIdentifier****Description**

Must be valid FGDC zone.

**Rule: ZonelIdentifier****Description**

Mandatory if grid coordinate system is used.

### **3.1.7 Defaults**

Defaults are used to supply a value for a column when one is not defined at insert time. All defaults defined in Sybase in the SDSRV database are described herein.

### **3.1.8 Views**

Sybase allows the definition of views as a means of limiting an application or users access to data in a table or tables. Views create a logical table from columns found in one or more tables. There are no views defined in the SDSRV database.

### **3.1.9 Integrity Constraints**

Sybase allows the enforcement of referential integrity via the use of declarative integrity constraints. Integrity constraints allow the SQL server to enforce primary and foreign key integrity checks without automatically without requiring programming. Sybase 11 is only ANSI-92 compliant, however, therefore its constraints support "restrict-only" operations. This means that a row can not be deleted or updated if there are rows in other tables having a foreign key dependency on that row. Cascade delete and update operations can not be performed if a

declarative constraint has been used. All declarative integrity constraints defined in the SDSRV database are described herein.

### **3.1.9.1 Dependencies on Table: DsDeDictionaryAttribute**

| Referenced by      | Primary Key | Foreign Key |
|--------------------|-------------|-------------|
| DsDeDictionaryRule | attributeID | AttributeID |

### **3.1.9.2 Dependencies on Table: DsMdAdditionalAttributes**

| Referenced by              | Primary Key | Foreign Key |
|----------------------------|-------------|-------------|
| DsMdCollIntegerInfoContent | attributeld | attributeld |
| DsMdCollFloatInfoContent   | attributeld | attributeld |
| DsMdCollStringInfoContent  | attributeld | attributeld |
| DsMdGrFloatInfoContent     | attributeld | Attributeld |
| DsMdGrIntegerInfoContent   | attributeld | Attributeld |
| DsMdGrStringInfoContent    | attributeld | Attributeld |

### **3.1.9.3 Dependencies on Table: DsMdAlgorithmPackage**

| Referenced by               | Primary Key | Foreign Key |
|-----------------------------|-------------|-------------|
| DsMdApContactXref           | dbID        | dapId       |
| DsMdAPSAPComponentXref      | dbID        | apId        |
| DsMdAlgorithmPkgFileStorage | dbID        | granuleId   |
| DsMdCollectionAPXref        | dbID        | apId        |

### **3.1.9.4 Dependencies on Table: DsMdAnalysisSource**

| Referenced by           | Primary Key | Foreign Key      |
|-------------------------|-------------|------------------|
| DsMdGranuleAnalysisXref | dbID        | analysisSourceId |

### **3.1.9.5 Dependencies on Table: DsMdBrowse**

| Referenced by         | Primary Key | Foreign Key |
|-----------------------|-------------|-------------|
| DsMdBrowseGranuleXref | dbID        | browseld    |
| DsMdBrowseFileStorage | dbID        | granuleId   |
| DsMdCollBrowseXref    | dbID        | browseld    |

### 3.1.9.6 Dependencies on Table: DsMdCampaign

| Referenced by           | Primary Key | Foreign Key |
|-------------------------|-------------|-------------|
| DsMdGranuleCampaignXref | dbID        | campaignId  |

### 3.1.9.7 Dependencies on Table: DsMdCollections

| Referenced by                  | Primary Key | Foreign Key  |
|--------------------------------|-------------|--------------|
| DsMdCIBoundingRectangle        | dbID        | collectionId |
| DsMdCICircle                   | dbID        | collectionId |
| DsMdCIPolygon                  | dbID        | collectionId |
| DsMdCIPoint                    | dbID        | collectionId |
| DsMdCollectionGranuleXref      | dbID        | collectionId |
| DsMdCollectionAPXref           | dbID        | collectionId |
| DsMdCollDisciplineKeywordXref  | dbID        | collectionId |
| DsMdCollIntegerInfoContent     | dbID        | collectionId |
| DsMdCollFloatInfoContent       | dbID        | collectionId |
| DsMdCollStringInfoContent      | dbID        | collectionId |
| DsMdCollURLInfo                | dbID        | collectionId |
| DsMdSpatialKeyword             | dbID        | collectionId |
| DsMdTemporalKeyword            | dbID        | collectionId |
| DsMdLocality                   | dbID        | collectionId |
| DsMdTemporal                   | dbID        | collectionId |
| DsMdCollReview                 | dbID        | collectionId |
| DsMdSpatial                    | dbID        | collectionId |
| DsMdCSDTDescription            | dbID        | collectionId |
| DsMdCollStorageMedium          | dbID        | collectionId |
| DsMdCollZoneIdentifier         | dbID        | collectionId |
| DsMdQualityTextComment         | dbID        | collectionId |
| DsMdCollectionContactXref      | dbID        | collectionId |
| DsMdValidationDocument         | dbID        | collectionId |
| DsMdCollectionCampaignXref     | dbID        | collectionId |
| DsMdUserCommentDocument        | dbID        | collectionId |
| DsMdCollectionSensorXref       | dbID        | collectionId |
| DsMdCollectionAssociation      | dbID        | collectionId |
| DsMdCollectionPlatformXref     | dbID        | collectionId |
| DsMdCollectionAnalysisXref     | dbID        | collectionId |
| DsMdMultipleTypeCollection     | dbID        | collectionId |
| DsMdCollectionAddnlAttribsXref | dbID        | collectionId |
| DsMdCollectionInstrumentXref   | dbID        | collectionId |
| DsMdCollVerticalSpatialDomain  | dbID        | collectionId |

### **3.1.9.8 Dependencies on Table: DsMdContact**

| <b>Referenced by</b>      | <b>Primary Key</b> | <b>Foreign Key</b> |
|---------------------------|--------------------|--------------------|
| DsMdApContactXref         | dbID               | contactId          |
| DsMdCollectionContactXref | dbID               | contactId          |
| DsMdContactPersons        | dbID               | contactId          |
| DsMdContactAddress        | dbID               | contactId          |
| DsMdContactOrganizations  | dbID               | contactId          |
| DsMdEmailAddress          | dbID               | contactId          |
| DsMdTelephoneNumber       | dbID               | contactId          |

### **3.1.9.9 Dependencies on Table: DsMdContactOrganizations**

| <b>Referenced by</b>       | <b>Primary Key</b> | <b>Foreign Key</b> |
|----------------------------|--------------------|--------------------|
| DsMdPersonOrganizationXref | contactId          | organizationId     |

### **3.1.9.10 Dependencies on Table: DsMdContactPersons**

| <b>Referenced by</b>       | <b>Primary Key</b> | <b>Foreign Key</b> |
|----------------------------|--------------------|--------------------|
| DsMdPersonOrganizationXref | contactId          | personId           |

### **3.1.9.11 Dependencies on Table: DsMdDAP**

| <b>Referenced by</b> | <b>Primary Key</b> | <b>Foreign Key</b> |
|----------------------|--------------------|--------------------|
| DsMdDAPFileStorage   | dbID               | granuleId          |
| DsMdPGEGroup         | dbID               | dapDBId            |

### **3.1.9.12 Dependencies on Table: DsMdDisciplineKeywords**

| <b>Referenced by</b>          | <b>Primary Key</b> | <b>Foreign Key</b>  |
|-------------------------------|--------------------|---------------------|
| DsMdCollDisciplineKeywordXref | dbID               | disciplineKeywordId |
| DsMdECSPParameterKeywords     | dbID               | parameterKeywordId  |

### **3.1.9.13 Dependencies on Table: DsMdGranules**

| <b>Referenced by</b>      | <b>Primary Key</b> | <b>Foreign Key</b> |
|---------------------------|--------------------|--------------------|
| DsMdCollectionGranuleXref | dbID               | granuleId          |
| DsMdGranuleInstrumentXref | dbID               | granuleId          |
| DsMdGranuleSensorXref     | dbID               | granuleId          |

| Referenced by               | Primary Key | Foreign Key |
|-----------------------------|-------------|-------------|
| DsMdGranulePlatformXref     | dbID        | granuleId   |
| DsMdGrBoundingRectangle     | dbID        | granuleId   |
| DsMdGrFloatInfoContent      | dbID        | granuleId   |
| DsMdGrIntegerInfoContent    | dbID        | granuleId   |
| DsMdGrStringInfoContent     | dbID        | granuleId   |
| DsMdMeasuredParameter       | dbID        | granuleId   |
| DsMdProcessingQA            | dbID        | granuleId   |
| DsMdXAR                     | dbID        | granuleId   |
| DsMdFileStorage             | dbID        | granuleId   |
| DsMdInputGranule            | dbID        | granuleId   |
| DsMdGranuleLocality         | dbID        | granuleId   |
| DsMdGrStorageMedium         | dbID        | granuleId   |
| DsMdGranuleReview           | dbID        | granuleId   |
| DsMdQaGranuleXref           | dbID        | granuleId   |
| DsMdAncillaryInput          | dbID        | granuleId   |
| DsMdUninterpretedData       | dbID        | granuleId   |
| DsMdBrowseGranuleXref       | dbID        | granuleId   |
| DsMdGranuleAnalysisXref     | dbID        | granuleId   |
| DsMdGranuleCampaignXref     | dbID        | granuleId   |
| DsMdOrbitCalculatedSpatial  | dbID        | granuleId   |
| DsMdGrSensorCharacteristics | dbID        | granuleId   |
| DsMdOrbitCalcSpatialDomain  | dbID        | granuleId   |
| DsMdGrVerticalSpatialDomain | dbID        | granuleId   |
| DsMdGranuleVersions         | dbID        | granuleId   |

### 3.1.9.14 Dependencies on Table: DsMdInstrument

| Referenced by                | Primary Key | Foreign Key  |
|------------------------------|-------------|--------------|
| DsMdGranuleInstrumentXref    | dbID        | instrumentId |
| DsMdInstrumentCharacteristic | dbID        | instrumentId |
| DsMdOperationMode            | dbID        | instrumentId |
| DsMdSensor                   | dbID        | instrumentId |

### 3.1.9.16 Dependencies on Table: DsMdOrbitPolygons

| Referenced by | Primary Key | Foreign Key |
|---------------|-------------|-------------|
|               |             |             |

### 3.1.9.17 Dependencies on Table: DsMdParmToTableVector

| Referenced by            | Primary Key | Foreign Key                 |
|--------------------------|-------------|-----------------------------|
| DsMdAdditionalAttributes | DataType    | AdditionalAttributeDataType |

### 3.1.9.18 Dependencies on Table: DsMdPlatform

| Referenced by              | Primary Key | Foreign Key |
|----------------------------|-------------|-------------|
| DsMdGranulePlatformXref    | dbID        | platformId  |
| DsMdInstrument             | dbID        | platformId  |
| DsMdPlatformCharacteristic | dbID        | platformId  |

### 3.1.9.19 Dependencies on Table: DsMdPlatInstrCode

| Referenced by     | Primary Key            | Foreign Key  |
|-------------------|------------------------|--------------|
| DsMdOrbitPolygons | platformInstrumentCode | platInstCode |

### 3.1.9.20 Dependencies on Table: DsMdProcessingHistory

| Referenced by              | Primary Key | Foreign Key |
|----------------------------|-------------|-------------|
| DsMdProcessHistFileStorage | dbID        | granuleId   |

### 3.1.9.21 Dependencies on Table: DsMdSensor

| Referenced by            | Primary Key | Foreign Key |
|--------------------------|-------------|-------------|
| DsMdGranuleSensorXref    | dbID        | sensorId    |
| DsMdSensorCharacteristic | dbID        | sensorId    |

### 3.1.9.22 Dependencies on Table: DsMdSpatial

| Referenced by               | Primary Key  | Foreign Key  |
|-----------------------------|--------------|--------------|
| DsMdAltitudeResolution      | collectionId | collectionId |
| DsMdDepthResolution         | collectionId | collectionId |
| DsMdPlanarCoordinateSystems | collectionId | collectionId |

### 3.1.9.23 Dependencies on Table: DsMdSSAPComponent

| Referenced by                | Primary Key | Foreign Key |
|------------------------------|-------------|-------------|
| DsMdAPSAPComponentXref       | dbID        | ssapId      |
| DsMdSSAPComponentFileStorage | dbID        | granuleId   |
| DsMdSSAPComponentAPVersion   | dbID        | ssapId      |

### **3.1.9.24 Dependencies on Table: DsMdTemporal**

| <b>Referenced by</b>       | <b>Primary Key</b> | <b>Foreign Key</b> |
|----------------------------|--------------------|--------------------|
| DsMdMultipleDateTimePeriod | collectionId       | collectionId       |
| DsMdRangeDateTime          | collectionId       | collectionId       |
| DsMdRegularPeriodic        | collectionId       | collectionId       |
| DsMdSingleDateTime         | collectionId       | collectionId       |

### **3.1.9.25 Dependencies on Table: DsSiRequest**

| <b>Referenced by</b> | <b>Primary Key</b> | <b>Foreign Key</b> |
|----------------------|--------------------|--------------------|
| DsSiReqDomain        | dbIDint            | reqDomainID        |
| DsSiAcquireCmd       | dbIDint            | requestID          |

### **3.1.9.26 Dependencies on Table: DsSiAcquireCmd**

| <b>Referenced by</b>   | <b>Primary Key</b> | <b>Foreign Key</b> |
|------------------------|--------------------|--------------------|
| DsSiAcqBand            | commandID          | commandID          |
| DsSiAcqPolygon         | commandID          | commandID          |
| DsSiAcquireCmdFileInfo | commandID          | commandID          |

### **3.1.9.27 Dependencies on Table: SQStemplates**

| <b>Referenced by</b> | <b>Primary Key</b> | <b>Foreign Key</b> |
|----------------------|--------------------|--------------------|
| SQStemplates_plural  | id                 | id                 |

### **3.1.9.28 Dependencies on Table: SQStypes**

| <b>Referenced by</b> | <b>Primary Key</b> | <b>Foreign Key</b> |
|----------------------|--------------------|--------------------|
| SQStemplates         | usertype           | usertype           |

### **3.1.9.29 Dependencies on Table: DsDeDictionaryAttribute**

| <b>Referenced by</b> | <b>Primary Key</b> | <b>Foreign Key</b> |
|----------------------|--------------------|--------------------|
| DsDeDictionaryRule   | attributeID        | attributeID        |

### **3.1.9.30 Dependencies on Table: DsDeDictionaryContent**

| Referenced by           | Primary Key | Foreign Key |
|-------------------------|-------------|-------------|
| DsDeDictionaryAttribute | contentID   | contentID   |

### **3.1.9.31 Dependencies on Table: DsMdAdditionalAttribute**

| Referenced by              | Primary Key | Foreign Key |
|----------------------------|-------------|-------------|
| DsMdGrFloatInfoContent     | attributeld | attributeld |
| DsMdCollFloatInfoContent   | attributeld | attributeld |
| DsMdGrStringInfoContent    | attributeld | attributeld |
| DsMdCollStringInfoContent  | attributeld | attributeld |
| DsMdGrIntegerInfoContent   | attributeld | attributeld |
| DsMdCollIntegerInfoContent | attributeld | attributeld |

### **3.1.9.32 Dependencies on Table: DsMdAlgorithmPackage**

| Referenced by               | Primary Key | Foreign Key |
|-----------------------------|-------------|-------------|
| DsMdCollectionAPXref        | dbID        | apld        |
| DsMdApContactXref           | dbID        | daplD       |
| DsMdAPSAPComponentXref      | dbID        | apld        |
| DsMdAlgorithmPkgFileStorage | dbID        | granuleID   |

### **3.1.9.33 Dependencies on Table: DsMdQaGranule**

| Referenced by            | Primary Key | Foreign Key |
|--------------------------|-------------|-------------|
| DsMdQaGranuleXref        | dbID        | qald        |
| DsMdQaGranuleFileStorage | dbID        | granuleID   |

### **3.1.9.34 Dependencies on Table: DsSiRequestDetails**

| Referenced by  | Primary Key | Foreign Key |
|----------------|-------------|-------------|
| DsSiURs        | dbID        | requestID   |
| DsSiParameters | dbID        | requestID   |

## **3.1.10 Triggers**

Sybase supports the enforcement of business policy via the use of triggers. A trigger is best defined as set of activities or checks that should be performed automatically when ever a row is

inserted, updated, or deleted from a given table. Sybase allows the definition of one insert, update, and delete trigger per table. A listing of each the triggers in the SDSRV database is given here.

## Trigger List

| Table                          | Trigger                         |
|--------------------------------|---------------------------------|
| DsBtNotifierQueue              | TrigInsDsBtNotifierQueue        |
| DsDeEvent                      | TrigInsDsDeEvent                |
| DsDeEvent                      | TrigDelDsDeEvent                |
| DsDeDictionaryAttribute        | TrigInsDictionaryAttribute      |
| DsDeDictionaryAttribute        | TrigUpdDictionaryAttribute      |
| DsDeDictionaryContent          | TrigDelDictionaryContent        |
| DsDeDictionaryContent          | TrigUpdDictionaryContent        |
| DsGeESDTConfiguredType         | TrigDelESDTConfiguredType       |
| DsGeESDTConfiguredType         | TrigInsESDTConfiguredType       |
| DsGeESDTConfiguredType         | TrigUpdESDTConfiguredType       |
| DsMdAdditionalAttributes       | TrigDelAdditionalAttributes     |
| DsMdAlgorithmPackage           | TrigUpdAlgPkg                   |
| DsMdAncillaryInput             | TrigUpdAncillaryInput           |
| DsMdBrowse                     | TrigUpdBrowse                   |
| DsMdBrowseGranuleXref          | TrigUpdBrowseGranuleXref        |
| DsMdCollectionAddnlAttribsXref | TrigUpdCollectionAddnlAttrXref  |
| DsMdCollectionAnalysisXref     | TrigUpdCollectionAnalysisXref   |
| DsMdCollectionCampaignXref     | TrigUpdCollectionCampaignXref   |
| DsMdCollectionContactXref      | TrigUpdCollectionContactXref    |
| DsMdCollectionInstrumentXref   | TrigUpdCollectionInstrumentXref |
| DsMdCollectionPlatformXref     | TrigUpdCollectionPlatformXref   |
| DsMdCollections                | TrigDelCollections              |
| DsMdCollections                | TrigInsCollections              |
| DsMdCollections                | TrigUpdCollections              |
| DsMdCollectionSensorXref       | TrigUpdCollectionSensorXref     |
| DsMdCollFloatInfoContent       | TrigDelCollFloatInfoContent     |
| DsMdCollIntegerInfoContent     | TrigDelCollIntegerInfoContent   |
| DsMdCollReview                 | TrigUpdCollReview               |
| DsMdCollStringInfoContent      | TrigDelCollStringInfoContent    |
| DsMdCollVerticalSpatialDomain  | TrigUpdCollVerticalSpatialDomn  |
| DsMdCollZoneIdentifier         | TrigUpdCollZoneIdentifier       |
| DsMdCSDTDescription            | TrigUpdCSDTDescription          |
| DsMdDAP                        | TrigUpdDAP                      |
| DsMdFileStorage                | TrigUpdFileStorage              |
| DsMdGranuleAnalysisXref        | TrigUpdGranuleAnalysisXref      |
| DsMdGranuleCampaignXref        | TrigUpdGranuleCampaignXref      |

| <b>Table</b>                | <b>Trigger</b>                 |
|-----------------------------|--------------------------------|
| DsMdGranuleLocality         | TrigUpdGranuleLocality         |
| DsMdGranuleReview           | TrigUpdGranuleReview           |
| DsMdGranules                | TrigInsGranules                |
| DsMdGranules                | TrigUpdGranules                |
| DsMdGranuleVersions         | TrigUpdGranuleVersions         |
| DsMdGrFloatInfoContent      | TrigDelGrFloatInfoContent      |
| DsMdGrIntegerInfoContent    | TrigDelGrIntInfoContent        |
| DsMdGrSensorCharacteristics | TrigUpdGrSensorCharacteristics |
| DsMdGrStorageMedium         | TrigUpdGrStorageMedium         |
| DsMdGrStringInfoContent     | TrigDelGrStringInfoContent     |
| DsMdGrVerticalSpatialDomain | TrigUpdGrVerticalSpatialDomain |
| DsMdInputGranule            | TrigUpdInputGranule            |
| DsMdLocality                | TrigUpdLocality                |
| DsMdMeasuredParameter       | TrigUpdMeasuredParameter       |
| DsMdMultipleTypeCollection  | TrigUpdMultipleTypeCollection  |
| DsMdOrbitCalcSpatialDomain  | TrigUpdOrbitCalcSpatialDomain  |
| DsMdOrbitCalculatedSpatial  | TrigInsOrbitCalculatedSpatial  |
| DsMdOrbitCalculatedSpatial  | TrigUpdOrbitCalculatedSpatial  |
| DsMdOrbitPolygons           | TrigDelOrbitPolygons           |
| DsMdProcessingHistory       | TrigDelProcessingHistory       |
| DsMdProcessingHistory       | TrigUpdProcessingHistory       |
| DsMdQaGranule               | TrigUpdQaGranule               |
| DsMdQaGranuleXref           | TrigUpdQaGranuleXref           |
| DsMdQualityTextComment      | TrigUpdQualityTextComment      |
| DsMdSpatial                 | TrigUpdSpatial                 |
| DsMdSSAPComponent           | TrigUpdSSAPComp                |
| DsMdSSAPComponentAPVersion  | TrigInsAPVersion               |
| DsMdTemporal                | TrigUpdTemporal                |
| DsMdUninterpretedData       | TrigUpdUninterpretedData       |
| DsMdValidationDocument      | TrigUpdValidationDocument      |
| DsMdXAR                     | TrigUpdXAR                     |
| EcDbDatabaseVersions        | TrigInsEcDbDatabaseVersions    |

### **3.1.11 Stored Procedures**

Sybase also includes support for business policy via the use of stored procedures. Stored procedures are typically used to capture a set of activities or checks that will be performed on the database repeatedly to enforce business policy and maintain data integrity. Stored procedures are parsed and compiled SQL code that reside in the database and may be called by name by an application, trigger or another stored procedure. A listing of each the stored procedures in the SDSRV database follows.

| Name                           |
|--------------------------------|
| ProcAttributeConv              |
| ProcAttributeConvCount         |
| ProcBaseDependent              |
| ProcBaseDependentCount         |
| ProcBmgtGetBrowMetadata        |
| ProcBmgtGetDictionaryAttr      |
| ProcBmgtGetEsdAlgPkg           |
| ProcBmgtGetEsdAsscPlatInstSens |
| ProcBmgtGetEsdBrowGranXref     |
| ProcBmgtGetEsdBrowMetadata     |
| ProcBmgtGetEsdCollAddAttr      |
| ProcBmgtGetEsdCollBrowseXref   |
| ProcBmgtGetEsdCollDocURL       |
| ProcBmgtGetEsdCollMetadata     |
| ProcBmgtGetEsdCollPlatInstSens |
| ProcBmgtGetEsdCollVertSpatDomn |
| ProcBmgtGetEsdDiscKeywords     |
| ProcBmgtGetEsdGranAddAttr      |
| ProcBmgtGetEsdGranMetadata     |
| ProcBmgtGetEsdQaGranuleXref    |
| ProcBmgtGetEsdSSapComponent    |
| ProcBmgtGetEsdTemporal         |
| ProcBmgtGetGranSensChar        |
| ProcBmgtGetKeywordValids       |
| ProcBmgtGetOneBrowMetadata     |
| ProcBmgtGetOneCollMetadata     |
| ProcBmgtGetOneGranMetadata     |
| ProcBmgtGetValdMetadata        |
| ProcCheckDeleteStatus          |
| ProcCheckDeleteStatusBrowse    |
| ProcCheckDeleteStatusPh        |
| ProcCheckDeleteStatusQa        |
| ProcCheckDeleteStatusScience   |
| ProcCheckDeleted               |
| ProcCheckDsTMdTime             |
| ProcCheckDupeRpcID             |
| ProcCheckECSKeywordValids      |
| ProcCheckReferences            |
| ProcCheckReferencesBrowse      |
| ProcCheckReferencesPh          |
| ProcCheckReferencesQa          |

| Name                          |
|-------------------------------|
| ProcCheckReferencesScience    |
| ProcCleanAPGranules           |
| ProcCleanBRGranules           |
| ProcCleanCollection           |
| ProcCleanDAPGranules          |
| ProcCleanGranules             |
| ProcCleanPHGranules           |
| ProcCleanQAGranules           |
| ProcCleanSSAPCGranules        |
| ProcCleanSingleGranule        |
| ProcColdStart                 |
| ProcCommandConv               |
| ProcCommandConvCount          |
| ProcConvertDEM                |
| ProcConvertL1B                |
| ProcConvertLagTime            |
| ProcConvertTime               |
| ProcDelAcqBand                |
| ProcDelAcqPolygon             |
| ProcDelAcquireCmd             |
| ProcDelAcquireCmdFileInfo     |
| ProcDelCollGranuleXref        |
| ProcDelESDTConfiguredType     |
| ProcDelNotifierQueue          |
| ProcDelReqDomain              |
| ProcDelRequest                |
| ProcDeleteAcqBand             |
| ProcDeleteAcqCmd              |
| ProcDeleteAcqCmdFile          |
| ProcDeleteAcqPolygon          |
| ProcDeleteAlgorithmPackage    |
| ProcDeleteAncillaryInput      |
| ProcDeleteBoundingRectangle   |
| ProcDeleteBrowse              |
| ProcDeleteBrowseGranuleXref   |
| ProcDeleteCircle              |
| ProcDeleteDsSiRequest         |
| ProcDeleteEvent               |
| ProcDeleteFileStorage         |
| ProcDeleteFloatInfoContent    |
| ProcDeleteGranuleAnalysisXref |

| Name                          |
|-------------------------------|
| ProcDeleteGranuleCampaignXref |
| ProcDeleteGranuleInstrXref    |
| ProcDeleteGranuleLocality     |
| ProcDeleteGranulePlatformXref |
| ProcDeleteGranuleReview       |
| ProcDeleteGranuleSensorXref   |
| ProcDeleteGranules            |
| ProcDeleteInputGranule        |
| ProcDeleteIntegerInfoContent  |
| ProcDeleteL7ErrorHandling     |
| ProcDeleteL7GranuleMetaData   |
| ProcDeleteMeasuredParameter   |
| ProcDeleteNotifierQEntry      |
| ProcDeleteOrbitCalcSpatDomain |
| ProcDeleteOrbitCalcSpatial    |
| ProcDeletePhysicalFileStorage |
| ProcDeletePoint               |
| ProcDeletePolygon             |
| ProcDeleteProcHistory         |
| ProcDeleteProcessingQA        |
| ProcDeleteQaGranule           |
| ProcDeleteQaGranuleXref       |
| ProcDeleteReqDomain           |
| ProcDeleteRequest             |
| ProcDeleteRequests            |
| ProcDeleteSensorCharacter     |
| ProcDeleteStorageMedium       |
| ProcDeleteStringInfoContent   |
| ProcDeleteUninterpretedData   |
| ProcDeleteVertSpatialDomain   |
| ProcDeleteXAR                 |
| ProcDemergeL7GranuleMetaData  |
| ProcECSKeywordValidsInstalled |
| ProcEventNotifierQCleanUp     |
| ProcGetAPAssocColl            |
| ProcGetAPContactXref          |
| ProcGetAPFileStorage          |
| ProcGetAPSAPComponentXref     |
| ProcGetAccessPrivilege        |
| ProcGetAcqBand                |
| ProcGetAcqPolygon             |

| Name                        |
|-----------------------------|
| ProcGetAcquireCmd           |
| ProcGetAcquireCmdFileInfo   |
| ProcGetAdditionalAttributes |
| ProcGetAlgorithmPackage     |
| ProcGetAllCmdIDs            |
| ProcGetAllRequestIDs        |
| ProcGetAllTableNames        |
| ProcGetAltSysDef            |
| ProcGetAltitudeResolution   |
| ProcGetAnalysisSource       |
| ProcGetAnalysisSourceID     |
| ProcGetAncillaryInput       |
| ProcGetAssocGranules        |
| ProcGetAssocPlatInstrSensor |
| ProcGetAttrTable            |
| ProcGetAttrTableCnt         |
| ProcGetAttributeList        |
| ProcGetBrowseFileStorage    |
| ProcGetBrowseGranuleXref    |
| ProcGetBrowseMetadata       |
| ProcGetCSDTDescription      |
| ProcGetCampaign             |
| ProcGetCampaignID           |
| ProcGetCollAPXref           |
| ProcGetCollAddnlAttribsXref |
| ProcGetCollAnalysisXref     |
| ProcGetCollAssociation      |
| ProcGetCollBrowseXref       |
| ProcGetCollCampaignXref     |
| ProcGetCollContactXref      |
| ProcGetCollDiscXref         |
| ProcGetCollFloatInfoContent |
| ProcGetCollGranuleXref      |
| ProcGetCollInstrXref        |
| ProcGetCollIntInfoContent   |
| ProcGetCollPlatformXref     |
| ProcGetCollReview           |
| ProcGetCollSensorXref       |
| ProcGetCollStorageMedium    |
| ProcGetCollStrngInfoContent |
| ProcGetCollVertSpatialDomn  |

| Name                          |
|-------------------------------|
| ProcGetCollZoneIdentifier     |
| ProcGetCollectionContact      |
| ProcGetCollectionID           |
| ProcGetCollectionMetadata     |
| ProcGetContact                |
| ProcGetContactAddress         |
| ProcGetContactIDs             |
| ProcGetContactOrganizationID  |
| ProcGetContactOrgInfo         |
| ProcGetContactPersonID        |
| ProcGetContactPersonInfo      |
| ProcGetDataFileName           |
| ProcGetDAP                    |
| ProcGetDAPFileStorage         |
| ProcGetDepthResolution        |
| ProcGetDepthSysDef            |
| ProcGetDFADeletedGranules     |
| ProcGetDFALogicalDeleteCounts |
| ProcGetDictionaryAttribute    |
| ProcGetDictionaryContent      |
| ProcGetDictionaryRule         |
| ProcGetDisciplineKeywords     |
| ProcGetDisciTopParalD         |
| ProcGetDisconMulti            |
| ProcGetECSCollectionGuide     |
| ProcGetECSParameterKeywords   |
| ProcGetEmailAddress           |
| ProcGetESDTConfiguredType     |
| ProcGetEvent                  |
| ProcGetEventName              |
| ProcGetFileLocMetadata        |
| ProcGetFileStorage            |
| ProcGetGrAnalysisShortName    |
| ProcGetGranPHMetadata         |
| ProcGetGranReview             |
| ProcGetGranuleAnalysisXref    |
| ProcGetGranuleCampaignXref    |
| ProcGetGranuleLocality        |
| ProcGetGranuleMetadata        |
| ProcGetGranuleVersions        |
| ProcGetGrCampaignShortName    |

| Name                          |
|-------------------------------|
| ProcGetGrFloatInfoContent     |
| ProcGetGrInstrumentXref       |
| ProcGetGrIntInfoContent       |
| ProcGetGrLastUpdate           |
| ProcGetGrPlatformXref         |
| ProcGetGrQaRef                |
| ProcGetGrSensorCharacteristic |
| ProcGetGrSensorXref           |
| ProcGetGrStorageMedium        |
| ProcGetGrStringInfoContent    |
| ProcGetGrVerticalSpatialDom   |
| ProcGetInputGranule           |
| ProcGetInsertSequence         |
| ProcGetInstrument             |
| ProcGetInstrumentChar         |
| ProcGetInstrumentID           |
| ProcGetJoins                  |
| ProcGetLimitedMetadata        |
| ProcGetLocality               |
| ProcGetMeasuredParameter      |
| ProcGetMiscInformation        |
| ProcGetMultiDateTime          |
| ProcGetNextCmdID              |
| ProcGetNotifierQEntry         |
| ProcGetMultTypeCollection     |
| ProcGetOneESDTConfiguredType  |
| ProcGetOperationMode          |
| ProcGetOrbitCalcSpatialDom    |
| ProcGetOrbitCalculatedSpatial |
| ProcGetParmToTableVector      |
| ProcGetPersonOrgXref          |
| ProcGetPGEGroup               |
| ProcGetPHFileStorage          |
| ProcGetPlanCoor               |
| ProcGetPlatform               |
| ProcGetPlatformChar           |
| ProcGetPlatformID             |
| ProcGetPlatInstCode           |
| ProcGetProcessingHistory      |
| ProcGetProcessingQA           |
| ProcGetProdSpecType           |

| Name                           |
|--------------------------------|
| ProcGetProductDbXref           |
| ProcGetQaGranule               |
| ProcGetQaFileStorage           |
| ProcGetQaGranuleXref           |
| ProcGetQualityTextComment      |
| ProcGetRangeDateTime           |
| ProcGetRegPeriodic             |
| ProcGetReqDomain               |
| ProcGetRequest                 |
| ProcGetSDSRVLookup             |
| ProcGetSensor                  |
| ProcGetSensorCharacteristic    |
| ProcGetSensorID                |
| ProcGetSingleDateTime          |
| ProcGetSingleDateTimeInMultPd  |
| ProcGetSpatial                 |
| ProcGetSpatialKeyword          |
| ProcGetSSAPComponent           |
| ProcGetSSAPComponentAPVersion  |
| ProcGetSSAPFileStorage         |
| ProcGetStagingGranules         |
| ProcGetTelephoneNumbers        |
| ProcGetTemporal                |
| ProcGetTemporalKeyword         |
| ProcGetTemporalSize            |
| ProcGetUninterpretedData       |
| ProcGetUniqueID                |
| ProcGetUniqueIDOutput          |
| ProcGetUniqueIDString          |
| Proc GetUserCommentDocument    |
| ProcGetValidationDocument      |
| ProcGetXAR                     |
| ProcHDeleteAlgorithmPackage    |
| ProcHDeleteAltitudeResolution  |
| ProcHDeleteAnalysisSource      |
| ProcHDeleteAncillaryInput      |
| ProcHDeleteAPFileStorage       |
| ProcHDeleteBrBrowseGranuleXref |
| ProcHDeleteBrowse              |
| ProcHDeleteBRFileStorage       |
| ProcHDeleteBrowseGranuleXref   |

| Name                           |
|--------------------------------|
| ProcHDeleteCSDTDescription     |
| ProcHDeleteCampaign            |
| ProcHDeleteCollFloatInfoCont   |
| ProcHDeleteCollectionAPXref    |
| ProcHDeleteCollIntegerInfoCont |
| ProcHDeleteCollReview          |
| ProcHDeleteCollStorageMedium   |
| ProcHDeleteCollStringInfoCont  |
| ProcHDeleteCollGranuleXref     |
| ProcHDeleteCollVertSpatlDomn   |
| ProcHDeleteCollZoneIdentifier  |
| ProcHDeleteCollectionAssn      |
| ProcHDeleteContact             |
| ProcHDeleteContactAddress      |
| ProcHDeleteContactOrg          |
| ProcHDeleteContactPersons      |
| ProcHDeleteDAP                 |
| ProcHDeleteDAPFileStorage      |
| ProcHDeleteDepthResolution     |
| ProcHDeleteDisciplineKeywords  |
| ProcHDeleteEmailAddress        |
| ProcHDeleteECSParmKeyword      |
| ProcHDeleteESDTConfiguredType  |
| ProcHDeleteFileStorage         |
| ProcHDeleteGranuleAnalisisXref |
| ProcHDeleteGranuleCampgnXref   |
| ProcHDeleteGranuleInstrXref    |
| ProcHDeleteGranuleLocality     |
| ProcHDeleteGranulePlatfrmXref  |
| ProcHDeleteGranuleReview       |
| ProcHDeleteGranules            |
| ProcHDeleteGranuleSensorXref   |
| ProcHDeleteGranuleVersions     |
| ProcHDeleteGrFloatInfoContent  |
| ProcHDeleteGrIntlInfoContent   |
| ProcHDeleteGrSensorCharistics  |
| ProcHDeleteGrStorageMedium     |
| ProcHDeleteGrStringInfoContent |
| ProcHDeleteGrVertSpatlDomn     |
| ProcHDeleteInputGranule        |
| ProcHDeleteInstrument          |

| Name                               |
|------------------------------------|
| ProcHDeleteInstrumentChar          |
| ProcHDeleteLocality                |
| ProcHDeleteMeasuredParameter       |
| ProcHDeleteMultiDateTimePd         |
| ProcHDeleteOperationMode           |
| ProcHDeleteOrbitCalcSpatial        |
| ProcHDeleteOrbitCalcSpatlDomn      |
| ProcHDeleteOrbitPolygons           |
| ProcHDeletePersonOrgXref           |
| ProcHDeletePGEGroup                |
| ProcHDeletePHFileStorage           |
| ProcHDeletePlanarCoordSys          |
| ProcHDeletePlatform                |
| ProcHDeletePlatformChar            |
| ProcHDeletePlatInstrCode           |
| ProcHDeleteProcessingHistory       |
| ProcHDeleteProcessingQA            |
| ProcHDeleteProdSpecific            |
| ProcHDeleteQAFileStorage           |
| ProcHDeleteQaGranule               |
| ProcHDeleteQaGranuleXref           |
| ProcHDeleteQaQualityGranuleXref    |
| ProcHDeleteQualityTextComment      |
| ProcHDeleteRangeDateTime           |
| ProcHDeleteRegularPeriodic         |
| ProcHDeleteSensor                  |
| ProcHDeleteSensorChar              |
| ProcHDeleteSingleDateTime          |
| ProcHDeleteSpatial                 |
| ProcHDeleteSpatialKeyword          |
| ProcHDeleteSpatialMetadata         |
| ProcHDeleteSSAPComponent           |
| ProcHDeleteSSAPComponentAPVer      |
| ProcHDeleteSSAPFileStorage         |
| ProcHDeleteTelephoneNumber         |
| ProcHDeleteTemporal                |
| ProcHDeleteTemporalKeyword         |
| ProcHDeleteTemporalMetaDataAdapter |
| ProcHDeleteUninterpretedData       |
| ProcHDeleteUserCommentDocument     |
| ProcHDeleteValidationDocument      |

| Name                           |
|--------------------------------|
| ProcHDeleteXAR                 |
| ProcHdDelSSAPCompAPVersion     |
| ProcInsertAdditionalAttributes |
| ProcInsertAlgorithmPackage     |
| ProcInsertAltitudeResolution   |
| ProcInsertAnalysisSource       |
| ProcInsertAncillaryInput       |
| ProcInsertAPAssocColl          |
| ProcInsertAPContactXref        |
| ProcInsertAPFileStorage        |
| ProcInsertAPSAPComponentXref   |
| ProcInsertAcqBand              |
| ProcInsertAssocPlatInstrSensor |
| ProcInsertBRFileStorage        |
| ProcInsertBrBrowseGranuleXref  |
| ProcInsertBrowse               |
| ProcInsertBrowseGranuleXref    |
| ProcInsertCampaign             |
| ProcInsertCIDiscplnKeyrdXref   |
| ProcInsertCIProdSpecific       |
| ProcInsertAcqPolygon           |
| ProcInsertAcquireCmd           |
| ProcInsertAcquireCmdFileInfo   |
| ProcInsertCollAddnlAttrbs      |
| ProcInsertCollAddnlAttrbsXref  |
| ProcInsertCollAnalysisXref     |
| ProcInsertCollAPXref           |
| ProcInsertCollAssociation      |
| ProcInsertCollBrowseXref       |
| ProcInsertCollCampaignXref     |
| ProcInsertCollContactXref      |
| ProcInsertCollections          |
| ProcInsertCollFloatInfoContent |
| ProcInsertCollGranuleXref      |
| ProcInsertCollInstrXref        |
| ProcInsertCollIntInfoContent   |
| ProcInsertCollPlatformXref     |
| ProcInsertCollReview           |
| ProcInsertCollSensorXref       |
| ProcInsertCollStorageMedium    |
| ProcInsertCollStrngInfoContent |

| Name                          |
|-------------------------------|
| ProInsertCollVertSpatialDomn  |
| ProInsertCollURLInfo          |
| ProInsertCollZoneIdentifier   |
| ProInsertContact              |
| ProInsertContactAddress       |
| ProInsertContactOrganizations |
| ProInsertContactPersons       |
| ProInsertCSDTDescription      |
| ProInsertDAP                  |
| ProInsertDAPFileStorage       |
| ProInsertDepthResolution      |
| ProInsertDictionaryAttribute  |
| ProInsertDictionaryContent    |
| ProInsertDictionaryRule       |
| ProInsertDisciplineKeywords   |
| ProInsertDiscontMulti         |
| ProInsertECSParameterKeywords |
| ProInsertEmailAddress         |
| ProInsertESDTConfiguredType   |
| ProInsertEvent                |
| ProInsertFileStorage          |
| ProInsertGranuleAnalysisXref  |
| ProInsertGranuleCampaignXref  |
| ProInsertGranuleInstrmntXref  |
| ProInsertGranuleLocality      |
| ProInsertGranulePlatformXref  |
| ProInsertGranuleReview        |
| ProInsertGranules             |
| ProInsertGranuleSensorXref    |
| ProInsertGranuleVersions      |
| ProInsertGrFloatInfoContent   |
| ProInsertGrIntInfoContent     |
| ProInsertGrProdSpecific       |
| ProInsertGrSensCharacticric   |
| ProInsertGrStorageMedium      |
| ProInsertGrStringInfoContent  |
| ProInsertInputGranule         |
| ProInsertInstrument           |
| ProInsertInstrumentChar       |
| ProInsertL7ErrorHandling      |
| ProInsertLocality             |

| Name                          |
|-------------------------------|
| ProInsertMeasuredParameter    |
| ProInsertMultiDateTime        |
| ProInsertMultiTypeCollection  |
| ProInsertNotifierQEntry       |
| ProInsertOperationMode        |
| ProInsertOrbitCalcSpatial     |
| ProInsertOrbitCalcSpatialDom  |
| ProInsertParmToTableVector    |
| ProInsertPersonOrgXref        |
| ProInsertPGEGroup             |
| ProInsertPHFileStorage        |
| ProInsertPhysicalParameters   |
| ProInsertPlanarCoordSys       |
| ProInsertPlatform             |
| ProInsertPlatformChar         |
| ProInsertPlatInstCode         |
| ProInsertProcessingHistory    |
| ProInsertProcessingQA         |
| ProInsertQAFileStorage        |
| ProInsertQaGranule            |
| ProInsertQaGranuleXref        |
| ProInsertQaQualityGranuleXref |
| ProInsertQualityTextComment   |
| ProInsertRangeDateTime        |
| ProInsertRegPeriodic          |
| ProInsertReqDomain            |
| ProInsertRequest              |
| ProInsertSensor               |
| ProInsertSensorCharacteristic |
| ProInsertSequenceCount        |
| ProInsertSingleDateTime       |
| ProInsertSingleDateTimeInMPd  |
| ProInsertSpatial              |
| ProInsertSpatialCoord         |
| ProInsertSpatialKeyword       |
| ProInsertSSAPComponent        |
| ProInsertSSAPComponentAPVer   |
| ProInsertSSAPFileStorage      |
| ProInsertTelephoneNumbers     |
| ProInsertTemporal             |
| ProInsertTemporalKeyword      |

| Name                            |
|---------------------------------|
| ProcInsertUninterpretedData     |
| ProcInsertUserCommentDocument   |
| ProcInsertValidationDocument    |
| ProcInsertVertSpatialDomain     |
| ProcInsertXAR                   |
| ProcKeyDependency               |
| ProcKeyDependencyCount          |
| ProcLock                        |
| ProcLogDeleteNotifierQEntry     |
| ProcMergeL7GranuleMetaDataTable |
| ProcMoveESDTGranules            |
| ProcNullInputPointerCleanup     |
| ProcNumOfObjects                |
| ProcOperatorConv                |
| ProcOperatorConvCount           |
| ProcPhysicalDelete              |
| ProcPhysicalDeleteBrowse        |
| ProcPhysicalDeleteGranules      |
| ProcPhysicalDeletePH            |
| ProcPhysicalDeleteQA            |
| ProcProcessAssociateLDelete     |
| ProcProcessBRDFALogicalDelete   |
| ProcProcessPHDFALogicalDelete   |
| ProcProcessQADFALogicalDelete   |
| ProcProcessSCDFA                |
| ProcProcessSCDFALogicalDelete   |
| ProcProcessSCLogicalDelete      |
| ProcPromoteL7GranuleMetadata    |
| ProcRemoveRequestBetweenTime    |
| ProcRemoveRequestByTime         |
| ProcRmStagingFmDeleted          |
| ProcSetESDTState                |
| ProcSiRequestCleanup            |
| ProcUnloadList                  |
| ProcUnloadListCount             |
| ProcUpdateAdditionalAttr        |
| ProcUpdateAlgorithmPackage      |
| ProcUpdateAnalysisSource        |
| ProcUpdateBrowse                |
| ProcUpdateCampaign              |
| ProcUpdateCollections           |

| Name                          |
|-------------------------------|
| ProcUpdateContactOrg          |
| ProcUpdateContactPersons      |
| ProcUpdateDAP                 |
| ProcUpdateDLLFileName         |
| ProcUpdateDisciplineKeywords  |
| ProcUpdateESDTConfiguredType  |
| ProcUpdateGranules            |
| ProcUpdateInstrument          |
| ProcUpdatePlatform            |
| ProcUpdateProcHistLink        |
| ProcUpdateProcessingHistory   |
| ProcUpdateQAGranules          |
| ProcUpdateReqState            |
| ProcUpdateSSAPComponent       |
| ProcUpdateSensor              |
| ProcUpdateSequence            |
| ProcUpdateSequenceCount       |
| ProcUpdateSpatialSearchType   |
| ProcUpdateUnlinkProcHistLink  |
| ProcUpdLglDelAlgorithmPackage |
| ProcUpdLglDelBrowseMetadata   |
| ProcUpdLglDelFileStorage      |
| ProcUpdLglDelGranuleMetadata  |
| ProcUpdLglDelProcHistory      |
| ProcUpdLglDelQaGranule        |
| ProcUpdUndelAlgorithmPackage  |
| ProcUpdUndelBrowseMetadata    |
| ProcUpdUndelFileStorage       |
| ProcUpdUndelGranuleMetadata   |
| ProcUpdUndelProcHistory       |
| ProcUpdUndelQaGranule         |
| ProcUnLock                    |
| datawarning                   |
| logdump                       |
| logwarning                    |

## 3.2 Flat File Usage

A flat file is an operating system file that is written and subsequently read, generally independent of other files that exist, and usually static in nature. There are cases when the implementation of persistent data is better suited to a flat file than to a database (e.g., system configuration data, external interface data). SDSRV Subsystem file usage is detailed in this section via file, block, field, and domain definitions.

### 3.2.1 Files Descriptions

A summary listing of the files in the SDSRV Subsystem is given in Table 3-149 together with a brief description of the file usage. Many different record formats are used in ECS including ODL, HDF, HDF EOS, block, fixed length, variable length, etc.

**Table 3-149 Flat File Descriptions (1 of 3)**

| File Name  | File Type      | Record Format   | File Description  |
|--|----------------|-----------------|---|
| EcDsScienceDataServer.ALOG.CCYYMMDDHHMMSS<br>(where CC=century, YY=year, MM=month, DD=day, HH=hour, MM=minutes, SS=seconds. All 2 digit integers). | Unix flat file | variable length | Main Science Data Server output log file. Contains informational, warning, and error messages. Each message has a date and time stamp.<br>Always produced   |
| EcDsScienceDataServerDebug.log.CCYYMMDDHHMMSS  | Unix flat file | variable length | Optional debug log file. Setup in Science Data Server configuration file.<br>Contains messages showing server activity at key points in processing. Includes executed SQL, DCE information , streamed metadata. |
| EcDsScienceDataServer.ACFTG  | Unix flat file | variable length | Science Data Server Application Configuration Metrics file. Describes installation configuration information.   |
| EcDsScienceDataServer.CFG  | Unix flat file | variable length | Science Data Server runtime configuration file. Contains configurable information needed at system start-up for both COTS and custom software.  |
| EcDsScienceDataServer.PCFG   | Unix flat file | variable length | Science Data Server Program Configuration file. Contains Program configuration metrics and process performance metrics configuration data.  |
| EcDsScienceDataServerClient.CFG  | Unix flat file | variable length | Science Data Server Client configuration file.  |

**Table 3-149. Flat File Descriptions (2 of 3)**

| File Name  | File Type      | Record Format   | File Description  |
|--|----------------|-----------------|---|
| EcDsSdSrvGui.CFG   | Unix flat file | Variable length | Science Data Server GUI utility configuration file.   |
| EcDsCIMuQaMetadataUpdate.CFG   | Unix flat file | Variable length | Science Data Server QA metadata update utility configuration file.  |
| EcDsGranuleDelete.CFG  | Unix flat file | Variable length | Science Data Server granule delete utility configuration file.  |
| EcDsSCLI.CFG   | Unix flat file | Variable length | Science Data Server Command Line Interface configuration file.  |
| EcDsHdfEosServer_<N>.ALOG.<br>CCYYMMDDHHMMSS<br>(where CC=century, YY=year,<br>MM=month, DD=day,<br>HH=hour, MM=minutes, SS=seconds.<br>All 2 digit integers). | Unix flat file | variable length | Main HDF EOS Server output log file. Contains informational, warning, and error messages. Each message has a date and time stamp. There may be multiple HDF EOS Servers configured and each one has its own log file.<br>Always produced    |
| EcDsHdfEosServer_<N>Debug.log.CC<br>YYMMDDHHMMSS   | Unix flat file | variable length | Optional debug log file. Setup in Hdf Eos Server configuration file.<br>Contains messages showing server activity at key points in processing. There may be multiple HDF EOS Servers configured and each one has its own log file.          |
| EcDsHdfEosServer_<N>.CFG   | Unix flat file | Variable length | Hdf Eos Server runtime configuration file. Contains configurable information needed at system start-up for both COTS and custom software. There may be multiple HDF EOS Servers configured and each one has its own configuration file.     |
| EcDsHdfEosServer_<N>.PCFG  | Unix flat file | Variable length | Hdf Eos Server Program Configuration file. Contains Program configuration metrics and process performance metrics configuration data. There may be multiple HDF EOS Servers configured and each one has its own program configuration file. |
| DsESDTCollectionTemplate.desc  | Unix flat file | Variable length | Used to validate ESDTs upon installation. Descriptor Template.  |

**Table 3-149. Flat File Descriptions (3 of 3)**

| File Name   | File Type   | Record Format              | File Description   |
|---|---|----------------------------|--|
| DsESDT<sub-dir name><Shortname>.<VersionID>.desc<br>(sub-dir is name of subdirectory used to store Descriptors) | Unix flat file  | Variable length            | Uniquely named ESDT file descriptors. Describe collection level metadata for SDSRV installation.   |
| LibDsESDT<sub-dir name><ShortName>.<VersionID>Sh.so   | ELF 32-bit<br>MSB<br>dynamic lib<br>SPARC<br>Version 1,<br>dynamically linked | Dynamic Link Library (DLL) | Provides generic to ESDT specific processing capability to SDSRV. These Dynamic Linked Libraries (DLLs) are dynamically linked into the Data Server on an as needed basis. |

### 3.2.2 Block Specifications

Table 3-150 contains brief definitions of each of the flat file block descriptions.

**Table 3-150. Flat File Block Descriptions (1 of 4)**

| File Name                                      | Block Name             | Block Description  |
|--|------------------------|--|
| EcDsScienceDataServer.ALOG.CCYYMMDDHHMMSS      | N/A                    | N/A  |
| EcDsScienceDataServer Debug.log.CCYYMMDDHHMMSS | N/A                    | N/A  |
| EcDsScienceDataServer.ACFCG                    | APPLICATION<br>PROGRAM | Denotes Application level parameters.<br>Denotes Program level parameters. |

**Table 3-150. Flat File Block Descriptions (2 of 4)**

| File Name                        | Block Name  | Block Description   |
|----------------------------------|---|---|
| EcDsScienceDataServer.CFG        | General Attributes                                      | SDSRV general description data.                                 |
|                                  | DCE Related Attributes                                  | Describes SDSRV's relationship to DCE.                          |
|                                  | Security Attributes                                     | Contains SDSRV's ACL profile                                    |
|                                  | Security Database Attributes                            | Contains ACL Database information                               |
|                                  | Server Request Framework and Message Passing Attributes | Server Request Framework (SRF) and Message Passing information. |
|                                  | DDIST Server Info                                       | Data Distribution Server information                            |
|                                  | HDF Server Info   | HDF EOS Server information                                      |
| EcDsScienceDataServer.PCFG       | DSSSrEnv  | Environment variables used by the SDSRV.<br>Sourced at start-up |
|                                  | CSS_MP  | Server specific parameters for the MSS Deputy Agent.            |
|                                  | APPLICATION   | SNMP parameters.  |
|                                  | PROGRAM   | MSS configuration metrics.                                      |
| EcDsScienceDataServer Client.CFG | PROCESS   | MSS performance metrics.  |
|                                  | N/A   | N/A   |
|                                  | N/A   | N/A   |
|                                  | N/A   | N/A   |
| EcDsGranuleDelete.CFG            | N/A   | N/A   |
| EcDsSCLI.CFG                     | N/A   | N/A   |

**Table 3-150. Flat File Block Descriptions (3 of 4)**

| File Name   | Block Name   | Block Description   |
|---|--|---|
| EcDsHdfEosServer_<N>.ALOG.CCYYMMDDHHMMSS<br>(where CC=century, YY=year, MM=month, DD=day, HH=hour, MM=minutes, SS=seconds. All 2 digit integers). | N/A  | N/A   |
| EcDsHdfEosServer_<N>Debug.log.CCYYMMDDHHMMSS  | N/A  | N/A   |
| EcDsHdfEosServer_<N>.CFG  | General Attributes<br>Dce Related Attributes<br>Security Attributes<br>Security Database Attributes<br>Server Request Framework and Message Passing Attributes<br>DSSHrEnv | HDFEOS Server general description data.<br>Describes HDF EOS Server's relationship to DCE.<br>Contains HDF EOS Server's ACL profile.<br>Contains ACL Database information.<br>Server Request Framework (SRF) and Message Passing information.<br>Environment variables used by the HDF EOS Server. Sourced at start-up. |
| EcDsHdfEosServer_<N>.PCFG   | CSS_MP<br>APPLICATION<br>PROGRAM<br>PROCESS  | Server specific parameters for the MSS Deputy Agent.<br>SNMP parameters<br>MSS configuration metrics.<br>MSS performance metrics.   |
| DsESDTCollectionTemp<br>late.desc   | N/A  | N/A   |

**Table 3-150. Flat File Block Descriptions (4 of 4)**

| File Name   | Block Name | Block Description |
|---|------------|-------------------|
| DsESDT<sub-dir name><Shortname>.<VersionID>.desc<br>(sub-dir is name of subdirectory used to store Descriptors) | N/A        | N/A               |
| libDsESDT<sub-dir name><ShortName>.<VersionID>Sh.so   | N/A        | N/A               |

### **3.2.3 Field Specifications**

Brief specifications of the fields present within the SDSRV Subsystem flat files are contained in Table 3-151.

**Table 3-151 Flat File Field Specifications**

| File Name/Block Name                          | Field Name        | Data Type     | Field Description  |
|---|-------------------|---------------|--|
| EcDsScienceDataServer.ALOG.CCYYMMDDHHMMSS     |                   |               |  |
| EcDsScienceDataServerDebug.log.CCYYMMDDHHMMSS |                   |               |  |
| EcDsScienceDataServer.ACFCG/APPLICATION       | MsAg_ID           | Quoted string | Application ID. Value - 4000000  |
|   | MsAg_Name         | Quoted string | Application Name. Value - EcDsScienceDataServer                                |
|   | MsAg_MajorVersion | Quoted string | Application Major Version. Value - 1   |
|   | MsAg_MinorVersion | Quoted string | Application Minor Version. Value - 0   |
|   | MsAg_Revision     | Quoted string | Application Revision Number. Value - 0   |
|   | MsAg_MaintLevel   | Quoted string | Application Maintenance Level. Value - 0                                       |
|   | MsAg_Type         | Quoted string | Application Type. Value - custom   |
|   | MsAg_Contact      | Quoted string | Application primary contact. Value - DSS lead                                  |
|   | MsAg_Language     | Quoted string | Application language. Value - English  |
|   | MsAg_ExecPath     | Quoted string | Path to script that starts application. Value /usr/ecs/<MODE>/CUSTOM/utilities |
|   | MsAg_ExecFile     | Quoted string | Script to start application. Value - EcDsScienceDataServerAppStart <MODE>      |
|   | MsAg_LogMaxSize   | Quoted string | Maximum application log file size in bytes. Value – 1000000                    |

**Table 3-151. Flat File Field Specifications (cont.)**

| File Name/Block Name                         | Field Name  | Data Type  | Field Description  |
|--|---|--|--|
|  | MsAg_LogLevel<br>MsAg_SubSystem<br>MsAg_MssEventLevel<br>MsAg_RetrySleep_sec<br>MsAg_InstallTime<br>MsAg_LogPath<br>MsAg_LogFile<br>MsAg_NumOfProgs | Quoted string<br>Quoted string<br>Quoted string<br>Quoted string<br>Quoted string<br>Quoted string<br>Quoted string<br>Quoted string | Application Log Level. Value - 0<br>Application Subsystem name. Value - DSS<br>Mss Event Level. Value - 2<br>Number of seconds to sleep in between retrying to connect to the EcMsAgSubAgent server. Value – 86400<br>Mode install time. Value - <Date><br>Path to log file. Value /usr/ecs//<MODE>/CUSTOM/logs<br>Log File name. Value - EcDsScienceDataServer.ALOG<br>Number of Programs in Application. Value - 2 |
| EcDsScienceDataServer.ACFT/PROGRAM           | Community<br>PeerName   | String<br>Quoted string  | Scope of Application. Value - public<br>Peer Name. Value cyclops.hitc.com  |
| EcDsScienceDataServer.CFG/General Attributes | Name<br>ProgramID<br>ApplicationID<br>Site  | String<br>Integer<br>Integer<br>String   | Name of the SDSRV executable. Value - EcDsScienceDataServer<br>ECS program identifier of the EcDsScienceDataServer. Value - 4000000<br>ECS application Identifier for the SDSRV application. Value - 4000000<br>Name of the DAAC site. Value - GSFC.   |

**Table 3-151. Flat File Field Specifications (cont.)**

| File Name/Block Name                             | Field Name        | Data Type | Field Description   |
|--|-------------------|-----------|---|
|  | SubSysName        | String    | ECS subsystem name. Value - DSS (Data Server Subsystem).                      |
|  | MajorVersion      | Integer   | Major version number of the software release. Value – 1                       |
|  | MinorVersion      | Integer   | Minor version number of the software release. Value – 0                       |
|  | AppLogSize        | Integer   | Application log size in number of bytes. Value - 1000000                      |
|  | AppLogLevel       | Integer   | Application logging level. Value is 0, 1, or 2.                               |
|  | DebugLevel        | Integer   | Debug logging level. Value is 0, 1, 2, or 3.                                  |
|  | Release           | string    | ECS release identifier. Value – B   |
| EcDsScienceDataServer.CFG/DCE Related Attributes | ServerShortName   | String    | SDSRV DCE name. Value - EcDsScienceDataServer.                                |
|  | GroupName_1       | String    | DCE groupname 1. Value - EcDsScienceDataServerG1.                             |
|  | GroupName_2       | String    | DCE groupname 2. Value - EcDsScienceDataServerG2.                             |
|  | GroupName_3       | String    | DCE groupname 3. Value - EcDsScienceDataServerG3.                             |
|  | GroupName_4       | String    | DCE groupname 4. Value – EcDsScienceDataServerG4.                             |
|  | ProfileName       | String    | Profile Name. Value – EcDsScienceDataServer                                   |
|  | HostPolicy        | String    | Host Policy. Value - multiple.  |
|  | ServerDescription | String    | Server description. Value - This is the EcDsScienceDataServer (Mode: <MODE>). |
|  | NumOfInterfaces   | Integer   | Number of interfaces. Value - 4.  |

**Table 3-151. Flat File Field Specifications (cont.)**

| File Name/Block Name                          | Field Name                       | Data Type | Field Description   |
|---|----------------------------------|-----------|---|
|   | oid1_EcDsScienceDataServer<MODE> | String    | Value - <uuid>  |
|   | oid2_EcDsScienceDataServer<MODE> | String    | Value - <uuid>  |
|   | oid3_EcDsScienceDataServer<MODE> | String    | Value - <uuid>  |
|   | oid4_EcDsScienceDataServer<MODE> | String    | Value - <uuid>  |
|   | oid_EcAgManagaer_<MODE>          | String    | Value - <uuid>  |
|   | ListenThreads                    | Integer   | Number of listen threads. Value - 75.   |
|   | Protocol                         | string    | Communications Protocol. Values - TCP/IP, UDP, TCP/IP UDP, Null.  |
| EcDsScienceDataServer.CFG/Security Attributes | KeyFile                          | String    | Unix path and filename for the EcDsScienceDataServer.Keyfile. Value - CUSTOM/security/EcDsScienceData Server.Keyfile      |
|   | PrincipalName                    | String    | Server Principal Name. Value - EcDsScienceDataServer.   |
|   | AclDBName                        | String    | Sybase database name of the appropriate ACL database. Value b_MsgPsngDB_acl. Currently, this parameter is not being used. |
|   | AppStrtNum                       | integer   | Application Start Number. Value - 12345.  |

**Table 3-151. Flat File Field Specifications (cont.)**

| File Name/Block Name  | Field Name      | Data Type | Field Description   |
|---|-----------------|-----------|---|
| EcDsScienceDataServer.CFG/Security Database Attributes                            | DBAclKey        | String    | Currently, this parameter is not being used. Value - PfAclKey.  |
|   | DBLibrary       | String    | Symbolic name of the database client library for RogueWave DBTools. Currently, this parameter is not being used. Value - Sybase_CT. |
|   | DBServer        | String    | Sybase SQL server name for the ACL database. Currently, this parameter is not being used. Value - OTIS_SERVER.                      |
|   | DBLoginName     | String    | Sybase login name for ACL processing. Currently, this parameter is not being used. Value - acluser.                                 |
|   | DBPassword      | String    | Sybase login password for ACL processing. Currently, this parameter is not being used.  |
|   | DBName          | String    | Sybase database name of the ACL database. Currently, this parameter is not being used. Value - EcsAclStorage.                       |
|   | UpdateAclTime   | integer   | How often (in seconds) updates to the ACL information are processed. Value - 3600.  |
| EcDsScienceDataServer.CFG/Server Request Framework And Message Passing Attributes | SRFlag          | String    | Turns Server Request Framework(SRF) on or off. Value - no.  |
|   | Messpassflag    | String    | Turns Message Passing on or off. Value – no.  |
|   | RecUuid         | String    | UUID needed for SRF.  |
|   | RecLogFileName  | String    | Name of file used to persist received message passing data. Value - b_Rec.  |
|   | SendLogFileName | String    | Name of file used to persist sending message passing data. If not set there will be no persistence for                              |

**Table 3-151. Flat File Field Specifications (cont.)**

| File Name/Block Name                               | Field Name     | Data Type     | Field Description  |
|--|----------------|---------------|--|
|  | NbrofFTPTThr   | Integer       | message passing. Value - b_Send.<br>Number of FTP threads used by the application.<br>Value - Between 1 and 30.  |
|  | FTPFileName    | string        | Determines persistence with FTP.<br>Value - ftpfilename.   |
| EcDsScienceDataServer.CFG/DDIST Server Information | DDISTGroupName | string        | Data Distribution Server info. Value - EcDsDistributionServer.   |
| EcDsScienceDataServer.CFG/DSSSr Env                | DSSSrEnv1      |               | This is a group environment variable containing<br>the following environment variables:<br>DSSCONFIG, DSSDLLDIR,<br>DSSSDSRV, DSSSBSRV,<br>DSSEVSRV, DSSDESCDIR,<br>DSSDLLINPUTDIR,<br>DSSDESCINPUTDIR,<br>SDSRV_TEMP_DIR. |
|  | DSSCONFIG      | Quoted string | Not Used   |
|  | DSSDLLDIR      | String        | Directory where Science Data Server installs the DLLs. Value /usr/ecs/<MODE>/CUSTOM/lib/DSS  |
|  | DSSSDSRV       | String        | Server UR for Science Data Server. This parameter is configurable.<br>Default Value – [MDC:DSSSDSRV]   |
|  | DSSSBSRV       | String        | Server UR for Subscription Server. Value –<br>UR:12:EcUrServerUr[:CSSBSRV]   |
|  | DSSEVSRV       | String        | Server UR for Event Server. Value –<br>UR:12:EcUrServerUr[:CSEVSRV]  |
|  | DSSDESCDIR     | String        | Directory where Science Data Server installs the descriptors.<br>Value<br>/usr/ecs/<MODE>/CUSTOM/cfg/DsE SDTDesc   |
|  |                | String        |  |

**Table 3-151. Flat File Field Specifications (cont.)**

| File Name/Block Name               | Field Name   | Data Type            | Field Description  |
|------------------------------------|--|----------------------|--|
|                                    | DSSDLLINPUTDIR<br><br>DSSDESCINPUTDIR<br><br>SDSRV_TEMP_DIR  | String<br><br>string | Directory where Science Data Server will get the DLLs for installation. This directory is configurable. Default Value - /usr/ecs/<MODE>/CUSTOM/lib/ESS<br><br>Directory where Science Data Server will get the descriptors for installation. This directory is configurable. Default Value - /usr/ecs/<MODE>/CUSTOM/data/ESS<br><br>Directory where Science Data Server will create temporary files. Value /usr/ecs/<MODE>/CUSTOM/temp/DSS   |
| EcDsScienceDataServer.CFG/DSSSrEnv | DSSSrEnv2<br><br>DSSATTRFILE<br><br>DSSCONTFILE<br><br>DSSSTMGSTAGEINGSERVERUR<br><br>SDSRV_LOCAL_STAGING_DISK |                      | This is a group environment variable containing the following environment variables:<br><br>DSSATTRFILE, DSSCONTFILE, DSSSTMGSTAGEINGSERVERUR, SDSRV_LOCAL_STAGING_DISK, DSSHouldADvertise, DSSNoStageDisk, DSSNoArchive, URDDict, SDSRV_ModeDDict.<br><br>Not used<br><br>Not used<br><br>Server Key for the Staging Disk Server. This parameter is configurable. Default Value – SGI_<MODE><br><br>Server Key for the Local Staging Disk Server. This Staging Disk Server is used for subsetting. This parameter is configurable. Default Value – SGI_<MODE> |

**Table 3-151. Flat File Field Specifications (cont.)**

| File Name/Block Name               | Field Name  | Data Type   | Field Description  |
|------------------------------------|---|---|--|
|                                    | DSSHOULDADVERSTISE<br><br>DSSNOSTAGINGDISK<br><br>DSSNOARCHIVE<br><br>URDDICT<br><br>SDSRV_MODEDICT | Integer<br><br>String<br><br>String<br><br>String<br><br>string | Turns the interface to the Advertising Server, Data Dictionary, and Subscription Server on and off to allow for the independent testing of ESDT Installation. It should be set to 0 to turn off. Value – 1<br><br>Turns the interface to the Staging Disk Server on and off. If this is set to a value, the interface to the Staging Disk will be turned off.<br><br>Turns the interface to the Archive Server on and off. If this is set to a value, the interface to the Archive Server will be turned off.<br><br>Server UR of the Data Dictionary Server. Value – UR:12:EcUrServerUr[:DMDDICT]<br><br>Mode of the Data Dictionary Server. Value - <MODE> |
| EcDsScienceDataServer.CFG/DSSSrEnv | DSSSrEnv3<br><br>DSSMEMORYMONITORLOWSETPOINT<br><br>DSSMEMORYMONITORVERYLOWSETPOINT                 |   | This is a group environment variable containing the following environment variables:<br>DSSMEMORYMONITORLOWSETPOINT,<br>DSSMEMORYMONITORVERYLOWSETPOINT,<br>DSSMEMORYMONITORDEADBAND,<br>DSSMEMORYMONITORRESEVRMEMSIZE,<br>DSSMEMORYMONITORDISABLED FLAG.<br><br>Size of reserved memory in MB used by SDSRV when low and normal priority requests should be rejected. This parameter is configurable. Default value – 400<br><br>Size of reserved memory in MB used by SDSRV when all requests should   |

**Table 3-151. Flat File Field Specifications (cont.)**

| File Name/Block Name                | Field Name                     | Data Type | Field Description   |
|-------------------------------------|--------------------------------|-----------|---|
|                                     | DSSMEMORYMONITOR DEADBAND      | Integer   | be rejected. This parameter is configurable. Default value – 450<br><br>Percent of memory use that must change before the memory monitoring state changes. If SDSRV is using 75% of the memory that is reserved for SDSRV, then low priority requests will be rejected. The memory usage must fall to 70% if this parameter is set to 5 before low priority requests will be accepted. This parameter is configurable. Default Value – 5% |
|                                     | DSSMEMORYMONITOR RESEVRMEMSIZE | Integer   | Size of the memory block in MB that is reserved for the SDSRV process on startup. This parameter is configurable. Default – 550   |
|                                     | DSSMEMORYMONITOR DISABLEDFLAG  | Integer   | Flag to enable and disable memory monitoring. If the parameter is set to 0, memory management is enabled. If the parameter is set to 1, memory management is disabled. This parameter is configurable. Default – 0.   |
| EcDsScienceDataServer.CFG/DSSSr Env | DSSSrEnv4                      |           | This is a group environment variable containing the following environment variables: RpcClientID, SDSRV_STAGINGDISK_TRY_COUNT, SDSRV_ARCHIVE_TRY_COUNT, SDSRV_DDIST_TRY_COUNT, SDSRV_SUBSCRIPT_SRVR_TRY_COUNT, SDSRV_RETRY_SLEEP_TIME, SDSRV_DB_TRY_COUNT, SDSRV_ACCOUNTABILITY_TRY_COUNT.  |
|                                     | RpcClientID                    | String    | Science Data Server RPC ID.<br>Value – SDSV   |
|                                     | SDSRV_STAGINGDISK _TRY_COUNT   | nteger    | Number of times to retry connecting to the Staging Disk Server if a   |

**Table 3-151. Flat File Field Specifications (cont.)**

| File Name/Block Name               | Field Name   | Data Type  | Field Description  |
|------------------------------------|--|--|--|
|                                    | SDSRV_ARCHIVE_TRY_COUNT<br>SDSRV_DDIST_TRY_COUNT<br>SDSRV_SUBSCRIPT_SERVER_TRY_COUNT<br>SDSRV_RETRY_SLEEP_TIME<br>SDSRV_DB_TRY_COUNT<br>SDSRV_ACCOUNTABILITY_TRY_COUNT | Integer<br>Integer<br>Integer<br>Integer<br>Integer<br>Integer | retryable error is encountered. 0 means to retry forever. Value - 0<br>Number of times to retry connecting to the Archive Server if a retryable error is encountered. 0 means to retry forever. Value - 0<br>Number of times to retry connecting to the Data Distribution Server if a retryable error is encountered. 0 means to retry forever. Value – 0<br>Number of times to retry connecting to the Subscription Server. 0 means to retry forever. Value – 0<br>Number of seconds to sleep in between retrying to connect to a server. Value – 60<br>Number of times to try to reconnect to the database. This feature is meant to recover from lost connections and deadlocks. Value – 3<br>Number of times to retry connecting to the User Profile Server. Value – 3 |
| EcDsScienceDataServer.CFG/DSSSrEnv | DSSSrEnv5<br>DSS_NUM_GEN_CATALOGS<br>SDSRV_CATALOG_CO  |  | This is a group environment variable containing the following environment variables:<br>DSS_NUM_GEN_CATALOGS,<br>SDSRV_CATALOG_CONNECT_INSTRUCTIONS,<br>SDSRV_WAITS_HDF_TIME.<br><br>Controls how many DsMdCatalog objects get created within SDSRV on startup. This value has direct impact on the number of SYBASE connections held by SDSRV. This parameter is configurable. Default Value – 15<br><br>Controls how the DsMDCatalog   |

**Table 3-151. Flat File Field Specifications (cont.)**

| File Name/Block Name               | Field Name            | Data Type | Field Description   |
|------------------------------------|-----------------------|-----------|---|
|                                    | NNECT_INSTRUCTIONS    |           | <p>connects to the database. This parameter has direct impact on the total number of connections made. The value "SybaseAndSQS" causes each DsMdCatalog to create two database connections, one to SQS and one directly to the SYBASE SQL Server. This option doubles the number of connections specified in the DSS_NUM_GEN_CATALOGS, but it offers significant performance gains by using direct SYBASE SQL Server connections when possible. The value "SQSOnly" causes each DsMdCatalog object to create only one database connection. This connection is to the SQS Server. This option requires less total connections, but lacks the performance improvements gained by using the direct SQL Server connections. This parameter is configurable. Default Value – SQSOnly</p> |
|                                    | SDSRV_WAITS_HDF_TIME  | Integer   | <p>This parameter controls the amount of time to wait (in seconds) for an HDF Server before the request gives up and fails.</p> <p>This parameter is configurable. Default Value - 900</p>  |
| EcDsScienceDataServer.CFG/DSSSrEnv | DSSSrEnv6             |           | <p>This is a group environment variable containing the following environment variables: SDSRV_NUM_INT_SESSION, SDSRV_NUM_HEAVY_SESSION, SDSRV_HEAVY_REQUEST_TYPE, SDSRV_PAUSE_INT_SESSION, SDSRV_STARTUP_SLEEP_TIME, SDSRV_EMAIL_PROFID.</p>  |
|                                    | SDSRV_NUM_INT_SESSION | Integer   | <p>Number of concurrent sessions reserved to work off stored Persistent Asynchronous Acquire Requests. This parameter is configurable. Value – 128</p>  |

**Table 3-151. Flat File Field Specifications (cont.)**

| File Name/Block Name               | Field Name  | Data Type   | Field Description  |
|------------------------------------|---|---|--|
|                                    | SDSRV_NUM_HEAVY_SESSION<br>SDSRV_HEAVY_REQUEST_TYPE<br>SDSRV_PAUSE_INT_SESSION<br>SDSRV_STARTUP_SLEEP_TIME<br>SDSRV_EMAIL_PROFILE | Integer<br>String<br>Integer<br>Integer<br>string | Number of concurrent sessions reserved to work off Asynchronous Subsetting requests. Value – 3<br>ESDT Short Name of acquire requests that require subsetting. Values – L70R, L70RWRS<br>Number of seconds to wait before checking if there are any available sessions for Asynchronous Acquire Requests. Value – 45<br>Number of seconds to wait before starting to process Asynchronous Acquire Request when the SDSRV is warm started. Value – 30<br>Name of User that requires a Signal File instead of a Metadata file when acquiring AST_EXP data. This value should be set to the same value that is in the Email Parser Gateway Server.<br>This parameter is configurable. Default Value - EcCsEmailPr |
| EcDsScienceDataServer.CFG/DSSSrEnv | DSSSrEnv7<br>SDSRV_AUTO_INSPECT_SWITCH  |   | This is a group environment variable containing the following environment variables:<br>SDSRV_AUTO_INSPECT_SWITCH , SDSRV_AUTO_INSPECT_LIST , SDSRV_ISOLATION0_LOCATIONS , SDSRV_MD_BATCH_SIZE , SDSRV_MD_USE_BATCH , SDSRV_LOC_MEM_BUF_SIZE , SDSRV_MAX_GRANULES_PER_ACQUIRE .<br>Controls whether SDSRV returns commonly inspected metadata attributes as part of the search request. The intent of this feature is to eliminate the RPC associated with the INSPECT service. Turns the SDSRV Auto Inspect feature on and  |

**Table 3-151. Flat File Field Specifications (cont.)**

| File Name/Block Name               | Field Name  | Data Type  | Field Description  |
|------------------------------------|---|--|--|
|                                    | SDSRV_AUTO_INSPECT_LIST<br>SDSRV_ISOLATION0_LOCATIONS<br>SDSRV_MD_BATCH_SIZE<br>SDSRV_MD_USE_BATCH<br>SDSRV_LOC_MEM_BUFFER_SIZE<br>SDSRV_MAX_GRANULES_PER_ACQUIRE | String<br>String<br>Integer<br>Integer<br>Integer<br>Integer | off. 1 means on. This parameter is configurable. Value – 1<br>List of attributes that will automatically be returned to the client on a search if Auto Inspect is activated. Value – BeginningDateTime EndingDateTime productionHistoryId browseGranules CollectionDescriptionClass ECSDataGranule SpatialDomainContainer AdditionalAttributes<br>Location set for isolation level 0. Current default is “None” for no dirty reads; other possible locations include “FindIdOnly,” “GetMetadataOnly,” and “FindIdAndGetMetadata,” where dirty reads are allowed in each case<br>Size of batch SQL processing, i.e., the number of SQL statements to be executed by the DB via a single RPC call. Value – 10<br>Flag to enable or disable batch SQL processing. 1 for enabled and 0 for disabled. Value – 1<br>Internal attribute used to control the size of the buffers for storing GIParameters. The unit is byte. Value – 4096<br>Maximum number of granules allowed for each acquire request. Value – 1500 |
| EcDsScienceDataServer.CFG/DSSSrEnv | DSSSrEnv8   |  | This is a group environment variable containing the following environment variables:   |

**Table 3-151. Flat File Field Specifications (cont.)**

| File Name/Block Name               | Field Name   | Data Type                                       | Field Description   |
|------------------------------------|--|---|---|
|                                    | SDSRV_NOTIFIERQ_DATARETENTIONHOURS<br>SDSRV_NOTIFIERQ_CLEANUPINTERVALSECS<br>SDSRV_REQUEST_DATARETENTIONHOURS<br>SDSRV_REQUEST_CLEANUPINTERVALSECS<br><br>SDSRV_NOTIFIERQ_DATARETENTIONHOURS<br>SDSRV_NOTIFIERQ_CLEANUPINTERVALSECS<br><br>SDSRV_REQUEST_DATARETENTIONHOURS<br><br>SDSRV_REQUEST_CLEANUPINTERVALSECS | Integer<br>Integer<br>Integer<br>Integer        | SDSRV_NOTIFIERQ_DATARETENTIONHOURS<br>SDSRV_NOTIFIERQ_CLEANUPINTERVALSECS<br>SDSRV_REQUEST_DATARETENTIONHOURS<br>SDSRV_REQUEST_CLEANUPINTERVALSECS<br><br>The number of hours for which notifications are retained before expiring. Value – 48<br><br>The interval at which to check the notification queue for expired events to be removed. Value – 3600<br><br>The number of hours for which asynchronous requests are retained before expiring. Value – 48<br><br>The interval at which to check the asynchronous requests for expired requests to be removed. Value – 3600 |
| EcDsScienceDataServer.CFG/DSSSrEnv | DSSSrEnv_DB<br><br>DBUSERNAME<br>DBPASSWDSEED<br>DBNAME<br>DBMAXRESULTS  | String<br>String<br>Integer<br>String<br>String | This is a group environment variable containing the following environment variables: DBUSERNAME, DBPASSWDSEED, DBNAME, DBMAXRESULTS, SYBINTERFACES, SDSRV_SYBASE_SERVER, SDSRV_DB_MAX_JOINS<br><br>Sybase login of the SDSRV user.<br><br>Seed used to generate Sybase password of the SDSRV Sybase login. Value – 4000000<br><br>Sybase database name of the SDSRV metadata database for this server.  |

**Table 3-151. Flat File Field Specifications (cont.)**

| File Name/Block Name               | Field Name           | Data Type     | Field Description   |
|------------------------------------|----------------------|---------------|---|
|                                    | SYBINTERFACES        | String        | Maximum number of results returned to client from DsDbInterface class. Value – 1500                   |
|                                    | SDSRV_SYBASE_SERVER  | String        | Unix file path location of the Sybase INTERFACES file. Value - tools/sybOCv11.1.1/interfaces          |
|                                    | SDSRV_DB_MAX_JOIN_S  | Integer       | Name of the Sybase SQL Server instance used by the SDSRV instance.                                    |
|                                    |                      |               | Maximum number of tables that can be joined on a query. Value – 14                                    |
| EcDsScienceDataServer.CFG/DSSSrEnv | DSSSrUNIXEnv         |               | This is a group environment variable containing the following environment variables: SYBASE, DSQUERY. |
|                                    | SYBASE               | String        | Unix file path of the Home directory of the Sybase SQL Server software. Value - /tools/sybOCv11.1.1   |
|                                    | DSQUERY              | string        | SQS Instance.   |
| EcDsScienceDataServer.PCFG/PROGRAM | MsAg_ID              | Quoted string | Program ID. Value – 4000000   |
|                                    | MsAg_AppID           | Quoted string | Application ID. Value - 4000000   |
|                                    | MsAg_ApplicationName | Quoted string | Application Name. Value – EcDsScienceDataServer   |
|                                    | MsAg_Name            | Quoted string | Program Name. Value – EcDsScienceDataServer   |
|                                    | MsAg_MajorVersion    | Quoted string | Program Major Version. Value – 1  |
|                                    | MsAg_MinorVersion    | Quoted string | Program Minor Version. Value – 1  |
|                                    |                      | Quoted        |   |

**Table 3-151. Flat File Field Specifications (cont.)**

| File Name/Block Name                | Field Name  | Data Type  | Field Description  |
|-------------------------------------|---|--|--|
|                                     | MsAg_Revision<br>MsAg_MaintLevel<br>MsAg_Type<br>MsAg_Contact<br>MsAg_Language<br>MsAg_ExecPath<br>MsAg_ExecFile<br>MsAg_UpdateInterval_sec<br>MsAg_AppShutdown_sec<br>MsAg_ProgShutdown_sec<br>MsAg_ProcShutdown_sec<br>MsAg_InstallTime<br>MsAg_TimeOut | string<br>Quoted string<br>Quoted string<br>Quoted string<br>Quoted string<br>Quoted string<br>Quoted string<br>Quoted string<br>Integer<br>Integer<br>Integer<br>Quoted string<br>Quoted string | Program Revision Number. Value – 0<br>Program Maintenance Level. Value – 0<br>Program Type. Value - custom<br>Program Primary Contact. Value – DSS Task Lead<br>Program Language. Value – English<br>Path to program executable. Value /usr/ecs/<MODE>/CUSTOM/utilities<br>Script to start program. Value – EcDsScienceDataServerStart <MODE><br>Value – 99<br>Value – 20<br>Value – 15<br>Value – 10<br>Program Install Time. Value - <Date><br>Value - 0 |
| EcDsScienceDataServer.PCFG/Proce ss | MsAg CPU Utilization %<br>MsAg Memory Utilization %<br>MsAg In RPC counter  | Series of bracket delimited quoted strings.  | . Value - 500, 300, 100, 400, 200, 150<br>. Value - 500, 300, 100, 400, 200, 150<br>. Value - 500, 300, 100, 400, 200,   |

**Table 3-151. Flat File Field Specifications (cont.)**

| File Name/Block Name            | Field Name                     | Data Type | Field Description  |
|---------------------------------|--------------------------------|-----------|--|
|                                 | MsAg Out RPC counter           |           | 150<br>. Value - 500, 300, 100, 400, 200, 150                                  |
|                                 | MsAg In RPC Packets counter    |           | . Value - 500, 300, 100, 400, 200, 150   |
|                                 | MsAg Out RPC Packets counter   |           | . Value - 500, 300, 100, 400, 200, 150   |
|                                 | MsAg Number Of Threads integer |           | . Value - 500, 300, 100, 400, 200, 150   |
|                                 | MsAg Disk IO %                 |           | . Value - 500, 300, 100, 400, 200, 150   |
| EcDsScienceDataServerClient.CFG | EcDsScienceDataServer G1       | String    | Science Data Server DCE groupname 1. Value - G1                                |
|                                 | EcDsScienceDataServer G2       | String    | Science Data Server DCE groupname 2. Value - G2                                |
|                                 | EcDsScienceDataServer G3       | String    | ScienceDataServer DCE groupname 3. Value - G3                                  |
|                                 | EcDsScienceDataServer G4       | String    | Science Data Server DCE groupname 4. Value - G4                                |
|                                 | Site                           | String    | DAAC name. Value – GSFC  |
|                                 | SubSysName                     | String    | ECS Sub System Name. Value – DSS   |
|                                 | Name                           | String    | Name of the SDSRV Client application – EcDsScienceDataServerClient             |
|                                 | ApplicationID                  | Integer   | ECS application identifier of the EcDsScienceDataServerClient. Value – 1234567 |
|                                 | ProgramID                      | Integer   | ECS program Identifier for the SDSRV Client application. Value – 1234567       |
|                                 | AppLogSize                     | Integer   | SDSRV Client log size. Value -   |

**Table 3-151. Flat File Field Specifications (cont.)**

| File Name/Block Name | Field Name               | Data Type | Field Description  |
|----------------------|--------------------------|-----------|--|
|                      | AppLogLevel              | Integer   | 1000000<br>Application Logging level. Value is 0, 1, or 2.                     |
|                      | DebugLevel               | Integer   | SDSRV Client logging level. Value is 0, 1, 2, or 3.                            |
|                      | MajorVersion             | Integer   | Major Version. Value - 1   |
|                      | MinorVersion             | Integer   | Minor Version. Value – 0   |
|                      | AppStrtNum               | integer   | Application Start Number. Value – 12345  |
| EcDsSdSrvGui.CFG     | EcDsScienceDataServer G1 | String    | Science Data Server DCE groupname 1. Value - G1                                |
|                      | EcDsScienceDataServer G2 | String    | Science Data Server DCE groupname 2. Value - G2                                |
|                      | EcDsScienceDataServer G3 | String    | ScienceDataServer DCE groupname 3. Value - G3                                  |
|                      | EcDsScienceDataServer G4 | String    | Science Data Server DCE groupname 4. Value - G4                                |
|                      | Site                     | String    | DAAC name. Value – GSFC  |
|                      | SubSysName               | String    | ECS Sub System Name. Value – DSS   |
|                      | Name                     | String    | Name of the SDSRV Client application – EcDsSdSrvGui                            |
|                      | ApplicationID            | Integer   | ECS application identifier of the EcDsScienceDataServerClient. Value – 4000000 |
|                      | ProgramID                | Integer   | ECS program Identifier for the SDSRV Client application. Value – 4000010       |
|                      |                          | Integer   |  |

**Table 3-151. Flat File Field Specifications (cont.)**

| File Name/Block Name         | Field Name   | Data Type  | Field Description  |
|------------------------------|--|--|--|
|                              | AppLogSize<br>AppLogLevel<br>DebugLevel<br>MajorVersion<br>MinorVersion<br>AppStrtNum<br>DSSDESCDIR<br>DSServerUR                          | Integer<br>Integer<br>Integer<br>Integer<br>Integer<br>Integer<br>String<br>String | SDSRV Client log size. Value - 1000000<br>Application Logging level. Value is 0, 1, or 2.<br>SDSRV Client logging level. Value is 0, 1, 2, or 3.<br>Major Version. Value - 1<br>Minor Version. Value – 0<br>Application Start Number. Value – 12345<br>Directory where ESDT descriptors are installed from. Value - \${ECS_HOME}/\${MODE}/CUSTOM/data/ESS<br>Server UR of the SDSRV. Value - [<cell_name>:DSSDSRV] |
| EcDsCIMuQaMetadataUpdate.CFG | EcDsScienceDataServer G1<br>EcDsScienceDataServer G2<br>EcDsScienceDataServer G3<br>EcDsScienceDataServer G4<br>Site<br>SubSysName<br>Name | String<br>String<br>String<br>String<br>String<br>String<br>String                 | Science Data Server DCE groupname 1. Value - G1<br>Science Data Server DCE groupname 2. Value - G2<br>ScienceDataServer DCE groupname 3. Value - G3<br>Science Data Server DCE groupname 4. Value - G4<br>DAAC name. Value – GSFC<br>ECS Sub System Name. Value – DSS<br>Name of the SDSRV Client  |

**Table 3-151. Flat File Field Specifications (cont.)**

| File Name/Block Name  | Field Name  | Data Type  | Field Description  |
|-----------------------|---|--|--|
|                       | ApplicationID<br>ProgramID<br>AppLogSize<br>AppLogLevel<br>DebugLevel<br>MajorVersion<br>MinorVersion<br>AppStrtNum<br>DataFileName<br>STATUSFILEPATH | Integer<br>Integer<br>Integer<br>Integer<br>Integer<br>Integer<br>Integer<br>Integer<br>String | application – EcDsCIMuQaMetadataUpdate<br>ECS application identifier of the EcDsScienceDataServerClient. Value – 4000000<br>ECS program Identifier for the SDSRV Client application. Value – 4000013<br>SDSRV Client log size. Value - 1000000<br>Application Logging level. Value is 0, 1, or 2.<br>SDSRV Client logging level. Value is 0, 1, 2, or 3.<br>Major Version. Value - 1<br>Minor Version. Value – 0<br>Application Start Number. Value – 12345<br>Obsolete<br>Path to where the QA Update log files will be saved. Value - /usr/ecs/\$MODE/CUSTOM/temp/DS S |
| EcDsGranuleDelete.CFG | EcDsScienceDataServer G1<br>EcDsScienceDataServer G2  | String<br>String   | Science Data Server DCE groupname 1. Value - G1<br>Science Data Server DCE groupname 2. Value - G2   |

**Table 3-151. Flat File Field Specifications (cont.)**

| File Name/Block Name | Field Name              | Data Type | Field Description  |
|----------------------|-------------------------|-----------|--|
|                      | EcDsScienceDataServerG3 | String    | ScienceDataServer DCE groupname<br>3. Value - G3   |
|                      | EcDsScienceDataServerG4 | String    | Science Data Server DCE groupname 4. Value - G4  |
|                      | Site                    | String    | DAAC name. Value – GSFC  |
|                      | SubSysName              | String    | ECS Sub System Name. Value – DSS   |
|                      | Name                    | String    | Name of the SDSRV Client application – EcDsGranuleDelete   |
|                      | ApplicationID           | Integer   | ECS application identifier of the EcDsScienceDataServerClient. Value – 4000000                                   |
|                      | ProgramID               | Integer   | ECS program Identifier for the SDSRV Client application. Value – 4000011   |
|                      | AppLogSize              | Integer   | SDSRV Client log size. Value - 1000000   |
|                      | AppLogLevel             | Integer   | Application Logging level. Value is 0, 1, or 2.  |
|                      | DebugLevel              | Integer   | SDSRV Client logging level. Value is 0, 1, 2, or 3.  |
|                      | MajorVersion            | Integer   | Major Version. Value - 1   |
|                      | MinorVersion            | Integer   | Minor Version. Value – 0   |
|                      | AppStrtNum              | Integer   | Application Start Number. Value – 12345  |
|                      | MaxGeoidFileLines       | Integer   | Maximum number of lines (with each line corresponding to a granule) allowed for the Geoid input file. Value – 50 |

**Table 3-151. Flat File Field Specifications (cont.)**

| File Name/Block Name | Field Name               | Data Type | Field Description   |
|----------------------|--------------------------|-----------|---|
|                      | MaxCollectorSize         | Integer   | Maximum number of granules the SDSRV CL reference collector can accept. Value – 500                                     |
|                      | DSServerUR               | String    | Server UR of the SDSRV. Value - [<cell_name>:DSSDSRV]   |
|                      | EXCLUDED_GRANULES        | String    | Landsat granules not to be deleted by the Granule Delete utility. Value -- L70R L70RF1 L70RF2 L70RWRS L70RWRS1 L70RWRS2 |
| EcDsSCLI.CFG         | EcDsScienceDataServer G1 | String    | Science Data Server DCE groupname 1. Value - G1   |
|                      | EcDsScienceDataServer G2 | String    | Science Data Server DCE groupname 2. Value - G2   |
|                      | EcDsScienceDataServer G3 | String    | ScienceDataServer DCE groupname 3. Value - G3   |
|                      | EcDsScienceDataServer G4 | String    | Science Data Server DCE groupname 4. Value - G4   |
|                      | Site                     | String    | DAAC name. Value – RBD, EDC, PVC, etc.  |
|                      | SubSysName               | String    | ECS Sub System Name. Value – DSS  |
|                      | Name                     | String    | Name of the application – EcDsSCLI  |
|                      | ApplicationID            | Integer   | ECS application identifier of the EcDsSCLI. Value – 4000000   |
|                      | ProgramID                | Integer   | ECS program Identifier for the application. Value – 4000014   |
|                      | AppLogSize               | Integer   | The application log size. Value -   |

**Table 3-151. Flat File Field Specifications (cont.)**

| File Name/Block Name                         | Field Name   | Data Type  | Field Description   |
|--|--|--|---|
|  | AppLogLevel<br>DebugLevel<br>MajorVersion<br>MinorVersion<br>SCLISeniorTransactionID<br>AqWithNoCallback | Integer<br>Integer<br>Integer<br>Integer<br>String<br>String | 1000000<br>Application Logging level. Value is 0, 1, or 2.<br>EcDsSCLI logging level. Value is 0, 1, 2, or 3.<br>Major Version. Value - 1<br>Minor Version. Value – 0<br>UUID needed for constructing RpcID with tag for SCLI<br>Turns the Call back function on and off. If this is set to a value, the Call back will be turned off. Value - 1      |
| EcDsHdfEosServer_<N>.ALOG.CCYYMMDDHHMMSS     |  |  |   |
| EcDsHdfEosServer_<N>Debug.log.CCYYMMDDHHMMSS |  |  |   |
| EcDsHdfEosServer_<N>.CFG/General Attributes  | Name<br>ProgramID<br>ApplicationID<br>Site<br>SubSysName<br>MajorVersion                                 | String<br>Integer<br>Integer<br>String<br>String<br>Integer  | Name of the Hdf Eos Server Program. Value – EcDsHdfEosServer_<N><br>ECS program identifier of the EcDsHdfEosServer. Value – 4000000 + <N><br>ECS application Identifier for the SDSRV application. Value - 4000000<br>Name of the DAAC site. Value - GSFC.<br>ECS subsystem name. Value - DSS (Data Server Subsystem).<br>Major version number of the |

**Table 3-151. Flat File Field Specifications (cont.)**

| File Name/Block Name                            | Field Name                           | Data Type | Field Description  |
|---|--------------------------------------|-----------|--|
|   | MinorVersion                         | Integer   | software release. Value – 1                                  |
|   | AppLogSize                           | Integer   | Minor version number of the software release. Value – 0      |
|   | AppLogLevel                          | Integer   | Application log size in number of bytes. Value - 1000000     |
|   | DebugLevel                           | Integer   | Application logging level. Value is 0, 1, or 2.              |
|   | Release                              | string    | Debug logging level. Value is 0, 1, 2, or 3.                 |
|   |                                      |           | ECS release identifier. Value – B                            |
| EcDsHdfEosServer_<N>.CFG/DCE Related Attributes | ServerShortName                      | String    | HDF EOS Server DCE name. Value – EcDsHdfEosServer_<N>        |
|   | GroupName1                           | String    | DCE groupname 1. Value - EcDsHdfEosServer_<N>_G1             |
|   | GroupName2                           | String    | DCE groupname 2. Value - EcDsHdfEosServer_<N>_G2             |
|   | GroupName3                           | String    | DCE groupname 3. Value - EcDsHdfEosServer_<N>_G5             |
|   | HostPolicy                           | String    | Host Policy. Value - multiple.                               |
|   | ServerDescription                    | String    | Server description. Value - This is the EcDsHdfEosServer_<N> |
|   | ServerObjSerial                      | integer   | Value - 1  |
|   | NumOfInterfaces                      | Integer   | Number of interfaces. Value - 4.                             |
|   | oid_EcDsHdfEosServer_<N>_Obj1_<MODE> | String    | Value - <uuid>   |
|   | oid_EcDsHdfEosServer_<N>_Obj2_<MODE> | String    | Value - <uuid>   |

**Table 3-151. Flat File Field Specifications (cont.)**

| File Name/Block Name                         | Field Name   | Data Type  | Field Description   |
|--|--|--|---|
|  | oid_EcDsHdfEosServer_<N>_Obj3_<MODE><br><br>oid_EcAgManagaer_<MODE><br><br>ListenThreads<br><br>Protocol | String<br><br>String<br><br>Integer<br><br>string              | Value - <uuid><br><br>Value - <uuid><br><br>Number of listen threads. Value - 2<br><br>Communications Protocol. Values - TCP/IP, UDP, TCP/IP UDP, Null.   |
| EcDsHdfEosServer_<N>.CFG/Security Attributes | KeyFile<br><br>PrincipalName<br><br>AclDBName<br><br>AppStrtNum  | String<br><br>String<br><br>String<br><br>integer              | Unix path and filename for the EcDsHdfEosServer_<N>.Keyfile. . .<br><br>Value - CUSTOM/security/EcDsHdfEosServer_<N>.Keyfile<br><br>Server Principal Name. Value – EcDsHdfEosServer_<N><br><br>Sybase database name of the appropriate ACL database. Value b_MsgPsngDB_acl.<br><br>Application Start Number. Value - 12345.   |
| EcDsHdfEosServer_<N>.CFG/Security Attributes | DBAclKey<br><br>DBLibrary<br><br>DBServer<br><br>DBLoginName<br><br>DBPassword                           | String<br><br>String<br><br>String<br><br>String<br><br>String | Value - PfAclKey.<br><br>Symbolic name of the database client library for RogueWave DBTools. This parameter is currently not used. Value - Sybase_CT.<br><br>Sybase SQL server name for the ACL database. This parameter is currently not used. Value - OTIS_SERVER.<br><br>Sybase login name for ACL processing. This parameter is currently not used. Value - acluser.<br><br>Sybase login password for ACL processing. This parameter is |

**Table 3-151. Flat File Field Specifications (cont.)**

| File Name/Block Name   | Field Name      | Data Type | Field Description  |
|--|-----------------|-----------|--|
|  | DBName          | String    | currently not used.<br><br>Sybase database name of the ACL database. This parameter is currently not used. Value - EcsAclStorage.  |
|  | UpdateAclTime   | integer   | How often (in seconds) updates to the ACL information are processed. Value - 3600.   |
| EcDsHdfEosServer_<N>.CFG/Server Request Framework and Message Passing Attributes | SRFlag          | String    | Turns Server Request Framework(SRF) on or off. Value - no.   |
|  | Messpassflag    | String    | Turns Message Passing on or off. Value – no.   |
|  | RecUuid         | String    | UUID needed for SRF.   |
|  | RecLogFileName  | String    | Name of file used to persist received message passing data. Value - b_Rec.   |
|  | SendLogFileName | String    | Name of file used to persist sending message passing data. If not set there will be no persistence for message passing. Value - b_Send.  |
|  | NbrofFTPThr     | Integer   | Number of FTP threads used by the application.<br>Value - Between 1 and 30.  |
|  | FTPFileName     | string    | Determines persistence with FTP. Value - ftpfilename.  |
| EcDsHdfEosServer_<N>/DSSHrEnv  | DSSHrEnv        |           | This is a group environment variable containing<br>the following environment variables:<br>RpcClientID,<br>HDFEOS_RESTART_ABSOLUTE_MEMORY,<br>HDFEOS_RESTART_RELATIVE_MEMORY,<br>HDFEOS_RESTART_LOCAL_DIR,<br>HDFEOS_STAGINGDISK_TRY_COUNT,<br>HDFEOS_RETRY_SLEEP_TIME |

**Table 3-151. Flat File Field Specifications (cont.)**

| File Name/Block Name            | Field Name                         | Data Type | Field Description   |
|---------------------------------|------------------------------------|-----------|---|
|                                 | RpcClientID                        | String    | HDF EOS Server RPC Client ID. Each instance of the server will have a unique value.   |
|                                 | HDFEOS_RESTART_AB<br>SOLUTE_MEMORY | Integer   | Sets the maximum memory that a HDF EOS Server can consume for all requests during the lifetime of the server. This parameter is configurable. Default Value - 150000000 |
|                                 | HDFEOS_RESTART_RELATIVE_MEMORY     | Integer   | Sets the maximum memory that a HDF EOS Server can consume for a single request. This parameter is configurable. Default value – 20000000                                |
|                                 | HDFEOS_RESTART_LOCAL_DIR           | String    | Directory path to the HDF EOS Server executable. This parameter is configurable. Default Value - \${ECS_HOME}/<MODE>/CUSTOM/bin/DSS                                     |
|                                 | HDFEOS_STAGINGDISK_TRY_COUNT       | Integer   | Number of times to retry connecting to the Staging Disk Server if a retryable error is encountered. Value – 0   |
|                                 | HDFEOS_RETRY_SLEEP_TIME            | Integer   | Number of seconds to sleep in between retrying to connect to a server. Value – 60   |
| EcDsHdfEosServer_<N>/DSSStagEnv | DSSStagEnv                         |           | This is a group environment variable containing the following environment variables: OUTPUTFILESIZERATIO, MCFFILESIZE RATIO   |
|                                 | OUTPUTFILESIZERATIO                | Float     | Value – 1.0   |
|                                 | MCFFILESIZE RATIO                  | float     | Value – 0.2   |

**Table 3-151. Flat File Field Specifications (cont.)**

| File Name/Block Name         | Field Name                         | Data Type | Field Description  |
|------------------------------|------------------------------------|-----------|--|
| EcDsHdfEosServer_<N>/DsCsEnv | DsCsEnv<br>SYBASE<br>SYBINTERFACES |           | This is a group environment variable containing the following environment variables: SYBASE, SYBINTERFACES.<br><br>This parameter is configurable.<br>Default Value - /tools/sybOCv11.1.0<br><br>This parameter is configurable.<br>Default Value - /tools/sybOCv11.1.0/interfaces |

### 3.2.4 Domain Definitions

Domain definitions specify the data type and valid content of fields within a file (e.g., specific values for a limited set of data, ranges of numeric data, units of measure for applicable data). This information is generally used by software to edit incoming data for validity prior to writing or changing data within the file. Use of domain values in updating (adding and changing) records within files preserves the integrity of the data within the file. The domain definitions for the SDSRV Subsystem are presented in Table 3-152.

**Table 3-152. Flat File Domain Definitions (1 of 2)**

| File Name/Block Name                                  | Field Name | Domain Description  |
|---|------------|---|
| EcDsScienceDataServer.ALOG.CCYYMMDDHHMMS<br>S/<br>N/A |            | 5 digit integer<br>1 digit integer<br>string. Value-<br>DsSrSdsrvmainStartSrSdsrv<br>String.<br>2 digit integer<br>datetime. Format-<br>05/15/98 10:40:42   |
| EcDsScienceDataServerDebug.log.CCYYMMDDHHM<br>SS/ N/A |            | Variable Message Text<br>For SDSRV debug code.<br>Describes state of<br>Processing at key points in<br>code. Value- Dss<br>EcDsScienceDataServer<br>Server Debug log on texas<br>starting on Mon Apr 13 |

**Table 3-152. Flat File Domain Definitions (2 of 2)**

| File Name/Block Name   | Field Name | Domain Description |
|--|------------|--------------------|
| EcDsScienceDataServer.ACFG/<br>APPLICATION<br>PROGRAM<br>EcDsScienceDataServer.CFG/<br>General Attributes<br>DCE RELATED ATTRIBUTES<br>SECURITY ATTRIBUTES<br>DATABASE ATTRIBUTES<br>SERVER REQUEST FRAMEWORK AND MESSAGE<br>PASSING FLAGS<br>MESSAGE PASSING ATTRIBUTES<br>HDF server info<br>DSSSrEnv2<br>EcDsScienceDataServer.PCFG/<br>CSS_MP<br>APPLICATION<br>PROGRAM<br>PROCESS<br>EcDsScienceDataServerClient.CFG<br>EcDsScienceDataServer.ACFG<br><ShortName>,<VerionID>.evt<br>DsEsDTCollectionTemplate.desc<br>DsESDT <sub-dir<br>name><ShortName>,<VersionID>,desc<br>LibDsEsdt<sub-dir<br>name><ShortName>,<VersionID>Sh.so |            |                    |

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## 4. Performance and Tuning Factors

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### 4.1 Indexes

An index provides a means of locating a row in a database table based on the value of a specific column(s), without having to scan all data in the table. When properly implemented, indexes can significantly decrease the time it takes to retrieve data, thereby increasing performance. Sybase allows the definition of two types of indexes, clustered and non-clustered.

In a clustered index, the rows in a database table are physically stored in sequence-determined by the index. Clustered indexes are particularly useful, when the data is frequently retrieved in sequential order. Only one clustered index may be defined per table.

Non-clustered indexes differ from their clustered counterpart, in that, data is not physically stored in sorted order—newly added rows are stored at the end of the related database table.

A key of the types of indexes found in SDSRV is provided in Table 4-1 Index Type Key. A list a description of each of the defined indexes is given in Table 4-2 Index List.

**Table 4-1. Index Type Key**

| Index Type Key | Description                                       |
|----------------|---|
| PK             | Primary Key                                       |
| FK             | Foreign Key                                       |
| U              | Unique - Only one for the column code combination |
| C              | Clustered or non-clustered index                  |
| Sort           | ASC (ascending) or DESC (descending) order        |

**Table 4-2. Index List (1 of 6)**

| Table Name                  | Index Name  | PK              | FK             | U                | C               |
|-----------------------------|---|-----------------|----------------|------------------|-----------------|
| DsBtNotifierQueue           | PK_DSBNOTIFIERQUEUE   | Yes             | No             | Yes              | Yes             |
| DsDeDictionaryAttribute     | PK_DSDBDICTIONARYATTRIBUTE<br>xDsDeDictionaryAttribute                                | Yes<br>No       | No<br>No       | Yes<br>Yes       | Yes<br>No       |
| DsDeDictionaryContent       | PK_DSDBDICTIONARYCONTENT<br>xDsDeDictionaryContent                                    | Yes<br>No       | No<br>No       | Yes<br>Yes       | Yes<br>No       |
| DsDeDictionaryRule          | PK_DSDBDICTIONARYRULE   | Yes             | No             | Yes              | Yes             |
| DsDeECSKeywordValids        | PK_DSDEECSKEYWORDVALIDS   | Yes             | No             | Yes              | Yes             |
| DsDeEvent                   | PK_DSDEEVENTS<br>xDsDeEvent   | Yes<br>No       | No<br>No       | Yes<br>Yes       | Yes<br>No       |
| DsGeESDTConfiguredType      | PK_DSGEESDTCONFIGUREDTYPE   | Yes             | No             | Yes              | Yes             |
| DsMdAdditionalAttributes    | PK_DSMDADDITIONALATTRIBUTES<br>xDsMdAdditionalAttributes                              | Yes<br>No       | No<br>No       | Yes<br>Yes       | Yes<br>No       |
| DsMdAlgorithmPackage        | PK_DSMDALGORITHMPACKAGE<br>xDsMdAlgorithmPackageDate<br>xDsMdAlgorithmPackageNameVers | Yes<br>No<br>No | No<br>No<br>No | Yes<br>No<br>Yes | Yes<br>No<br>No |
| DsMdAlgorithmPkgFileStorage | PK_DSMDALGORITHMPKGFILESTORAGE<br>xDsMdAlgorithmPkgFileStorage                        | No<br>No        | No<br>No       | Yes<br>No        | Yes<br>No       |
| DsMdAltitudeResolution      | PK_DSMDALTITUDERESOLUTION   | Yes             | No             | Yes              | Yes             |
| DsMdAnalysisSource          | PK_DSMDANALYSISISSOURCE<br>xDsMdAnalysisSource  | Yes<br>No       | No<br>No       | Yes<br>Yes       | Yes<br>No       |
| DsMdAncillaryInput          | PK_DSMDANCILLARYINPUT   | Yes             | Yes            | Yes              | Yes             |
| DsMdApContactXref           | PK_DSMDAPCONTACTXREF<br>xDsMdApContactXref  | Yes<br>No       | No<br>Yes      | Yes<br>No        | Yes<br>No       |
| DsMdAPSAPComponentXref      | PK_DSMDAPSAPCOMPONENTXREF<br>xDsMdAPSAPComponentXrefSsapId                            | Yes<br>No       | No<br>Yes      | Yes<br>No        | Yes<br>No       |
| DsMdAttributeConversion     | pk_dsmddattributeconversion   | Yes             | No             | Yes              | Yes             |
| DsMdAttributeList           | PK_DSMDATTRIBUTELIST  | Yes             | No             | Yes              | Yes             |
| DsMdAttributeTableXref      | PK_DSMDATTRIBUTETABLEXREF   | Yes             | No             | Yes              | Yes             |
| DsMdBaseDependent           | pk_dsmdbasedependent  | Yes             | No             | Yes              | Yes             |
| DsMdBrowse                  | PK_DSMDBROWSE<br>xDsMdBrowseDate  | Yes<br>No       | No<br>No       | Yes<br>No        | Yes<br>No       |
| DsMdBrowseFileStorage       | PK_DSMDBROWSEFILESTORAGE<br>xDsMdBrowseFileStorage                                    | No<br>No        | No<br>No       | Yes<br>No        | Yes<br>No       |
| DsMdBrowseGranuleXref       | PK_DSMDBROWSEGGRANULEXREF<br>xDsMdBrowseGranuleXref                                   | Yes<br>No       | No<br>No       | Yes<br>No        | Yes<br>No       |
| DsMdCampaign                | PK_DSMDCAMPAIGN<br>xDsMdCampaign  | Yes<br>No       | No<br>No       | Yes<br>Yes       | Yes<br>No       |
| DsMdCIBoundingRectangle     | PK_DSMDCLBOUNDINGRECTANGLE  | Yes             | Yes            | Yes              | Yes             |

**Table 4-2. Index List (2 of 6)**

| Table Name                     | Index Name  | PK              | FK             | U                 | C               |
|--------------------------------|---|-----------------|----------------|-------------------|-----------------|
| DsMdCICircle                   | PK_DSMDCLCIRCLE   | Yes             | Yes            | Yes               | Yes             |
| DsMdCIGPolygon                 | PK_DSMDCLGPOLYGON   | Yes             | Yes            | Yes               | Yes             |
| DsMdTemporalSize               | PK_DSMDTEMPORALSIZE   | Yes             | No             | Yes               | Yes             |
| DsMdCIPoint                    | PK_DSMDCLPOINT  | Yes             | Yes            | Yes               | Yes             |
| DsMdCollBrowseXref             | PK_DSMDCOLLBROWSEXREF   | Yes             | No             | Yes               | Yes             |
| DsMdCollDisciplineKeywordXref  | PK_DSMDCOLLDISCIPLINEKEYWORDXR  | Yes             | No             | Yes               | Yes             |
| DsMdCollectionAddnlAttribsXref | PK_DSMDCOLLECTIONADDNLATTRIBSX<br>xDsMdCollectionAddnlAttribsXrf      | Yes<br>No       | No<br>No       | Yes<br>No         | Yes<br>No       |
| DsMdCollectionAnalysisXref     | PK_DSMDCOLLECTIONANALYSISXREF   | Yes             | No             | Yes               | Yes             |
| DsMdCollectionAPXref           | PK_DSMDCOLLECTIONAPXREF<br>idx1_dsmdcollectionapxref                  | Yes<br>No       | Yes<br>Yes     | Yes<br>Yes        | Yes<br>No       |
| DsMdCollectionAssociation      | PK_DSMDCOLLECTIONASSOCIATION  | Yes             | Yes            | Yes               | Yes             |
| DsMdCollectionCampaignXref     | PK_DSMDCOLLECTIONCAMPAIGNXREF   | Yes             | No             | Yes               | Yes             |
| DsMdCollectionContactXref      | PK_DSMDCOLLECTIONCONTACTXREF  | Yes             | No             | Yes               | Yes             |
| DsMdCollectionGranuleXref      | PK_DSMDCOLLECTIONGRANULEXREF<br>xDsMdCollectionGranuleXref            | Yes<br>No       | Yes<br>Yes     | Yes<br>No         | Yes<br>No       |
| DsMdCollectionInstrumentXref   | PK_DSMDCOLLECTIONINSTRUMENTXRE  | Yes             | No             | Yes               | Yes             |
| DsMdCollectionPlatformXref     | PK_DSMDCOLLECTIONPLATFORMXREF   | Yes             | No             | Yes               | Yes             |
| DsMdCollections                | PK_DSMDCOLLECTIONS<br>XDsmCollectionsSnVid<br>xDsMdCollectionssubType | Yes<br>No<br>No | No<br>No<br>No | Yes<br>Yes<br>Yes | Yes<br>No<br>No |
| DsMdCollectionSensorXref       | PK_DSMDCOLLECTIONSENSORXREF   | Yes             | No             | Yes               | Yes             |
| DsMdCollFloatInfoContent       | PK_DSMDCOLLFLOATINFOCONTENT<br>xDsMdCollFloatInfoContAttrId           | Yes<br>No       | No<br>No       | Yes<br>No         | Yes<br>No       |
| DsMdCollIntegerInfoContent     | PK_DSMDCOLLINTEGERINFOCONTENT<br>xDsMdCollIntInfoContentAttrId        | Yes<br>No       | No<br>No       | Yes<br>No         | Yes<br>No       |
| DsMdCollReview                 | PK_DSMDCOLLREVIEW   | Yes             | No             | Yes               | Yes             |
| DsMdCollStorageMedium          | PK_DSMDCOLLSTORAGE MEDIUM   | Yes             | No             | Yes               | Yes             |
| DsMdCollStringInfoContent      | PK_DSMDCOLLSTRINGINFOCONTENT<br>xDsMdCollStringInfoContAttrId         | Yes<br>No       | Yes<br>Yes     | Yes<br>No         | Yes<br>No       |
| DsMdCollVerticalSpatialDomain  | PK_DSMDCOLLVERTICALSPATIALDOMA  | Yes             | No             | Yes               | Yes             |
| DsMdCollURLInfo                | PK_DSMDCOLLURLINFO  | Yes             | Yes            | Yes               | Yes             |
| DsMdCollZoneIdentifier         | PK_DSMDCOLLZONEIDENTIFIER   | Yes             | No             | Yes               | Yes             |
| DsMdCommandConversion          | pk_dsmdcommandconversion  | Yes             | No             | Yes               | Yes             |
| DsMdContact                    | PK_DSMDCONTACT<br>xDsMdContactRole                                    | Yes<br>No       | No<br>No       | Yes<br>No         | Yes<br>No       |
| DsMdContactAddress             | PK_DSMDCONTACTADDRESS   | Yes             | No             | Yes               | Yes             |
| DsMdContactOrganizations       | PK_DSMDCONTACTORGANIZATIONS<br>xDsMdContactOrgName                    | Yes<br>No       | Yes<br>No      | Yes<br>No         | Yes<br>No       |

**Table 4-2. Index List (3 of 6)**

| Table Name                | Index Name  | PK                                | FK                                | U                                  | C                                 |
|---------------------------|---|-----------------------------------|-----------------------------------|------------------------------------|-----------------------------------|
| DsMdContactPersons        | PK_DSMDCONTACTPERSONS<br>xDsMdContactPersonsLastName  | Yes<br>No                         | Yes<br>No                         | Yes<br>No                          | Yes<br>No                         |
| DsMdCSDTDescription       | PK_DSMDCSDTDESCRIPTION  | Yes                               | No                                | Yes                                | Yes                               |
| DsMdDAP                   | PK_DSMDDAP  | Yes                               | No                                | Yes                                | Yes                               |
| DsMdDAPFileStorage        | PK_DSMDDAPFILESTORAGE<br>xDsMdDAPFileStorage  | Yes<br>No                         | No<br>No                          | Yes<br>No                          | Yes<br>No                         |
| DsMdDeletedGranules       | PK_DSMDDELETEDGRANULES<br>xDsMdDeletedGranulestTime   | Yes<br>No                         | Yes<br>No                         | Yes<br>No                          | Yes<br>No                         |
| DsMdDepthResolution       | PK_DSMDDEPTHRESOLUTION  | Yes                               | No                                | Yes                                | Yes                               |
| DsMdDisciplineKeywords    | PK_DSMDDISCIPLINEKEYWORDS<br>xDsMdDisciplineKeywords  | Yes<br>No                         | No<br>No                          | Yes<br>No                          | Yes<br>No                         |
| DsMdECSParameterKeywords  | PK_DSMDECSPARAMETERKEYWORDS<br>xDsMdECSParameterKeywords  | Yes<br>No                         | No<br>No                          | Yes<br>No                          | Yes<br>No                         |
| DsMdEmailAddress          | PK_DSMDEMAILADDRESS<br>xDsMdEmailAddress  | Yes<br>No                         | No<br>No                          | Yes<br>No                          | Yes<br>No                         |
| DsMdFileStorage           | PK_DSMDFILESTORAGE<br>xDsMdFileStorageintFileName   | Yes<br>No                         | No<br>No                          | Yes<br>No                          | Yes<br>No                         |
| DsMdGranuleAnalysisXref   | PK_DSMDGRANULEANALYSISXREF  | Yes                               | No                                | Yes                                | Yes                               |
| DsMdGranuleCampaignXref   | PK_DSMDGRANULECAMPAIGNXREF  | Yes                               | No                                | Yes                                | Yes                               |
| DsMdGranuleInstrumentXref | PK_DSMDGRANULEINSTRUMENTXREF  | Yes                               | No                                | Yes                                | Yes                               |
| DsMdGranuleLocality       | PK_DSMDGRANULELOCALITY  | Yes                               | No                                | Yes                                | Yes                               |
| DsMdGranulePlatformXref   | PK_DSMDGRANULEPLATFORMXREF  | Yes                               | No                                | Yes                                | Yes                               |
| DsMdGranuleReview         | PK_DSMDGRANULEREVIEW  | Yes                               | No                                | Yes                                | Yes                               |
| DsMdGranules              | PK_DSMDGRANULES<br>xDsMdGranulesDate<br>xDsMdGranulesPHID<br>xDsMdGranulesEndDtBegDtDbid<br>xDsMdGranuleSNmVidEndBeg<br>xDsMdGranulesLGID | Yes<br>No<br>No<br>No<br>No<br>No | No<br>No<br>Yes<br>No<br>No<br>No | Yes<br>No<br>No<br>No<br>Yes<br>No | No<br>No<br>No<br>No<br>Yes<br>No |
| DsMdGranuleSensorXref     | PK_DSMDGRANULESENSORXREF  | Yes                               | No                                | Yes                                | Yes                               |
| DsMdGranuleVersions       | PK_DSMDGRANULEVERSIONS  | Yes                               | No                                | Yes                                | Yes                               |
| DsMdGrBoundingRectangle   | PK_DSMDGRBOUNDINGRECTANGLE<br>xDsMdGrBoundingRectangle  | Yes<br>No                         | No<br>No                          | Yes<br>Yes                         | No<br>Yes                         |

**Table 4-2. Index List (4 of 6)**

| Table Name                   | Index Name   | PK              | FK             | U               | C               |
|------------------------------|--|-----------------|----------------|-----------------|-----------------|
| DsMdGrCircle                 | PK_DSMDGRGCIRCLE<br>xDsMdGrCircle  | Yes<br>No       | No<br>No       | Yes<br>Yes      | No<br>Yes       |
| DsMdGrFloatInfoContent       | PK_DSMDGRFLOATINFOCONTENT<br>xDsMdGrFloatInfoContent                     | Yes<br>No       | No<br>No       | Yes<br>Yes      | Yes<br>No       |
| DsMdGrGPolygon               | PK_DSMDGRGPOLYGON<br>xDsMdGrPolygon                                      | Yes<br>No       | No<br>No       | Yes<br>Yes      | No<br>Yes       |
| DsMdGrIntegerInfoContent     | PK_DSMDGRINTEGERINFOCONTENT<br>xDsMdGrIntegerInfoContent                 | Yes<br>No       | No<br>No       | Yes<br>Yes      | Yes<br>No       |
| DsMdGrPoint                  | PK_DSMDGRPOINT<br>xDsMdGrPoint   | Yes<br>No       | No<br>No       | Yes<br>No       | No<br>Yes       |
| DsMdGrSensorCharacteristics  | PK_DSMDGRSENSORCHARACTERISTICS   | Yes             | No             | Yes             | Yes             |
| DsMdGrStorageMedium          | PK_DSMDGRSTORAGEMEDIUM   | Yes             | No             | Yes             | Yes             |
| DsMdGrStringInfoContent      | xDsMdGrStringInfoContentAttrId<br>PK_DSMDGRSTRINGINFOCONTENT             | No<br>Yes       | Yes<br>Yes     | No<br>Yes       | No<br>Yes       |
| DsMdGrVerticalSpatialDomain  | PK_DSMDGRVERTICALSPATIALDOMAIN   | Yes             | No             | Yes             | Yes             |
| DsMdIdentifier               | PK_DSMDIDENTIFIER  | Yes             | No             | Yes             | Yes             |
| DsMdInputGranule             | PK_DSMDINPUTGRANULE<br>xDsMdInputPointer<br>xDsMdInputGranuleInputGrgrId | Yes<br>No<br>No | No<br>No<br>No | Yes<br>No<br>No | Yes<br>No<br>No |
| DsMdInsertSequence           | pk_dsmoperatorconversion   | Yes             | No             | Yes             | Yes             |
| DsMdInstrument               | PK_DSMDINSTRUMENT<br>xDsMdInstrument                                     | Yes<br>No       | No<br>No       | Yes<br>Yes      | Yes<br>No       |
| DsMdInstrumentCharacteristic | PK_DSMDINSTRUMENTCHARACTERISTI   | Yes             | No             | Yes             | Yes             |
| DsMdJoins                    | PK_DSMDJOINS   | Yes             | No             | Yes             | Yes             |
| DsMdKeyDependency            | pk_dsmkeydependency  | Yes             | No             | Yes             | Yes             |
| DsMdLocality                 | PK_DSMDLOCALITY  | Yes             | No             | Yes             | Yes             |
| DsMdL7ErrorHandling          | PK_DSMDL7ERRORHANDLING   | Yes             | No             | Yes             | Yes             |
| DsMdL7ErrorHandling_gr       | PK_DSMDL7ERRORHANDLING_GR  | Yes             | No             | Yes             | Yes             |
| DsMdMeasuredParameter        | PK_DSMDMEASUREDPARAMETER   | Yes             | No             | Yes             | Yes             |
| DsMdMultipleDateTimePeriod   | PK_DSMDMULTIPLEDATETIMEPERIOD  | Yes             | No             | Yes             | Yes             |
| DsMdMultipleTypeCollection   | PK_DSMDMULTIPLETYPECOLLECTION  | Yes             | No             | Yes             | Yes             |
| DsMdOperationMode            | PK_DSMDOPERATIONMODE   | Yes             | No             | Yes             | Yes             |
| DsMdOperatorConversion       | pk_dsmoperatorconversion   | Yes             | No             | Yes             | Yes             |
| DsMdOrbitCalcSpatialDomain   | PK_DSMDORBITCALCSPATIALDOMAIN  | Yes             | No             | Yes             | Yes             |
| DsMdOrbitCalculatedSpatial   | PK_DSMDORBITCALCULATEDSPATIAL  | Yes             | No             | Yes             | Yes             |
| DsMdOrbitPolygons            | PK_DSMDORBITPOLYGONS<br>xDsMdOrbitPolygons                               | Yes<br>No       | No<br>No       | Yes<br>Yes      | No<br>Yes       |
| DsMdParmToTableVector        | PK_DSMDPARMTOTABLEVECTOR   | Yes             | No             | Yes             | Yes             |
| DsMdPersonOrganizationXref   | PK_DSMDPERSONORGANIZATIONXREF  | Yes             | No             | Yes             | Yes             |
| DsMdPGEGroup                 | PK_DSMDPGEGROUP  | Yes             | No             | Yes             | Yes             |

**Table 4-2. Index List (5 of 6)**

| Table Name                   | Index Name   | PK        | FK         | U          | C         |
|------------------------------|--|-----------|------------|------------|-----------|
| DsMdPlanarCoordinateSystems  | PK_DSMDPLANARCOORDINATESYSTEMS                                   | Yes       | No         | Yes        | Yes       |
| DsMdPlatform                 | PK_DSMDPLATFORM<br>xDsMdPlatform                                 | Yes<br>No | No<br>No   | Yes<br>Yes | Yes<br>No |
| DsMdPlatformCharacteristic   | PK_DSMDPLATFORMCHARACTERISTIC                                    | Yes       | No         | Yes        | Yes       |
| DsMdPlatInstrCode            | PK_DSMDPLATINSTRCODE   | Yes       | No         | Yes        | Yes       |
| DsMdProcessingHistory        | PK_DSMDPROCESSINGHISTORY<br>xDsMdProcessingHistoryDate           | Yes<br>No | No<br>No   | Yes<br>No  | Yes<br>No |
| DsMdProcessHistFileStorage   | PK_DSMDPROCESSHISTFILESTORAGE<br>xDsMdProcessHistFileStorage     | Yes<br>No | No<br>No   | Yes<br>No  | Yes<br>No |
| DsMdProcessingQA             | PK_DSMDPROCESSINGQA  | Yes       | No         | Yes        | Yes       |
| DsMdProductDbXref            | PK_DSMDPRODUCTDBXREF   | Yes       | No         | Yes        | Yes       |
| DsMdQaGranule                | PK_DSMDQAGRANULE<br>xDsMdGranuleDate                             | Yes<br>No | No<br>No   | Yes<br>No  | Yes<br>No |
| DsMdQaGranuleFileStorage     | PK_DsMdQAGRANULEFILESTORAGE<br>xDsMdQaGranuleFileStorage         | No<br>No  | No<br>No   | Yes<br>No  | Yes<br>No |
| DsMdQaGranuleXref            | PK_DSMDQAGRANULEXREF<br>xDsMdQaGranuleXref                       | Yes<br>No | Yes<br>Yes | Yes<br>No  | Yes<br>No |
| DsMdQualityTextComment       | PK_DSMDQUALITYTEXTCOMMENT  | Yes       | No         | Yes        | Yes       |
| DsMdRangeDateTime            | PK_DSMDRANGEDATETIME   | Yes       | No         | Yes        | Yes       |
| DsMdRegularPeriodic          | PK_DSMDREGULARPERIODIC   | Yes       | No         | Yes        | Yes       |
| DsMdSDSRVLookup              | PK_DSMDLOOKUP  | Yes       | No         | Yes        | Yes       |
| DsMdSensor                   | PK_DSMDSENSOR<br>xDsMdSensor                                     | Yes<br>No | No<br>No   | Yes<br>Yes | Yes<br>No |
| DsMdSensorCharacteristic     | PK_DSMDSENSORCHARACTERISTIC                                      | Yes       | No         | Yes        | Yes       |
| DsMdSingleDateTime           | PK_DSMDSINGLEDATETIME  | Yes       | No         | Yes        | Yes       |
| DsMdSpatial                  | PK_DSMDSPATIAL   | Yes       | No         | Yes        | Yes       |
| DsMdSpatialKeyword           | PK_DSMDSPATIALKEYWORD  | Yes       | No         | Yes        | Yes       |
| DsMdSSAPComponent            | PK_DSMDSSAPCOMPONENT   | Yes       | No         | Yes        | Yes       |
| DsMdSSAPComponentAPVersion   | PK_DSMDSSAPCOMPONENTAPVERSION                                    | Yes       | No         | Yes        | Yes       |
| DsMdSSAPComponentFileStorage | PK_DSMDSSAPCOMPONENTFILESTORAGE<br>xDsMdSSAPComponentFileStorage | Yes<br>No | No<br>No   | Yes<br>No  | Yes<br>No |
| DsMdStagingTable             | xDsMdStagingTableIFN   | No        | No         | Yes        | Yes       |
| DsMdTelephoneNumber          | PK_DSMDTELEPHONENUMBERS  | Yes       | No         | Yes        | Yes       |
| DsMdTemporal                 | PK_DSMDTEMPORAL  | Yes       | No         | Yes        | Yes       |
| DsMdTemporalKeyword          | PK_DSMDTEMPORALKEYWORD   | Yes       | No         | Yes        | Yes       |
| DsMdUninterpretedData        | PK_DSMDUNINTERPRETEDDATA   | Yes       | No         | Yes        | Yes       |
| DsMdUnloadList               | pk_dsmdundloadlist   | Yes       | No         | Yes        | Yes       |
| DsMdUpdateSequence           | pk_dsmduptateseq   | Yes       | No         | Yes        | Yes       |
| DsMdUserCommentDocument      | PK_DSMDUSERCOMMENTDOCUMENT                                       | Yes       | No         | Yes        | Yes       |

**Table 4-2. Index List (6 of 6)**

| Table Name             | Index Name   | PK              | FK             | U                | C               |
|------------------------|--|-----------------|----------------|------------------|-----------------|
| DsMdValidationDocument | PK_DSMDVALIDATIONDOCUMENT  | Yes             | No             | Yes              | Yes             |
| DsMdXAR                | PK_DSMDXAR   | Yes             | No             | Yes              | Yes             |
| DsSiReqDomain          | PK_DSSIREQDOMAIN   | Yes             | No             | Yes              | Yes             |
| DsSiRequest            | PK_DSSIREQUEST<br>xDsSiRequestrpclD<br>xDsSiRequestPriorityCrTime              | Yes<br>No<br>No | No<br>No<br>No | Yes<br>Yes<br>No | No<br>Yes<br>No |
| DsSiAcqBand            | PK_DSSIACQBAND   | Yes             | Yes            | Yes              | Yes             |
| DsSiAcqPolygon         | PK_DSSIACQPOLYGON  | Yes             | Yes            | Yes              | Yes             |
| DsSiAcquireCmd         | PK_DSSIACQUIRECMD<br>xDsSiAcquireCmdreqIdCID                                   | Yes<br>No       | No<br>No       | Yes<br>Yes       | Yes<br>No       |
| DsSiAcquireCmdFileInfo | PK_DSSIACQUIRECMDFILEINFO  | Yes             | Yes            | Yes              | Yes             |
| DsSiURs                | PK_DSSIURS   | Yes             | Yes            | Yes              | Yes             |
| DsSiRequestDetails     | PK_DSSREQUESTDETAILS<br>XDssSiRequestDetailsrpclD<br>xDsSiRequestDetailsCrTime | Yes<br>No<br>No | No<br>No<br>No | Yes<br>Yes<br>No | No<br>Yes<br>No |
| DsSiParameters         | PK_DSSIPARAMETERS  | Yes             | Yes            | Yes              | Yes             |
| DsQAMUTESDTSite        | PK_DSQAMUTESDTSITE   | Yes             | No             | Yes              | Yes             |
| EcDbDatabaseVersions   | PK_Ecdbversions  | Yes             | No             | Yes              | Yes             |

## 4.2 Segments

Sybase supports the declaration of segments. A segment is a named pointer to a storage device(s). Segments are used to physically allocate a database object to a particular storage device. Segments defined for the SDSRV and all other subsystem databases are described in Table 4-3.

**Table 4-3. Segment Descriptions**

| Segment Name  | Description  |
|---------------|--|
| default       | Default data segment used if no other segment specified in the create statement. |
| logsegment    | SYSLOGS, Transaction Logs  |
| systemsegment | System tables and indexes.   |
| SDSOPSDAT01   | SDSRV OPS mode data segment.   |
| SDSOPSDIDX01  | SDSRV OPS mode index segment.  |
| SDSTS1DAT01   | SDSRV TS1 mode data segment.   |
| SDSTS1IDX01   | SDSRV TS1 mode index segment.  |
| SDSTS2DAT01   | SDSRV TS2 mode data segment.   |
| SDSTS2IDX01   | SDSRV TS2 mode index segment.  |

### **4.3 Caches**

A cache is a block of memory that is used by Sybase to retain and manage pages that are currently being processed. By default, each database contains three caches:

- Data cache – retains most recently accessed data and index pages
- Procedure cache – retains most recently accessed stored procedure pages
- User transaction log cache – transaction log pages that have not yet been written to disk for each user

The size of each of these default caches is a configurable item which must be managed on a per DAAC basis. These caches may be increased or decreased by the DAAC DBA as needed.

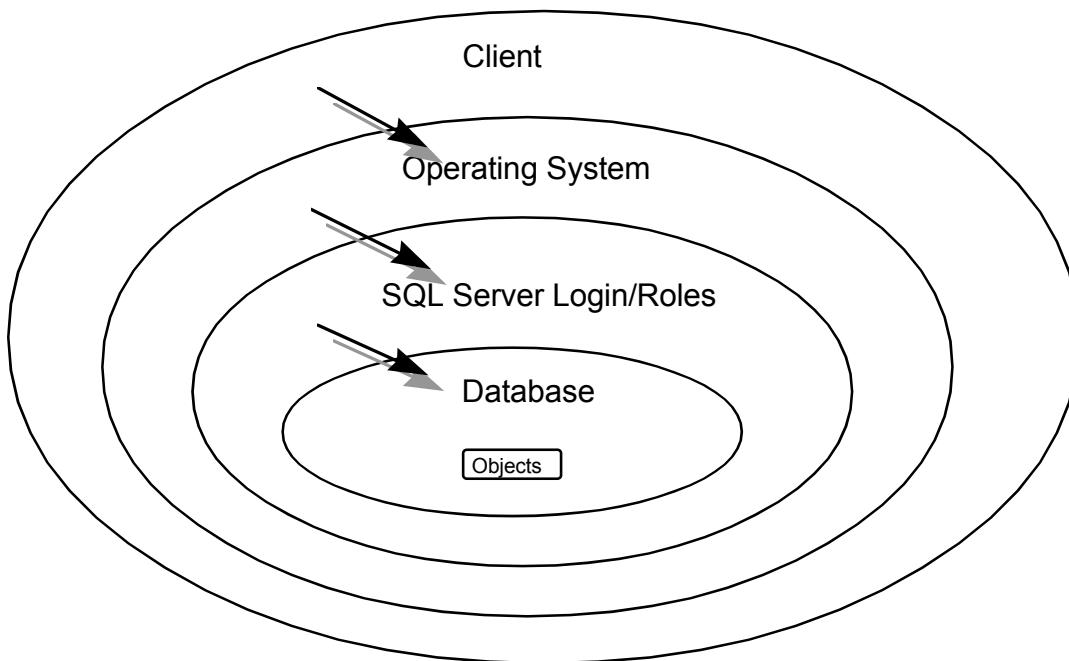
The data cache can be further subdivided into named caches. A *named cache* is a block of memory that is named and used by the DBMS to store data pages for select tables and/or indexes. Assigning a database table to named cache causes accessed pages to be loaded into memory and retained. The named cache does not need to be allocated to accommodate the entire database table since the DBMS manages the cache according to use. Named caches greatly increase performance by eliminating the time associated for disk input and output (I/O). There are no named caches that are currently defined for the SDSRVSubsystem database. Named caches may be defined as the memory usage of the SDSRV database becomes more well known and the DAACs move into an operational environment. As named caches are defined this portion of the document will be updated.

## 5. Database Security

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### 5.1 Initial Users

The database security discussed within this section is bounded to security implementation within the Sybase SQL Server DBMS. A Sybase general approach to security is adopted as illustrated in Figure 5-1.



**Figure 5-1. Sybase General Approach to SQL Server Security<sup>1</sup>**

The client (user) requires a SQL Server login to access the DBMS. The login is assigned to a user with certain related permissions for gaining access to particular objects (e.g., database tables, views, commands) within the database. The System Administrator may grant or revoke objects permissions for a login individually or based on defined group or roles.

Groups are a means of logically associating users with similar data access needs. Once a group has been defined, object and command permissions can be granted to that group. A user who is member of a group inherits all of the permissions granted to that group. No groups have been initially defined in the <SUBSYS> Subsystem “default database. The DAACs should define

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<sup>1</sup> Reference Sybase Student Guide: *Advanced SQL Server Administration*.

database groups to support the database security requirements of their individual DAACs. Security for local DAAC users should be controlled by assigning each user to the appropriate group.

Roles were introduced in Sybase to allow a structured means for granting users the permissions needed to perform standard database administration activities and also provide a means for easily identifying such users. There are six pre-defined roles that may be assigned to a user. A definition of each of these roles follows, as well as a description of the types of activities that may be performed by each role.

**System Administrator** (*sa\_role*): This role is used to grant a specific user permissions needed to perform standard system administrator duties including:

- installing SQL server and specific SQL server modules
- managing the allocation of physical storage
- tuning configuration parameters
- creating databases

**Site Security Officer** (*sso\_role*): This role is used to grant a specific user the permissions needed to maintain SQL server security including:

- adding server logins
- administrating passwords
- managing the audit system
- granting users all roles except the *sa\_role*

**Operator** (*oper\_role*): This role is used to grant a specific user the permissions needed to perform standard functions for the database including:

- dumping transactions and databases
- loading transactions and databases

**Navigator** (*navigator\_role*): This role is used to grant a specific user the permissions needed to manage the navigation server.

**Replication** (*replication\_role*): This role is used to grant a specific user the permissions needed to manage the replication server.

**Sybase Technical Support** (*sybase\_ts\_role*): This role is used to grant a specific user the permissions needed to execute *database consistency checker* (*dbcc*), a Sybase supplied utility supporting commands that are normally outside of the realm of routine system administrator activities.

The DAACs should review these roles and assign them to the appropriate login and/or groups.

## **5.2 Login/Group Object Permissions**

During initial database installation logins used by the ECS custom code were created and permissions assigned for access to the SDSRV Subsystem database. In addition, special database installation login, sdsrv\_role, was created to support database installation needs. For each login, the level of access is limited to that associated with their login, group or assigned group/role. Object Permissions are set within the installation scripts of the SDSRV Subsystem for each object and group/role.

Upon initial installation the following users will have access to SDSRV database. The level of access is limited to that associated with their assigned group and/or role. A complete definition of each of these groups and roles is given below in Table 5-1.

**Table 5-1. Logins**

| <b>Login Name</b>     | <b>Default Database</b> | <b>Group/role</b> |
|-----------------------|-------------------------|-------------------|
| EcDsScienceDataServer | EcDsScienceDataServer1  | sdsrv             |
| EcDsHdfEosServer      | EcDsScienceDataServer1  | sdsrv             |
| Sdsrv_role            | EcDsScienceDataServer1  | sa_role           |

Permissions are identified in Table 5-3. A specification of the object permissions is contained in Table 5-2.

**Table 5-2. Permission Key**

| <b>Permission</b> | <b>Description</b> |
|-------------------|--------------------|
| A                 | All                |
| S                 | Select             |
| I                 | Insert             |
| U                 | Update             |
| D                 | Delete             |
| E                 | Execute            |

**Table 5-3. Object Permissions (1 of 7)**

| Role    | Group/SYBASE LOGIN | Object                         | Permissions Granted |   |   |   |   |   |
|---------|--------------------|--------------------------------|---------------------|---|---|---|---|---|
|         |                    |                                | A                   | S | I | U | D | E |
| None    | sa                 | All                            | Y                   |   |   |   |   |   |
| sa_role | Sdsrv_role         | All                            | Y                   |   |   |   |   |   |
|         | sdsrv              | DsBtNotifierQueue              |                     |   |   |   |   |   |
|         |                    | DsDeDictionaryAttribute        |                     |   |   |   |   |   |
|         |                    | DsDeDictionaryContent          |                     |   |   |   |   |   |
|         |                    | DsDeDictionaryRule             |                     |   |   |   |   |   |
|         |                    | DsDeECSKeywordValids           |                     |   |   |   |   |   |
|         |                    | DsDeEvent                      |                     |   |   |   |   |   |
|         |                    | DsGeESDTConfiguredType         |                     |   |   |   |   |   |
|         |                    | DsMdAdditionalAttributes       |                     |   |   |   |   |   |
|         |                    | DsMdAlgorithmPackage           |                     |   |   |   |   |   |
|         |                    | DsMdAlgorithmPkgFileStorage    |                     |   |   |   |   |   |
|         |                    | DsMdAltitudeResolution         |                     |   |   |   |   |   |
|         |                    | DsMdAnalysisSource             |                     |   |   |   |   |   |
|         |                    | DsMdAncillaryInput             |                     |   |   |   |   |   |
|         |                    | DsMdAncillaryInputGranule      |                     |   |   |   |   |   |
|         |                    | DsMdApContactXref              |                     |   |   |   |   |   |
|         |                    | DsMdAPSAPCComponentXref        |                     |   |   |   |   |   |
|         |                    | DsMdAttributeConversion        |                     |   |   |   |   |   |
|         |                    | DsMdAttributeList              |                     |   |   |   |   |   |
|         |                    | DsMdAttributeTableXref         |                     |   |   |   |   |   |
|         |                    | DsMdBaseDependent              |                     |   |   |   |   |   |
|         |                    | DsMdBrowse                     |                     |   |   |   |   |   |
|         |                    | DsMdBrowseFileStorage          |                     |   |   |   |   |   |
|         |                    | DsMdBrowseGranuleXref          |                     |   |   |   |   |   |
|         |                    | DsMdCampaign                   |                     |   |   |   |   |   |
|         |                    | DsMdCIBoundingRectangle        | Y                   |   |   |   |   |   |
|         |                    | DsMdCICircle                   | Y                   |   |   |   |   |   |
|         |                    | DsMdCIGPolyGPolygonContainer   | Y                   |   |   |   |   |   |
|         |                    | DsMdCIGPolygon                 | Y                   |   |   |   |   |   |
|         |                    | DsMdCIPoint                    | Y                   |   |   |   |   |   |
|         |                    | DsMdCollBrowseXref             |                     |   |   |   |   |   |
|         |                    | DsMdCollDisciplineKeywordXref  |                     |   |   |   |   |   |
|         |                    | DsMdCollectionAddnlAttribsXref |                     |   |   |   |   |   |
|         |                    | DsMdCollectionAnalysisXref     |                     |   |   |   |   |   |
|         |                    | DsMdCollectionAPXref           |                     |   |   |   |   |   |
|         |                    | DsMdCollectionAssociation      |                     |   |   |   |   |   |
|         |                    | DsMdCollectionCampaignXref     |                     |   |   |   |   |   |
|         |                    | DsMdCollectionContactXref      |                     |   |   |   |   |   |
|         |                    | DsMdCollectionGranuleXref      |                     |   |   |   |   |   |
|         |                    | DsMdCollectionInstrumentXref   |                     |   |   |   |   |   |
|         |                    | DsMdCollectionPlatformXref     |                     |   |   |   |   |   |
|         |                    | DsMdCollections                |                     |   |   |   |   |   |
|         |                    | DsMdCollectionSensorXref       |                     |   |   |   |   |   |
|         |                    | DsMdCollFloatInfoContent       |                     |   |   |   |   |   |
|         |                    | DsMdCollIntegerInfoContent     |                     |   |   |   |   |   |
|         |                    | DsMdCollReview                 |                     |   |   |   |   |   |

**Table 5-3. Object Permissions (2 of 7)**

| Role | Group/SYBASE LOGIN | Object                        | Permissions Granted |   |   |   |   |   |
|------|--------------------|-------------------------------|---------------------|---|---|---|---|---|
|      |                    |                               | A                   | S | I | U | D | E |
|      |                    | DsMdCollStorageMedium         |                     |   |   |   |   |   |
|      |                    | DsMdCollStringInfoContent     |                     |   |   |   |   |   |
|      |                    | DsMdCollURLInfo               |                     |   |   |   |   |   |
|      |                    | DsMdCollVerticalSpatialDomain |                     |   |   |   |   |   |
|      |                    | DsMdCollZoneIdentifier        |                     |   |   |   |   |   |
|      |                    | DsMdCommandConversion         |                     |   |   |   |   |   |
|      |                    | DsMdContact                   |                     |   |   |   |   |   |
|      |                    | DsMdContactAddress            |                     |   |   |   |   |   |
|      |                    | DsMdContactOrganizations      |                     |   |   |   |   |   |
|      |                    | DsMdContactPersons            |                     |   |   |   |   |   |
|      |                    | DsMdCSDTDescription           |                     |   |   |   |   |   |
|      |                    | DsMdDAP                       |                     |   |   |   |   |   |
|      |                    | DsMdDAPFileStorage            |                     |   |   |   |   |   |
|      |                    | DsMdDeletedGranules           |                     |   |   |   |   |   |
|      |                    | DsMdDepthResolution           |                     |   |   |   |   |   |
|      |                    | DsMdDisciplineKeywords        |                     |   |   |   |   |   |
|      |                    | DsMdECSPparameterKeywords     |                     |   |   |   |   |   |
|      |                    | DsMdEmailAddress              |                     |   |   |   |   |   |
|      |                    | DsMdFileStorage               |                     |   |   |   |   |   |
|      |                    | DsMdGranuleAnalysisXref       |                     |   |   |   |   |   |
|      |                    | DsMdGranuleCampaignXref       |                     |   |   |   |   |   |
|      |                    | DsMdGranuleInstrumentXref     |                     |   |   |   |   |   |
|      |                    | DsMdGranuleLocality           |                     |   |   |   |   |   |
|      |                    | DsMdGranulePlatformXref       |                     |   |   |   |   |   |
|      |                    | DsMdGranuleReview             |                     |   |   |   |   |   |
|      |                    | DsMdGranules                  |                     |   |   |   |   |   |
|      |                    | DsMdGranuleSensorXref         |                     |   |   |   |   |   |
|      |                    | DsMdGranuleVersions           |                     |   |   |   |   |   |
|      |                    | DsMdGrBoundingClientRect      | Y                   |   |   |   |   |   |
|      |                    | DsMdGrCircle                  | Y                   |   |   |   |   |   |
|      |                    | DsMdGrFloatInfoContent        |                     |   |   |   |   |   |
|      |                    | DsMdGrGPolygGPolygonContainer | Y                   |   |   |   |   |   |
|      |                    | DsMdGrGPolygon                | Y                   |   |   |   |   |   |
|      |                    | DsMdGrIntegerInfoContent      |                     |   |   |   |   |   |
|      |                    | DsMdGrPoint                   | Y                   |   |   |   |   |   |
|      |                    | DsMdGrSensorCharacteristics   |                     |   |   |   |   |   |
|      |                    | DsMdGrStorageMedium           |                     |   |   |   |   |   |
|      |                    | DsMdGrStringInfoContent       |                     |   |   |   |   |   |
|      |                    | DsMdGrVerticalSpatialDomain   |                     |   |   |   |   |   |
|      |                    | DsMdIdentifier                |                     |   |   |   |   |   |
|      |                    | DsMdInputGranule              |                     |   |   |   |   |   |
|      |                    | DsMdInsertSequence            |                     |   |   |   |   |   |
|      |                    | DsMdInstrument                |                     |   |   |   |   |   |
|      |                    | DsMdInstrumentCharacteristic  |                     |   |   |   |   |   |
|      |                    | DsMdJoins                     |                     |   |   |   |   |   |
|      |                    | DsMdKeyDependency             |                     |   |   |   |   |   |
|      |                    | DsMdLocality                  |                     |   |   |   |   |   |

**Table 5-3. Object Permissions (3 of 7)**

| Role | Group/SYBASE LOGIN | Object                       | Permissions Granted |   |   |   |   |   |
|------|--------------------|------------------------------|---------------------|---|---|---|---|---|
|      |                    |                              | A                   | S | I | U | D | E |
|      |                    | DsMdL7ErrorHandling          |                     |   |   |   |   |   |
|      |                    | DsMdL7ErrorHandling_gr       |                     |   |   |   |   |   |
|      |                    | DsMdMeasuredParameter        |                     |   |   |   |   |   |
|      |                    | DsMdMultipleDateTimePeriod   |                     |   |   |   |   |   |
|      |                    | DsMdMultipleTypeCollection   |                     |   |   |   |   |   |
|      |                    | DsMdOperationMode            |                     |   |   |   |   |   |
|      |                    | DsMdOperatorConversion       |                     |   |   |   |   |   |
|      |                    | DsMdOrbitCalcSpatialDomain   |                     |   |   |   |   |   |
|      |                    | DsMdOrbitCalculatedSpatial   |                     |   |   |   |   |   |
|      |                    | DsMdOrbitPolygons            | Y                   |   |   |   |   |   |
|      |                    | DsMdOrbitPolygons_Orbit      | Y                   |   |   |   |   |   |
|      |                    | DsMdParmToTableVector        |                     |   |   |   |   |   |
|      |                    | DsMdPersonOrganizationXref   |                     |   |   |   |   |   |
|      |                    | DsMdPGEGroup                 |                     |   |   |   |   |   |
|      |                    | DsMdPlanarCoordinateSystems  |                     |   |   |   |   |   |
|      |                    | DsMdPlatform                 |                     |   |   |   |   |   |
|      |                    | DsMdPlatformCharacteristic   |                     |   |   |   |   |   |
|      |                    | DsMdPlatInstrCode            |                     |   |   |   |   |   |
|      |                    | DsMdProcessHistFileStorage   |                     |   |   |   |   |   |
|      |                    | DsMdProcessingHistory        |                     |   |   |   |   |   |
|      |                    | DsMdProcessingQA             |                     |   |   |   |   |   |
|      |                    | DsMdProductDbXref            |                     |   |   |   |   |   |
|      |                    | DsMdQaGranule                |                     |   |   |   |   |   |
|      |                    | DsMdQaGranuleFileStorage     |                     |   |   |   |   |   |
|      |                    | DsMdQaGranuleXref            |                     |   |   |   |   |   |
|      |                    | DsMdQualityTextComment       |                     |   |   |   |   |   |
|      |                    | DsMdRangeDateTime            |                     |   |   |   |   |   |
|      |                    | DsMdRegularPeriodic          |                     |   |   |   |   |   |
|      |                    | DsMdSDSRVLookup              |                     |   |   |   |   |   |
|      |                    | DsMdSensor                   |                     |   |   |   |   |   |
|      |                    | DsMdSensorCharacteristic     |                     |   |   |   |   |   |
|      |                    | DsMdSingleDateTime           |                     |   |   |   |   |   |
|      |                    | DsMdSpatial                  |                     |   |   |   |   |   |
|      |                    | DsMdSpatialKeyword           |                     |   |   |   |   |   |
|      |                    | DsMdSSAPComponent            |                     |   |   |   |   |   |
|      |                    | DsMdSSAPComponentAPVersion   |                     |   |   |   |   |   |
|      |                    | DsMdSSAPComponentfileStorage |                     |   |   |   |   |   |
|      |                    | DsMdStagingTime              |                     |   |   |   |   |   |
|      |                    | DsMdTelephoneNumbers         |                     |   |   |   |   |   |
|      |                    | DsMdTemporal                 |                     |   |   |   |   |   |
|      |                    | DsMdTemporalKeyword          |                     |   |   |   |   |   |
|      |                    | DsMdTemporalSize             |                     |   |   |   |   |   |
|      |                    | DsMdUnloadList               |                     |   |   |   |   |   |
|      |                    | DsMdUpdateSequence           |                     |   |   |   |   |   |
|      |                    | DsMdUninterpretedData        |                     |   |   |   |   |   |
|      |                    | DsMdUserCommentDocument      |                     |   |   |   |   |   |
|      |                    | DsMdValidationDocument       |                     |   |   |   |   |   |

**Table 5-3. Object Permissions (4 of 7)**

| Role   | Group/SYBASE LOGIN | Object                         | Permissions Granted |   |   |   |   |   |
|--------|--------------------|--------------------------------|---------------------|---|---|---|---|---|
|        |                    |                                | A                   | S | I | U | D | E |
|        |                    | DsMdXAR                        |                     |   |   |   |   |   |
|        |                    | DsSiAcqBand                    |                     |   |   |   |   |   |
|        |                    | DsSiAcqPolygon                 |                     |   |   |   |   |   |
|        |                    | DsSiAcquireCmd                 |                     |   |   |   |   |   |
|        |                    | DsSiAcquireCmdFileInfo         |                     |   |   |   |   |   |
|        |                    | DsSiParameters                 |                     |   |   |   |   |   |
|        |                    | DsSiReqDomain                  |                     |   |   |   |   |   |
|        |                    | DsSiRequest                    |                     |   |   |   |   |   |
|        |                    | DsSiRequestDetails             |                     |   |   |   |   |   |
|        |                    | DsSiURs                        |                     |   |   |   |   |   |
|        |                    | EcDbDatabaseVersions           |                     |   |   |   |   |   |
| public |                    | DsBtNotifierQueue              |                     |   |   |   |   |   |
|        |                    | DsDeDictionaryAttribute        |                     |   |   |   |   |   |
|        |                    | DsDeDictionaryContent          |                     |   |   |   |   |   |
|        |                    | DsDeDictionaryRule             |                     |   |   |   |   |   |
|        |                    | DsDeECSKeywordValids           |                     |   |   |   |   |   |
|        |                    | DsDeEvent                      |                     |   |   |   |   |   |
|        |                    | DsGeESDTConfiguredType         |                     |   |   |   |   |   |
|        |                    | DsMdAdditionalAttributes       |                     |   |   |   |   |   |
|        |                    | DsMdAlgorithmPackage           |                     |   |   |   |   |   |
|        |                    | DsMdAltitudeResolution         |                     |   |   |   |   |   |
|        |                    | DsMdAnalysisSource             |                     |   |   |   |   |   |
|        |                    | DsMdAncillaryInput             |                     |   |   |   |   |   |
|        |                    | DsMdAncillaryInputGranule      |                     |   |   |   |   |   |
|        |                    | DsMdApContactXref              |                     |   |   |   |   |   |
|        |                    | DsMdAPSAPComponentXref         |                     |   |   |   |   |   |
|        |                    | DsMdAttributeConversion        |                     |   |   |   |   |   |
|        |                    | DsMdAttributeList              |                     |   |   |   |   |   |
|        |                    | DsMdAttributeTableXref         |                     |   |   |   |   |   |
|        |                    | DsMdBaseDependent              |                     |   |   |   |   |   |
|        |                    | DsMdBrowse                     |                     |   |   |   |   |   |
|        |                    | DsMdBrowseGranuleXref          |                     |   |   |   |   |   |
|        |                    | DsMdCampaign                   |                     |   |   |   |   |   |
|        |                    | DsMdCIBoundingRectangle        |                     |   |   |   |   |   |
|        |                    | DsMdCIBoundingRectangle_R      |                     |   |   |   |   |   |
|        |                    | DsMdCICircle                   |                     |   |   |   |   |   |
|        |                    | DsMdCIGPolygGPolygonContainer  |                     |   |   |   |   |   |
|        |                    | DsMdCIGPolygon                 |                     |   |   |   |   |   |
|        |                    | DsMdCIPoint                    |                     |   |   |   |   |   |
|        |                    | DsMdCollBrowseXref             |                     |   |   |   |   |   |
|        |                    | DsMdCollDisciplineKeywordXref  |                     |   |   |   |   |   |
|        |                    | DsMdCollectionAddnlAttribsXref |                     |   |   |   |   |   |
|        |                    | DsMdCollectionAnalysisXref     |                     |   |   |   |   |   |
|        |                    | DsMdCollectionAPXref           |                     |   |   |   |   |   |
|        |                    | DsMdCollectionAssociation      |                     |   |   |   |   |   |
|        |                    | DsMdCollectionCampaignXref     |                     |   |   |   |   |   |
|        |                    | DsMdCollectionContactXref      |                     |   |   |   |   |   |

**Table 5-3. Object Permissions (5 of 7)**

| Role | Group/SYBASE LOGIN | Object                         | Permissions Granted |   |   |   |   |   |
|------|--------------------|--------------------------------|---------------------|---|---|---|---|---|
|      |                    |                                | A                   | S | I | U | D | E |
|      |                    | DsMdCollectionGranuleXref      |                     |   |   |   |   |   |
|      |                    | DsMdCollectionInstrumentXref   |                     |   |   |   |   |   |
|      |                    | DsMdCollectionPlatformXref     |                     |   |   |   |   |   |
|      |                    | DsMdCollections                |                     |   |   |   |   |   |
|      |                    | DsMdCollectionSensorXref       |                     |   |   |   |   |   |
|      |                    | DsMdCollFloatInfoContent       |                     |   |   |   |   |   |
|      |                    | DsMdCollIntegerInfoContent     |                     |   |   |   |   |   |
|      |                    | DsMdCollReview                 |                     |   |   |   |   |   |
|      |                    | DsMdCollStorageMedium          |                     |   |   |   |   |   |
|      |                    | DsMdCollStringInfoContent      |                     |   |   |   |   |   |
|      |                    | DsMdCollVerticalSpatialDomain  |                     |   |   |   |   |   |
|      |                    | DsMdCollZoneIdentifier         |                     |   |   |   |   |   |
|      |                    | DsMdCommandConversion          |                     |   |   |   |   |   |
|      |                    | DsMdContact                    |                     |   |   |   |   |   |
|      |                    | DsMdContactAddress             |                     |   |   |   |   |   |
|      |                    | DsMdContactOrganizations       |                     |   |   |   |   |   |
|      |                    | DsMdContactPersons             |                     |   |   |   |   |   |
|      |                    | DsMdCSDTDescription            |                     |   |   |   |   |   |
|      |                    | DsMdDAP                        |                     |   |   |   |   |   |
|      |                    | DsMdDepthResolution            |                     |   |   |   |   |   |
|      |                    | DsMdDisciplineKeywords         |                     |   |   |   |   |   |
|      |                    | DsMdECSParameterKeywords       |                     |   |   |   |   |   |
|      |                    | DsMdEmailAddress               |                     |   |   |   |   |   |
|      |                    | DsMdFileStorage                |                     |   |   |   |   |   |
|      |                    | DsMdGranuleAnalysisXref        |                     |   |   |   |   |   |
|      |                    | DsMdGranuleCampaignXref        |                     |   |   |   |   |   |
|      |                    | DsMdGranuleInstrumentXref      |                     |   |   |   |   |   |
|      |                    | DsMdGranuleLocality            |                     |   |   |   |   |   |
|      |                    | DsMdGranulePlatformXref        |                     |   |   |   |   |   |
|      |                    | DsMdGranuleReview              |                     |   |   |   |   |   |
|      |                    | DsMdGranules                   |                     |   |   |   |   |   |
|      |                    | DsMdGranulesAncillaryInputXref |                     |   |   |   |   |   |
|      |                    | DsMdGranuleSensorXref          |                     |   |   |   |   |   |
|      |                    | DsMdGranulesOrbitParmXref      |                     |   |   |   |   |   |
|      |                    | DsMdGranuleVersions            |                     |   |   |   |   |   |
|      |                    | DsMdGrBoundingBox              |                     |   |   |   |   |   |
|      |                    | DsMdGrBoundingBox_R            |                     |   |   |   |   |   |
|      |                    | DsMdGrCircle                   |                     |   |   |   |   |   |
|      |                    | DsMdGrFloatInfoContent         |                     |   |   |   |   |   |
|      |                    | DsMdGrGPolygGPolygonContainer  |                     |   |   |   |   |   |
|      |                    | DsMdGrGPolygon                 |                     |   |   |   |   |   |
|      |                    | DsMdGrIntegerInfoContent       |                     |   |   |   |   |   |
|      |                    | DsMdGrPoint                    |                     |   |   |   |   |   |
|      |                    | DsMdGrSensorCharacteristics    |                     |   |   |   |   |   |
|      |                    | DsMdGrStorageMedium            |                     |   |   |   |   |   |
|      |                    | DsMdGrStringInfoContent        |                     |   |   |   |   |   |
|      |                    | DsMdGrVerticalSpatialDomain    |                     |   |   |   |   |   |

**Table 5-3. Object Permissions (6 of 7)**

| Role | Group/SYBASE LOGIN | Object                       | Permissions Granted |   |   |   |   |   |
|------|--------------------|------------------------------|---------------------|---|---|---|---|---|
|      |                    |                              | A                   | S | I | U | D | E |
|      |                    | DsMdIdentifier               |                     |   |   |   |   |   |
|      |                    | DsMdInputGranule             |                     |   |   |   |   |   |
|      |                    | DsMdInsertSequence           |                     |   |   |   |   |   |
|      |                    | DsMdInstrument               |                     |   |   |   |   |   |
|      |                    | DsMdInstrumentCharacteristic |                     |   |   |   |   |   |
|      |                    | DsMdJoins                    |                     |   |   |   |   |   |
|      |                    | DsMdKeyDependency            |                     |   |   |   |   |   |
|      |                    | DsMdL7ErrorHandling          |                     |   |   |   |   |   |
|      |                    | DsMdL7ErrorHandling_gr       |                     |   |   |   |   |   |
|      |                    | DsMdLocality                 |                     |   |   |   |   |   |
|      |                    | DsMdMeasuredParameter        |                     |   |   |   |   |   |
|      |                    | DsMdMultipleDateTimePeriod   |                     |   |   |   |   |   |
|      |                    | DsMdMultipleTypeCollection   |                     |   |   |   |   |   |
|      |                    | DsMdOperationMode            |                     |   |   |   |   |   |
|      |                    | DsMdOperatorConversion       |                     |   |   |   |   |   |
|      |                    | DsMdOrbitCalcSpatialDomain   |                     |   |   |   |   |   |
|      |                    | DsMdOrbitCalculatedSpatial   |                     |   |   |   |   |   |
|      |                    | DsMdOrbitParametersGranule   |                     |   |   |   |   |   |
|      |                    | DsMdOrbitPolygons            |                     |   |   |   |   |   |
|      |                    | DsMdOrbitPolygons_Orbit      |                     |   |   |   |   |   |
|      |                    | DsMdParmToTableVector        |                     |   |   |   |   |   |
|      |                    | DsMdPersonOrganizationXref   |                     |   |   |   |   |   |
|      |                    | DsMdPGEGroup                 |                     |   |   |   |   |   |
|      |                    | DsMdPlanarCoordinateSystems  |                     |   |   |   |   |   |
|      |                    | DsMdPlatform                 |                     |   |   |   |   |   |
|      |                    | DsMdPlatformCharacteristic   |                     |   |   |   |   |   |
|      |                    | DsMdPlatInstrCode            |                     |   |   |   |   |   |
|      |                    | DsMdProcessingHistory        |                     |   |   |   |   |   |
|      |                    | DsMdProcessingQA             |                     |   |   |   |   |   |
|      |                    | DsMdProductDbXref            |                     |   |   |   |   |   |
|      |                    | DsMdQaGranule                |                     |   |   |   |   |   |
|      |                    | DsMdQaGranuleXref            |                     |   |   |   |   |   |
|      |                    | DsMdQualityTextComment       |                     |   |   |   |   |   |
|      |                    | DsMdRangeDateTime            |                     |   |   |   |   |   |
|      |                    | DsMdRegularPeriodic          |                     |   |   |   |   |   |
|      |                    | DsMdSDSRVLookup              |                     |   |   |   |   |   |
|      |                    | DsMdSensor                   |                     |   |   |   |   |   |
|      |                    | DsMdSensorCharacteristic     |                     |   |   |   |   |   |
|      |                    | DsMdSingleDateTime           |                     |   |   |   |   |   |
|      |                    | DsMdSpatial                  |                     |   |   |   |   |   |
|      |                    | DsMdSpatialKeyword           |                     |   |   |   |   |   |
|      |                    | DsMdSSAPComponent            |                     |   |   |   |   |   |
|      |                    | DsMdSSAPComponentAPVersion   |                     |   |   |   |   |   |
|      |                    | DsMdTelephoneNumberNumbers   |                     |   |   |   |   |   |
|      |                    | DsMdTemporal                 |                     |   |   |   |   |   |
|      |                    | DsMdTemporalKeyword          |                     |   |   |   |   |   |
|      |                    | DsMdUnloadList               |                     |   |   |   |   |   |

**Table 5-3. Object Permissions (7 of 7)**

| Role | Group/SYBASE LOGIN | Object                  | Permissions Granted |   |   |   |   |   |
|------|--------------------|-------------------------|---------------------|---|---|---|---|---|
|      |                    |                         | A                   | S | I | U | D | E |
|      |                    | DsMdUpdateSequence      |                     |   |   |   |   |   |
|      |                    | DsMdUninterpretedData   |                     |   |   |   |   |   |
|      |                    | DsMdUserCommentDocument |                     |   |   |   |   |   |
|      |                    | DsMdValidationDocument  |                     |   |   |   |   |   |
|      |                    | DsMdXAR                 |                     |   |   |   |   |   |
|      |                    | DsSiAcqBand             |                     |   |   |   |   |   |
|      |                    | DsSiAcqPolygon          |                     |   |   |   |   |   |
|      |                    | DsSiAcquireCmd          |                     |   |   |   |   |   |
|      |                    | DsSiAcquireCmdFileInfo  |                     |   |   |   |   |   |
|      |                    | DsSiReqDomain           |                     |   |   |   |   |   |
|      |                    | DsSiRequest             |                     |   |   |   |   |   |
|      |                    | EcDbDatabaseVersions    |                     |   |   |   |   |   |

## 6. Scripts

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Sub-directories that support the creation of the SDSRV database are found in the ClearCase /ecs/formal/DSS/sdsrv/sybase/db directory. Each sub-directory has its own Imakefile. The entire schema is delivered by using the Makefile in the /ecs/formal/DSS/sdsrv/sybase/db directory which allows all the sub-directories to be delivered at the same time. The README file found in the /sybase/db directory provides information necessary to understand prior to running the scripts. The DsDbREADME file found in the ..sybase/db/tools directory contains documentation relevant to the installation process.

The directories have the following structure:

|          |   |   |
|----------|---|---|
| proc     | = | stored procedures   |
| tables   | = | table definitions   |
| triggers | = | trigger definitions   |
| data     | = | important schema data inputs                                |
| tool     | = | tool kit, including DsDbbuild_relb0_schema                  |
| doc      | = | documentation (includes schema - pdm files from S-designor) |
| ruldflt  | = | rule/default definitions                                    |

The content of these directories necessary for building a working schema are delivered by the .../sybase/db/Makefile and .../sybase/db/proc/Imakefile, .../sybase/db/tables/Imakefile,, .../sybase/db/triggers/Imakefile, .../sybase/db/tools/Imakefile into a single target directory.

### 6.1 Installation Scripts

Scripts used to support installation of the SDSRV database are listed in Table 6-1. These scripts are found in the directory /ecs/formal/DSS/sdsrv/sybase/db/tools.

**Table 6-1. Installation Scripts**

| Script File  | Description  |
|--------------|--|
| EcDsDbBuild  | Create a new initialized SDSRV database  |
| EcDsDbPatch  | Upgrade an existing <SUBSYS> database to the next valid database version level.      |
| EcDsDbDump   | Dump a specified <SUBSYS> database on demand   |
| EcDsDbLoad   | Load a specified <SUBSYS> database on demand.  |
| EcDbDesc     | List and detail the structure of all database objects in the specified ECS database. |
| EcDbChecksum | Provide row count totals for each of the tables in a specific ECS database.          |

## 6.2 De-Installation Scripts

Scripts used to support de-installation of the SDSRV Subsystem database are listed in Table 6-2.

**Table 6-2. De-Installation Scripts**

| Script File | Description  |
|-------------|--|
| EcDsDbDrop  | Drop all objects in the specified <SUBSYS> database. |

## 6.3 Backup and Recovery Scripts

Scripts used to perform backup and recovery of the SDSRV Subsystem database are listed in Table 6-3. These are configured to run automatically using the Unix cron facility. Transaction logs dumps (incremental dumps) are performed 3 times each day. Database dumps (full database dumps) are performed once each day.

**Table 6-3. Backup and Recovery Scripts**

| Script File        | Description  |
|--------------------|--|
| EcCoDbSyb_DumpDb   | Dumps all databases for managed by the SQL server instance.            |
| EcCoDbSyb_DumpTran | Dumps the transaction log for all databases managed by the SQL server. |

## 6.4 Miscellaneous Scripts

Miscellaneous scripts applicable to the SDSRV Subsystem database are listed in Table 6-4.

**Table 6-4. Miscellaneous Scripts and Input Data Files (1 of 4)**

| Script                 | Description  |
|------------------------|--|
| EcDdmMonitorServer     | Monitors segment usage and user levels for a selected SQL server. Superceded by DbVision COTS. |
| EcDdmSegmentUse        | Monitors segment usage. Used by EcDdmMonitorServer. Superceded by DbVision COTS.               |
| EcDdmUserCounts        | Monitors user access. Used by EcDdmMonitorServer. Superceded by DbVision COTS.                 |
| EcCoDbSyb_CkErrorLog   | Checks the error log for error messages warranting DBO attention. Superceded by DbVision.      |
| EcCoDbSyb_DbStat       | Updates index statistics for each table in the selected database.                              |
| EcDsDeletionCleanup.pl | Perl script used in granule deletion.  |
| EcDsResetLock          | Perl script used in granule deletion.  |

**Table 6-4. Miscellaneous Scripts and Input Data Files (2 of 4)**

| Script                           | Description   |
|----------------------------------|---|
| EcCoDbSyb_DboMail                | Emails DBA error notification via e-mail. Used by EcCoDbSyb_DumpDb/Tran and EcCoDbSyb_CkErrorLog scripts.   |
| ./tools/DsDbCleanIntegrity       | Clean orphan granules out of DsMdGrPoint, DsMdGrCirlce, DsMdGrBoundingRectangle and DsMdGrGPolygon  |
| ./tools/EcDsSrDbPatch            | Apply patch to a SDSRV database by running the DsDbBuildSchemaPatch.  |
| ./tools/EcDsSrDbBuild            | Build SDSRV database by running the DsDbbuild_relb0_schema  |
| ./tools/EcDsSrDbDrop             | Drop the SDSRV database schema by running the DsDbDropSchema.   |
| ./tools/EcDsSrDbDump             | Dump the SDSRV database to the specified device.  |
| ./tools/EcDsSrDbLoad             | Load SDSRV database from the specified device.  |
| ./tools/EcDsSrDBMigrate          | Migrate the SDSRV database from one mode to another.  |
| ./tools/EcDsSrDbGetNewGranules   | Access the most recently inserted granules for Aster routine processing.  |
| ./tools/EcDsSrDbL7Clean          | Logically delete all L70RWRS1 and L70RWRS2 granules, which are not clean up after the combining process.  |
| ./tools/EcDsSrDbL7CleanRC        | List of all environment variables used by EcDsSrDbL7Clean.  |
| ./tools/EcDsSrDbL7ErrorHandler   | Allows the user to merge/demerge/promote/delete L70R subintervals and scenes.   |
| ./tools/EcDsSrDbL7ErrorHandlerRC | List of all environment variables used by EcDsSrDbL7ErrorHandler.   |
| ./tools/DsDbUserCheck            | Check DsDbUserList.   |
| ./tools/DsDbUserList             | Contains a list of valid usernames.   |
| ./tools/DsDbSybaseLogins         | Adds logins to the SYBASE SQL Server.   |
| ./tools/DsDbisql                 | Preprocessor for isql.  |
| ./tools/DsDbbuild_relb0_schema   | Script uses to build the database.  |
| ./tools/DsDbCleanGranules        | Used for testing. Deletes all granules associated with a given ESDT name. Included for SDSRV testing engineers.   |
| ./tools/DsDbCleanCollection      | Used for testing. Deletes the Collection associated with a given ESDT name. Included for SDSRV testing engineers.   |
| ./tools/DsDbCleanSingleGranule   | Used for testing. Deletes a single granule given a dbID. (You must look at the database to get the dbID for the granule). Included for SDSRV testing engineers. |

**Table 6-4. Miscellaneous Scripts and Input Data Files (3 of 4)**

| Script                                 | Description   |
|--|---|
| ./tools/DsDbMocExt                     | Used by MOC to extract Landsat 7 metadata from SDSRV database and transfer data to remote site.                         |
| ./tools/DsDbMocRc                      | Used by DsDbMocExt to extract Landsat 7 metadata from SDSRV database. This is a template to be customized at the sites. |
| ./tools/DsDbDeleteRequest.ksh          | Removed the request queue by time.  |
| ./tools/DsDbDeleteRequestByRpclD       | Remove request queue by rpc ID.   |
| ./tools/DsDbMoveESDTGranules           | Move Granules from one ESDT to another.   |
| ./tools/DsDbRemoveLandsatData          | Remove the L70R granules and all the references of these granules.  |
| ./tools/DsDbSQSbcpLLBOX                | BCP the rectangle data type granules to llbox data type.  |
| ./tools/DsDbSqsBcpOrbitPolygon         | BCP the MISR Orbit Polygon data to the DsMdOrbitPolygons table.   |
| ./tools/DsDbSrFileLocMetadata          | Recovery of effected lost files.  |
| ./tools/DsDbSrGranPHMetadata           | Recovery for a list of lost files.  |
| ./tables/DsDbB0DataTypes.sql           | Creates user defined data types and defaults with any bindings.   |
| ./tables/DsDbB0DAPTables.sql           | Generates the Delivered Algorithm Package tables.   |
| ./tables/DsDbB0SpatialTables.sql       | Generates the Spatial tables.   |
| ./tables/DsDbB0TemporalTables.sql      | Generates the Temporal tables.  |
| ./tables/DsDbB0GranuleTables.sql       | Generates the Granule tables.   |
| ./tables/DsDbB0CollectionTables.sql    | Generates the Collection tables.  |
| ./tables/DsDbB0DataOrigTables.sql      | Generates the Data Originator tables.   |
| ./tables/DsDbB0ContactTables.sql       | Generates the Contact tables.   |
| ./tables/DsDbB0DictionaryTables.sql    | Generates the Data Dictionary tables.   |
| ./tables/DsDbB0SystemTables.sql        | Generates the system tables.  |
| ./tables/DsDbB0SystemWrapperTables.sql | Generates the system wrapper tables   |
| ./tables/DsDbB0RecoveryTables.sql      | Generates the system recovery tables.   |
| ./proc/DsDbDeleteProcs.sql             | Generates all delete stored procedures.   |
| ./proc/DsDbInsertProcs.sql             | Generates all insert stored procedures.   |
| ./proc/DsDbSelectProcs.sql             | Generates all select stored procedures.   |
| ./proc/DsDbUpdateProcs.sql             | Generates all update stored procedures.   |
| ./proc/DsDbOtherProcs.sql              | Generates all other stored procedures that are used for various purposes other than delete, insert, select, or update.  |

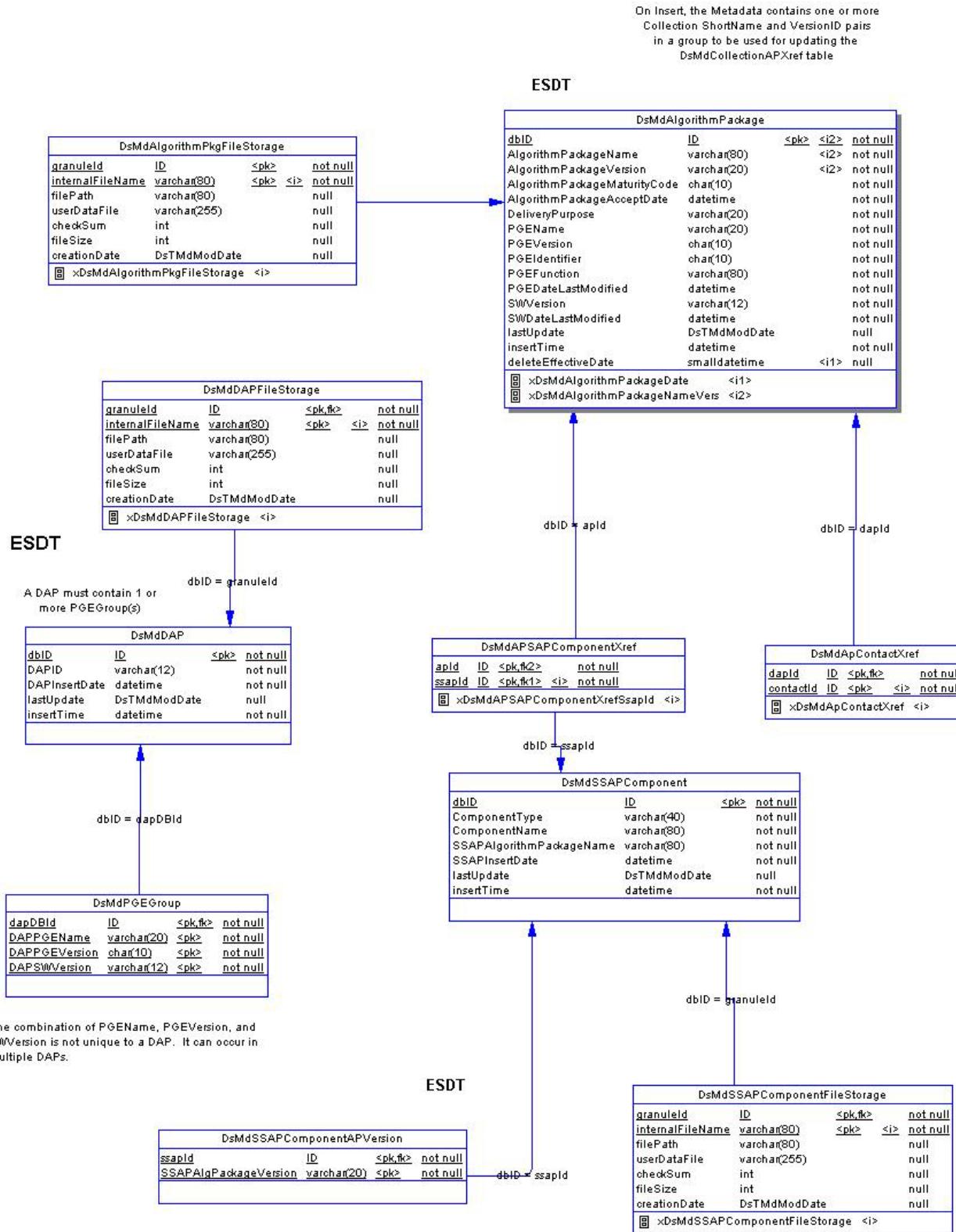
**Table 6-4. Miscellaneous Scripts and Input Data Files (4 of 4)**

| Script                           | Description  |
|----------------------------------|--|
| ..proc/DsDbRecoveryProcs.sql     | Generates all stored procedures that are used for SDSRV server recovery.                             |
| ..triggers/DsDbTriggers.sql      | Generates all the triggers on the tables.  |
| ..data/DsDbGenGrants.sql         | Generates the grants on all objects and assigns the permissions.                                     |
| ..data/DsDbDictionaryData.sql    | Installs system level metadata for the data dictionary tables. Required to make SDSRV properly work. |
| ..data/DsDbGenSystemData.sql     | Installs system level metadata for the data dictionary tables. Required to make SDSRV properly work. |
| ..data/DsDbGenWrapCommands.sql   | Installs system level metadata for wrapper tables. Required to make SDSRV properly work.             |
| ..tools/DsDbChange_DB_Schema.sql | SQL used to do schema convert from drop2 - drop3.  |
| ..ruldflt/DsDbRules.sql          | Generates all the rules for SDSRV database.  |
| ..patches/DsDbBuildSchemaPatch   | Korn shell script used to run the patches  |
| ..tools/DsDbBuildConstraints.sql | SQL used to rebuild all RI constraints. Used by Build and Update scripts.                            |

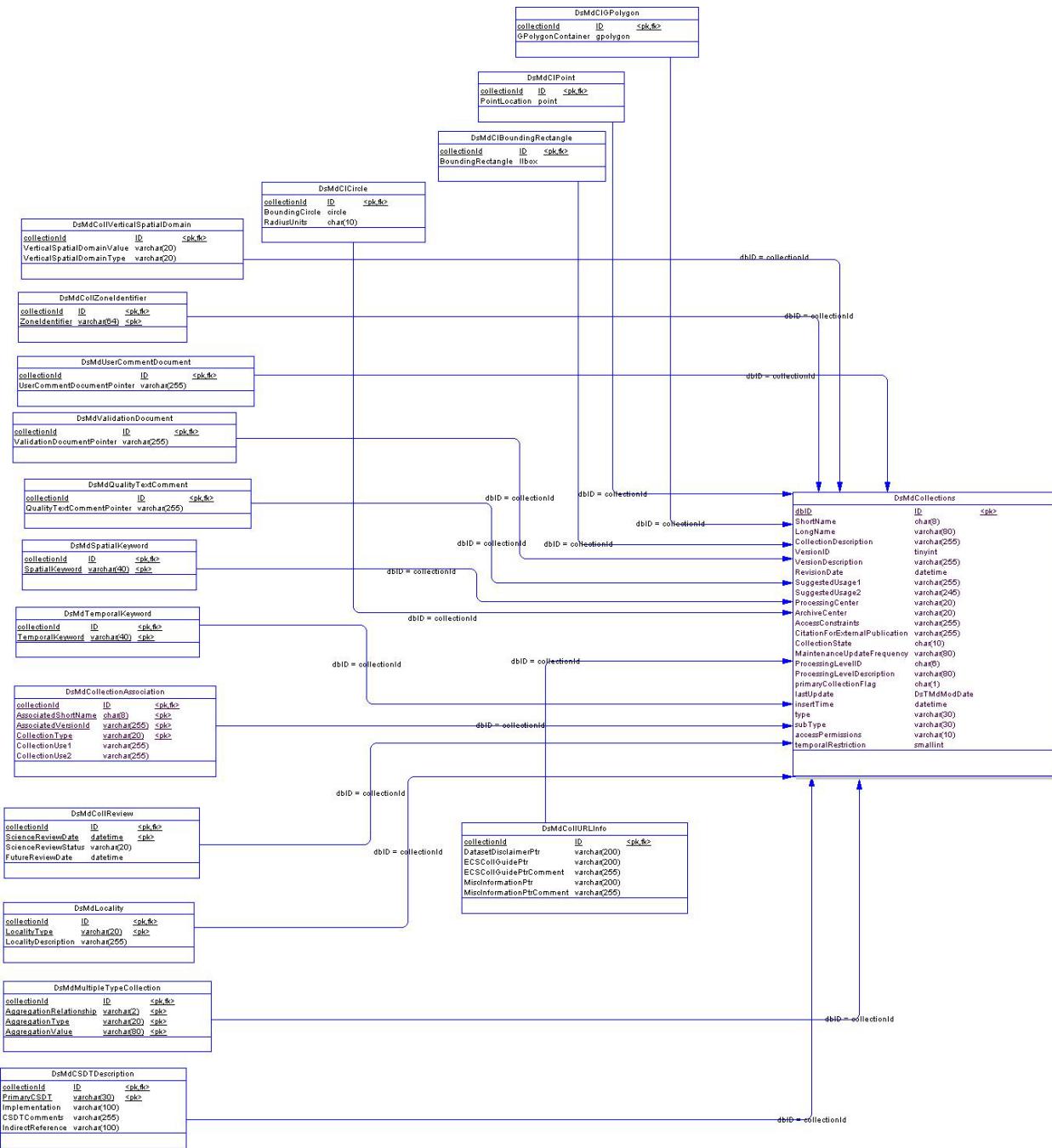
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## **Appendix A. Science Data Server ERDs**

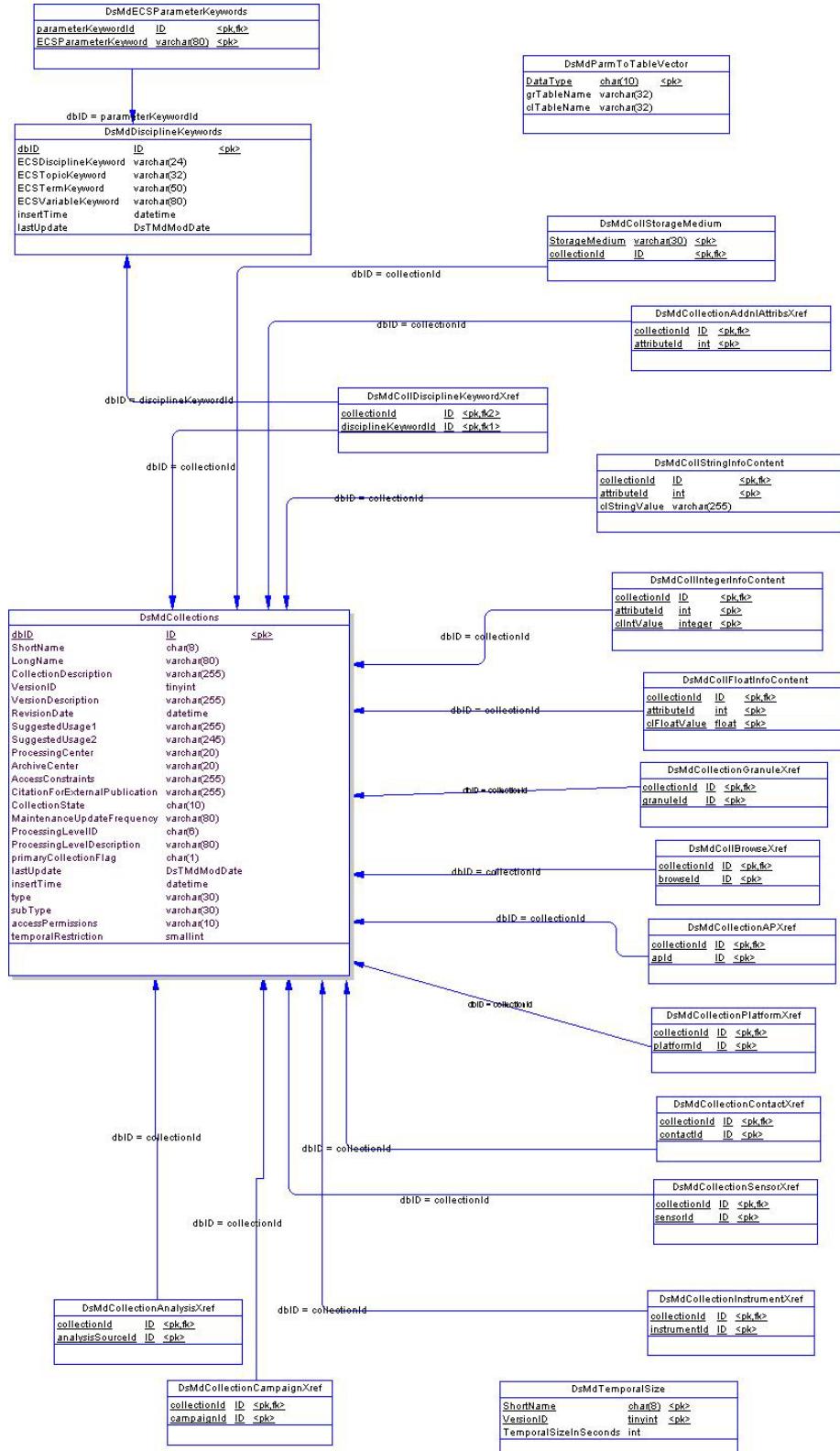
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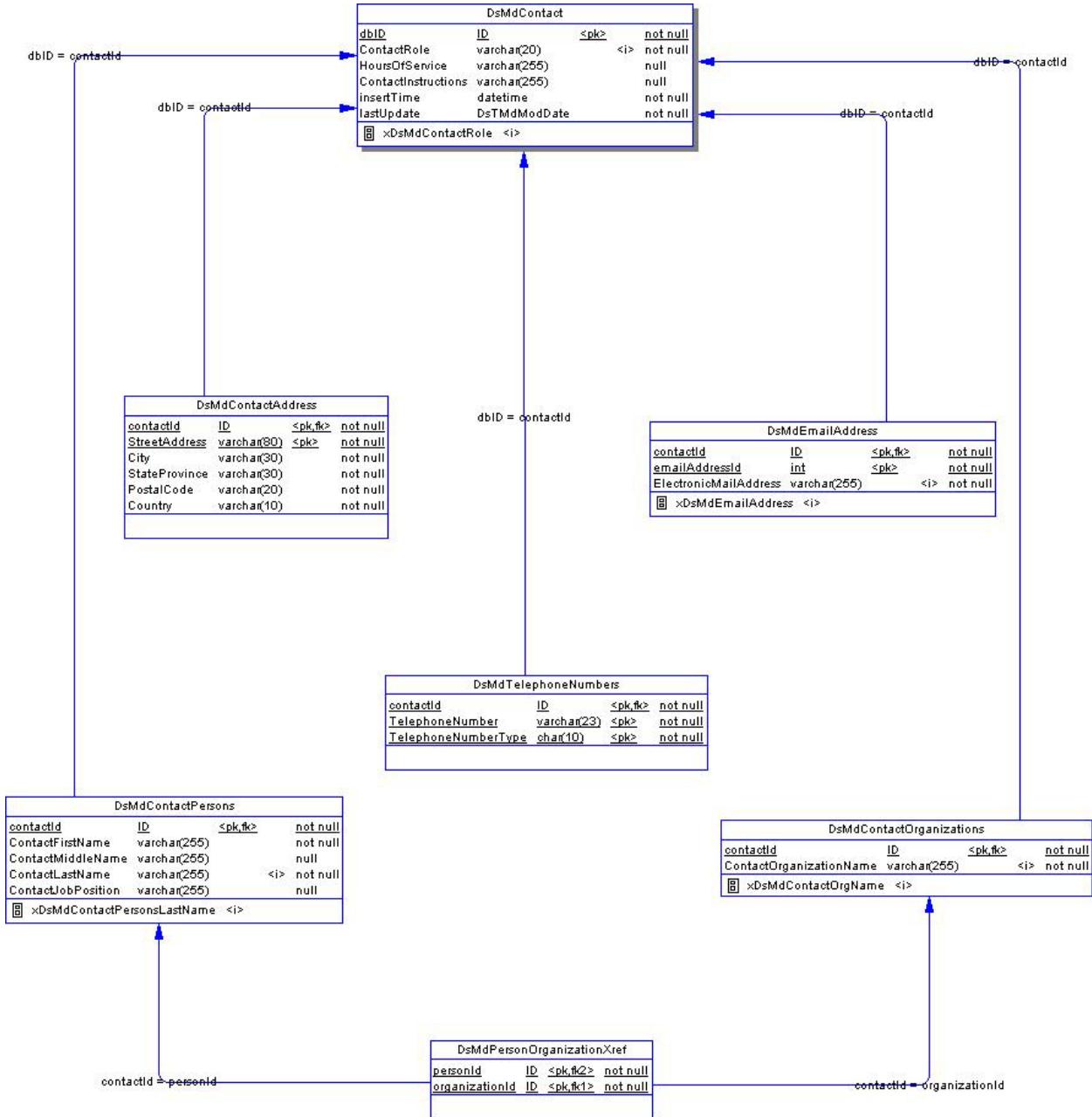
**Figure A-1. Delivered Algorithm Package**



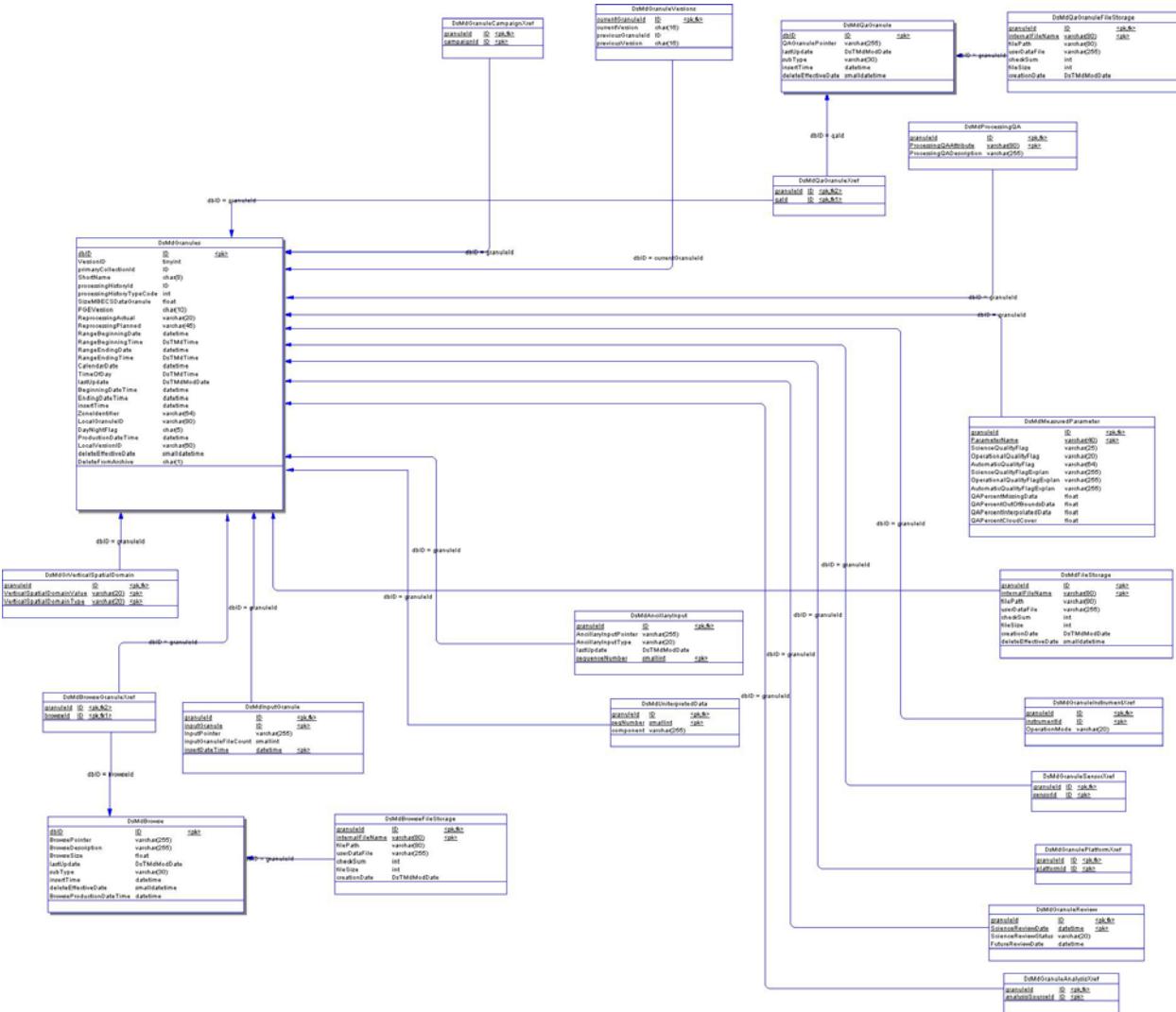
**Figure A-2. Collection (1 of 2)**



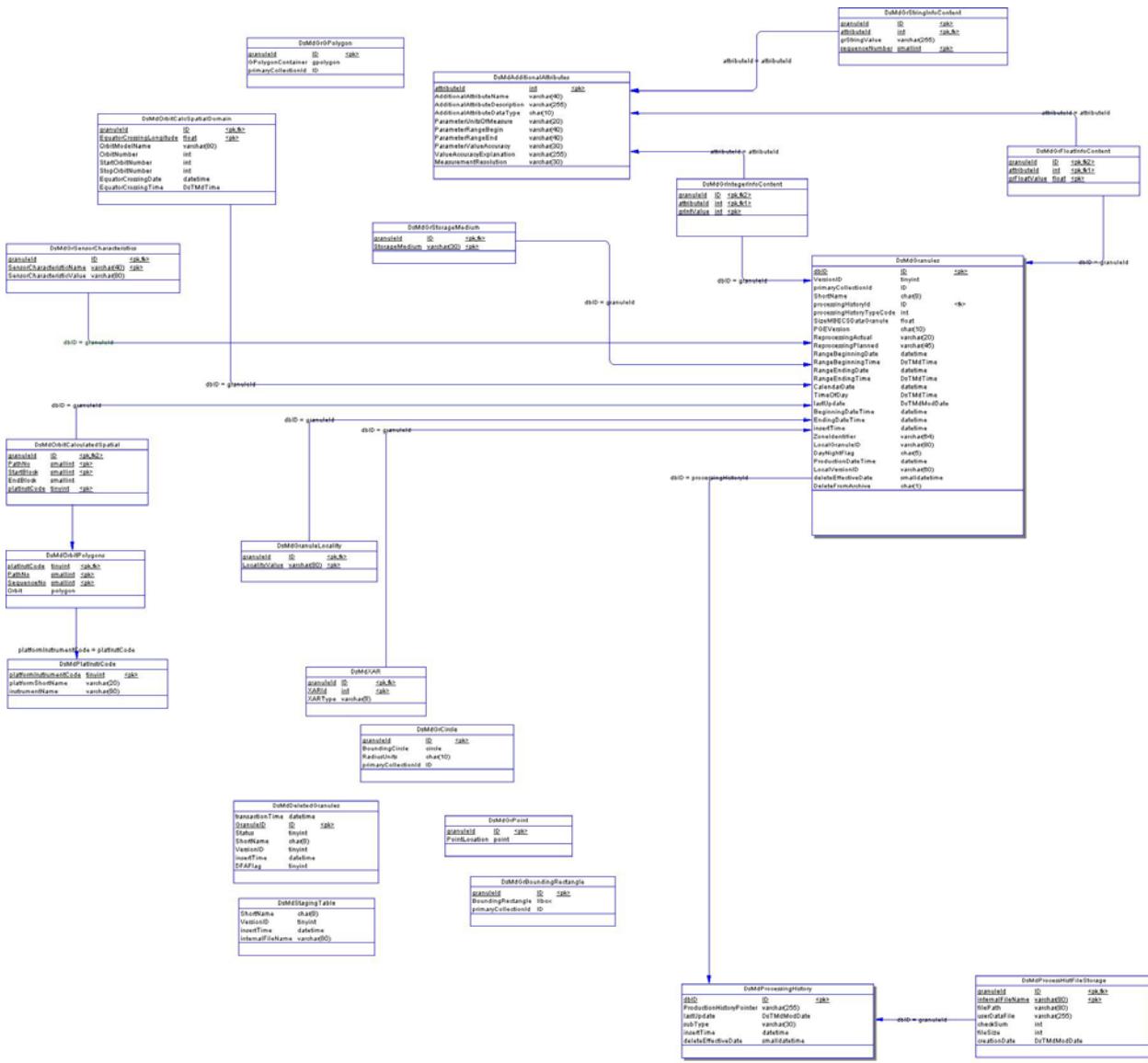
**Figure A-2. Collection (2 of 2)**



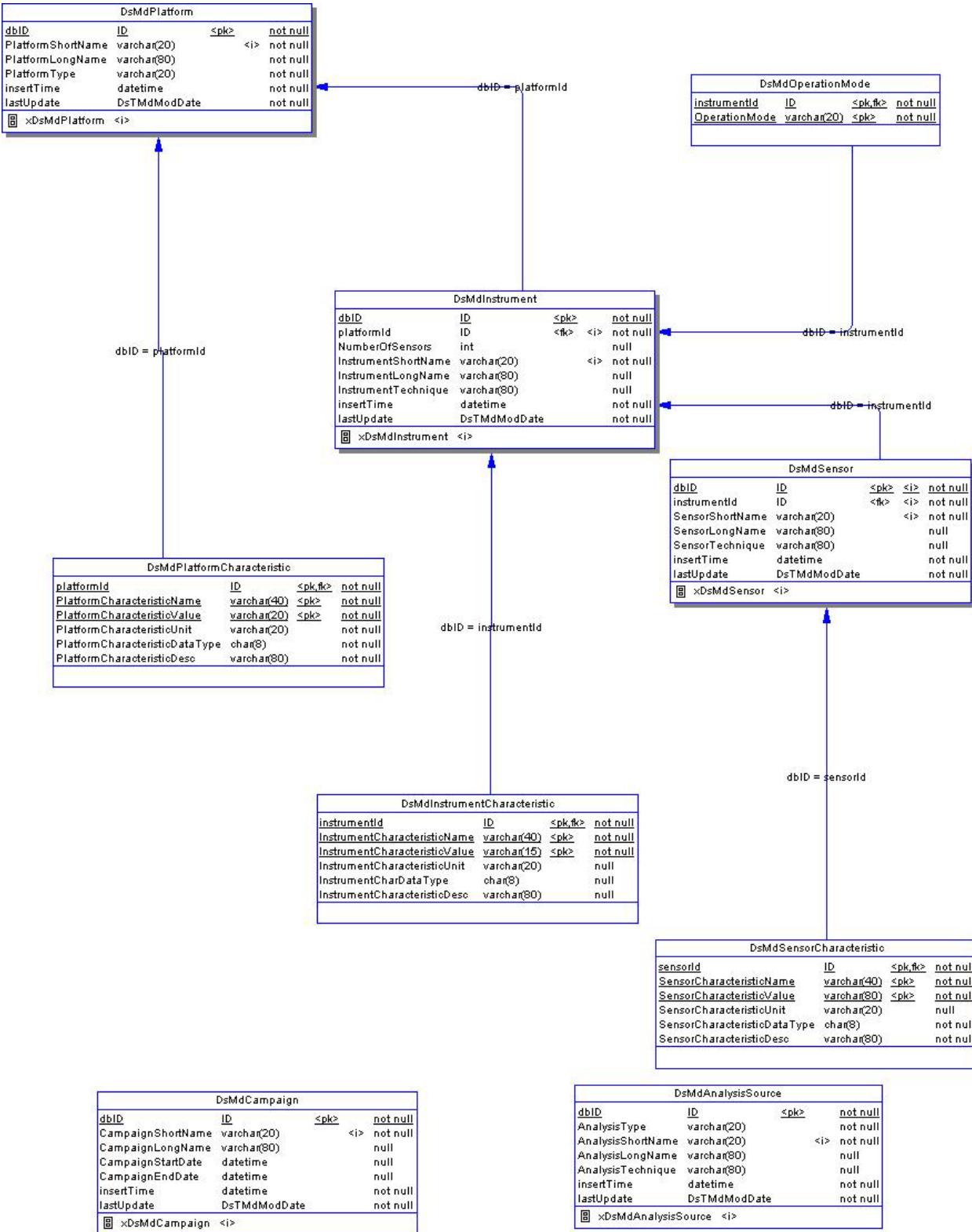
**Figure A-3. Contact**



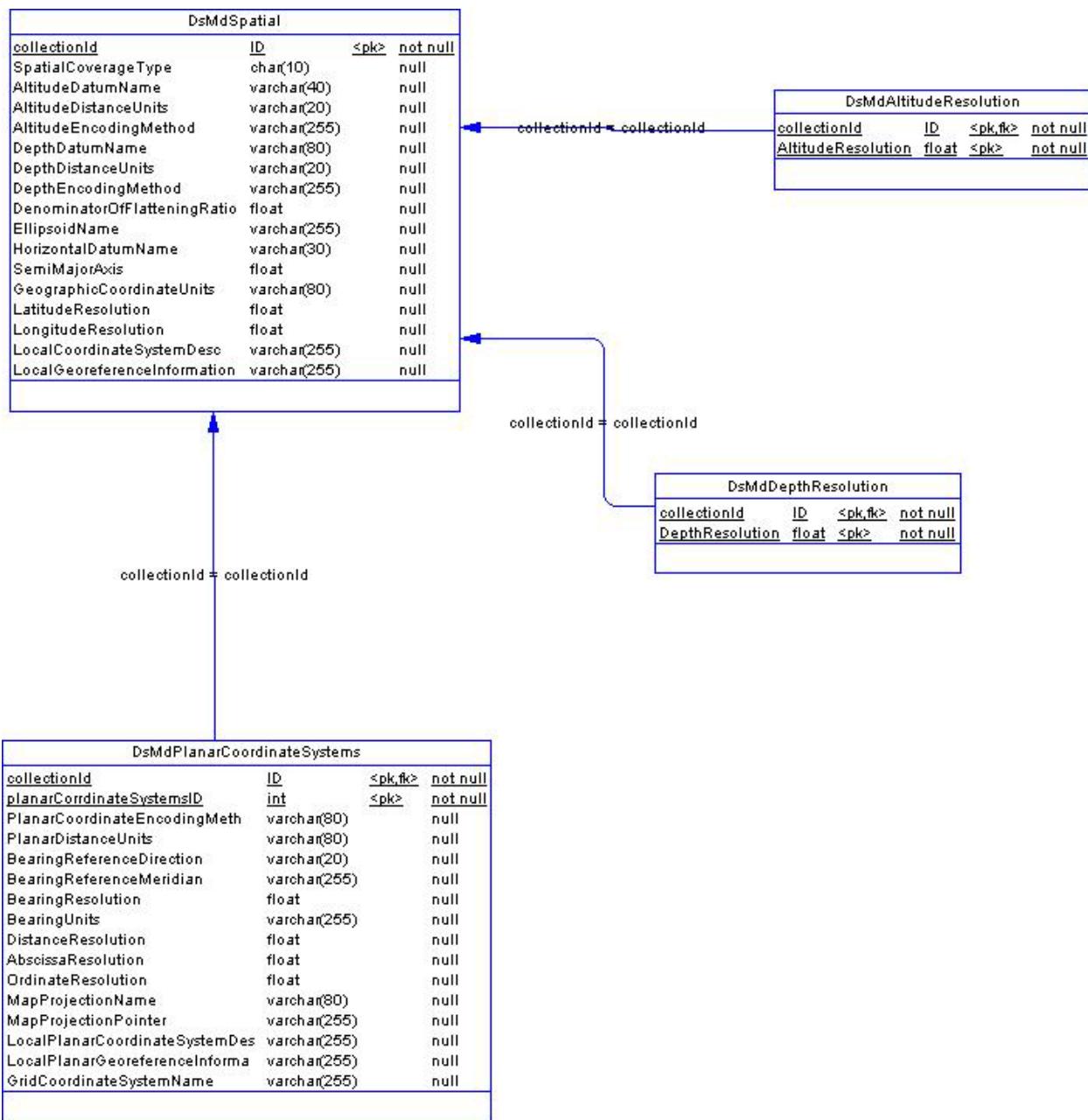
**Figure A-4. Granules (1 of 2)**



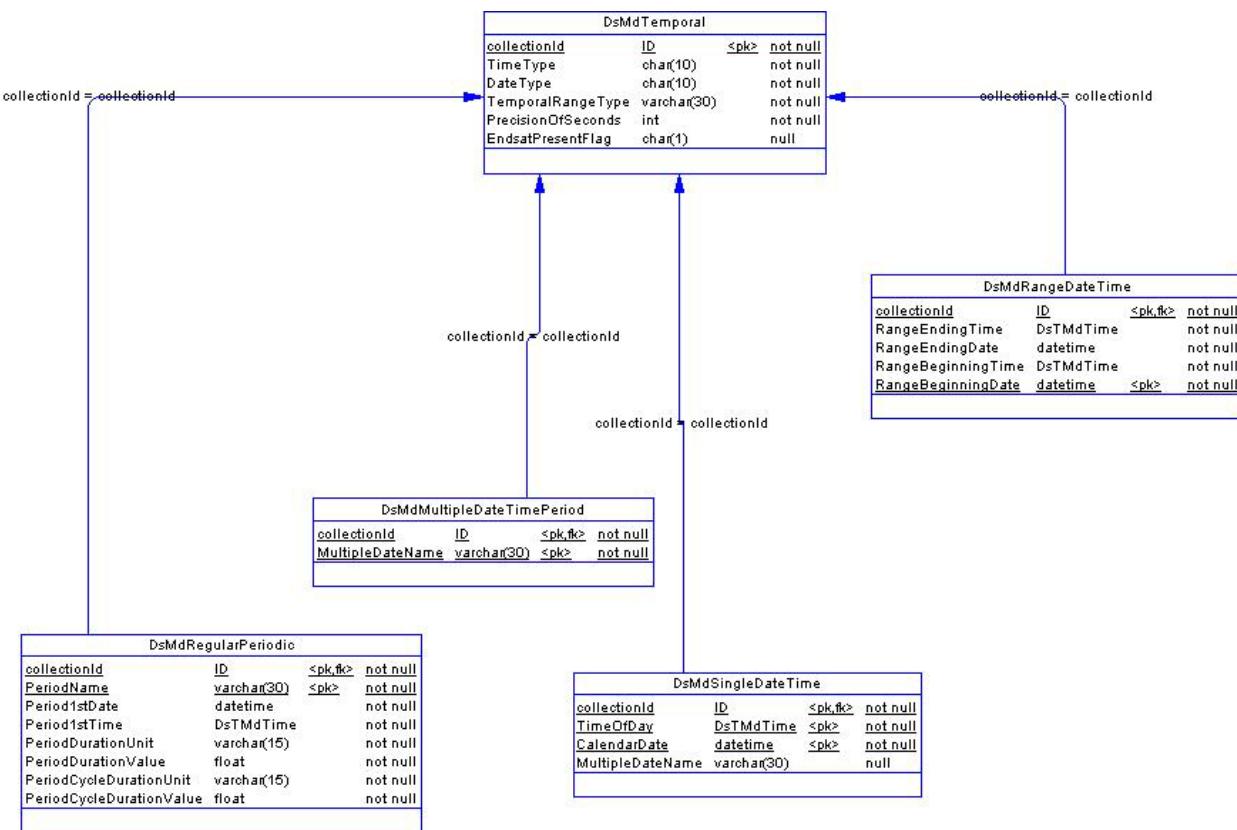
**Figure A-4. Granules (2 of 2)**



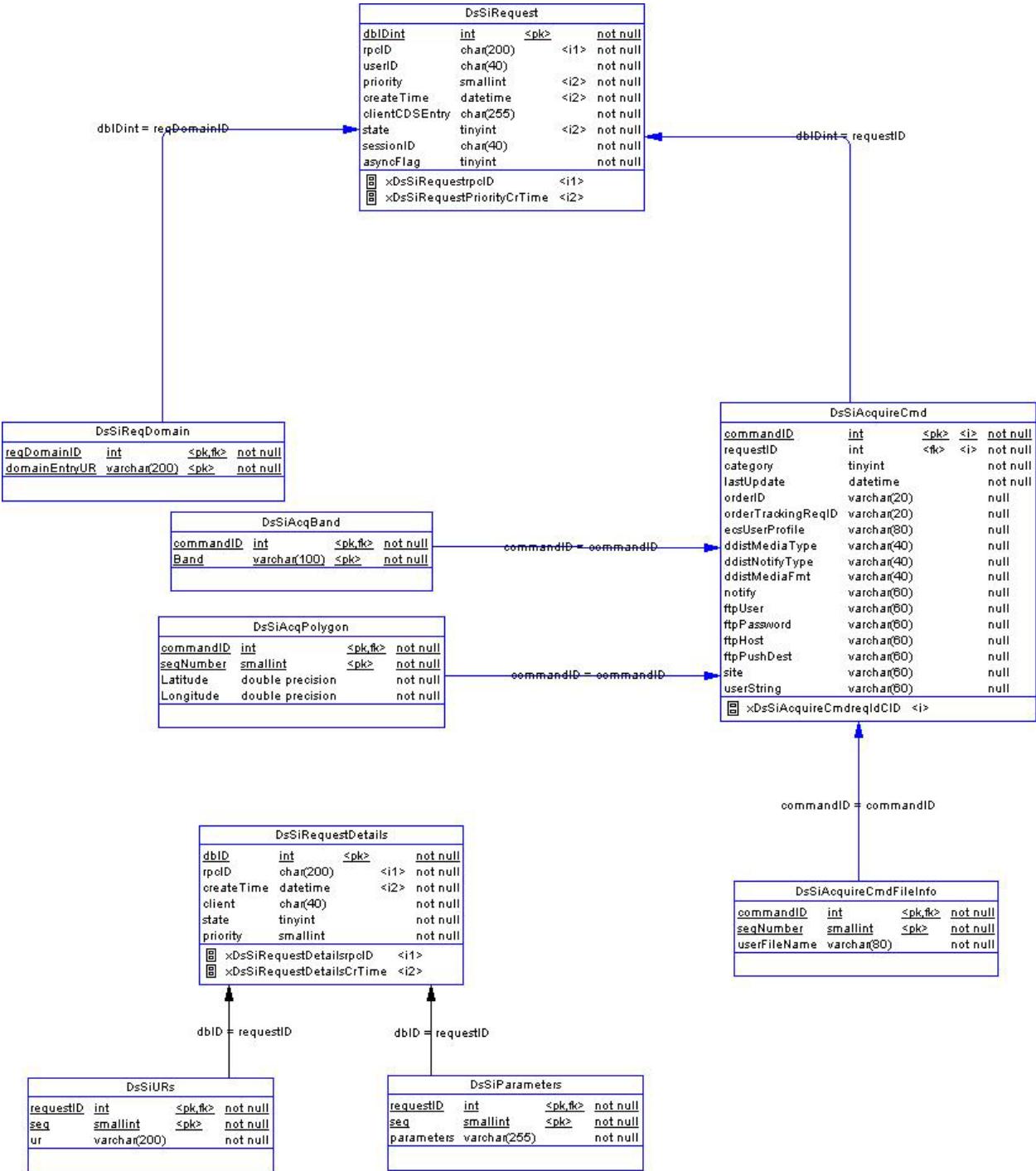
**Figure A-5. Data Originator**



**Figure A-6. Spatial**



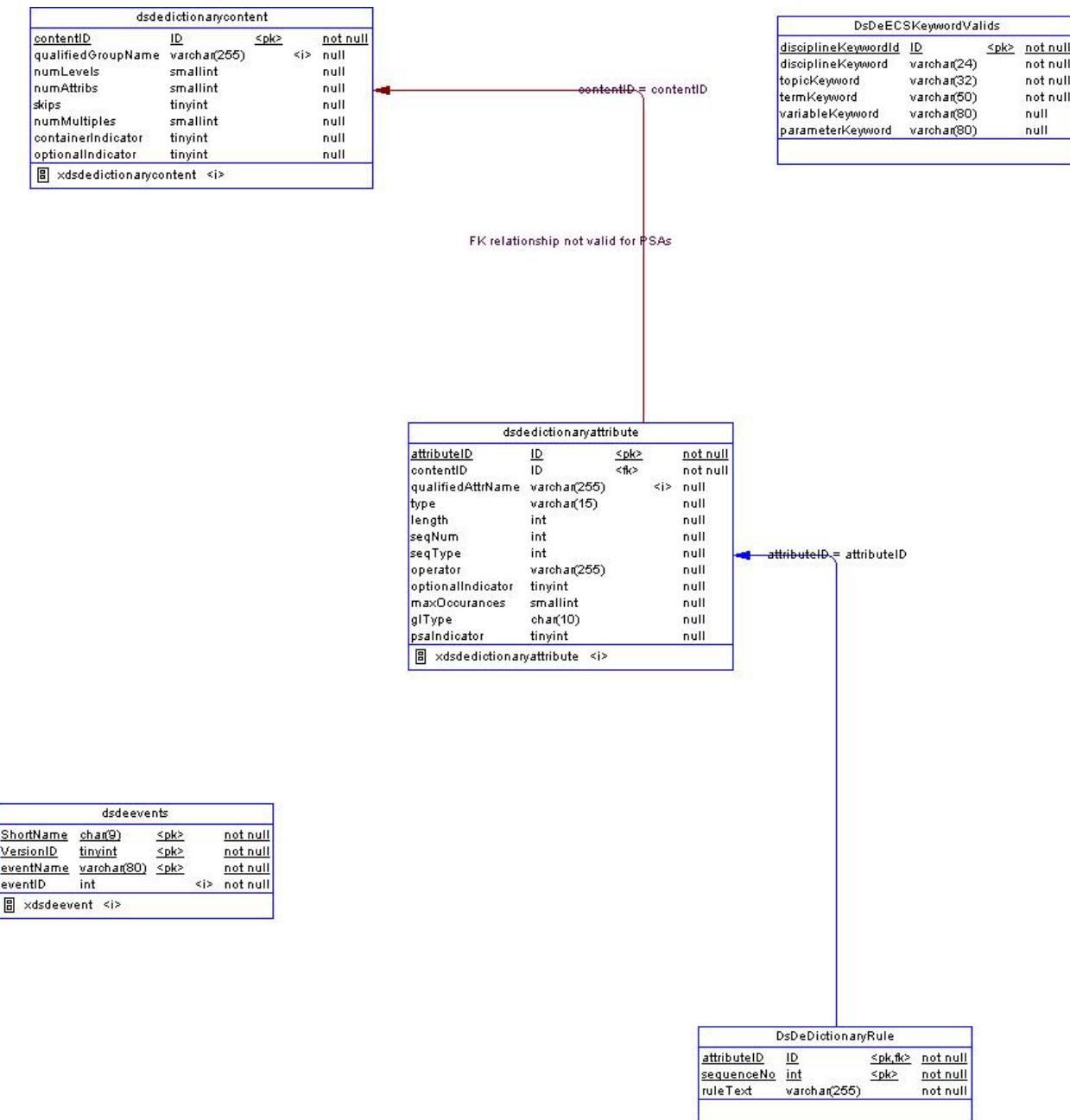
**Figure A-7. Temporal**



**Figure A-8. Recovery**

| DsGeESDTConfiguredType    |              |                        |
|---------------------------|--------------|------------------------|
| <b>configuredName</b>     | varchar(20)  | <del>pk</del> not null |
| <b>versionID</b>          | tinyint      | <del>pk</del> not null |
| <b>description</b>        | varchar(255) | null                   |
| <b>descriptorFileName</b> | varchar(80)  | null                   |
| <b>dllFileName</b>        | varchar(80)  | null                   |
| <b>spatialSearchType</b>  | varchar(40)  | not null               |
| <b>esdtState</b>          | tinyint      | not null               |

**Figure A-9. Configured Type**



**Figure A-10. Dictionary**

| DsMdAttributeList |              |      |
|-------------------|--------------|------|
| <u>listName</u>   | varchar(30)  | <pk> |
| <u>sequenceNo</u> | int          | <pk> |
| glType            | varchar(30)  |      |
| attributeName     | varchar(255) |      |

| DsMdInsertSequence |             |      |
|--------------------|-------------|------|
| <u>BaseType</u>    | varchar(40) | <pk> |
| StoredProcName     | varchar(40) |      |
| ListName           | varchar(40) |      |
| CommandType        | char        |      |
| DataType           | char        |      |
| <u>SequenceNo</u>  | int         | <pk> |

**Figure A-11. System Wrapper**

|   |  |
|---|--|
| DsMdIdentifier                            | DsBtNotifierQueue                        |
| <u>identifierType</u> char(30) <pk>       | <u>rpcid</u> varchar(100) <pk>           |
| <u>identifierObjectType</u> char(30) <pk> | <u>servicename</u> varchar(30)           |
| <u>lastIdentifier</u> ID                  | <u>granUR</u> varchar(255)               |
| <u>lastIntIdentifier</u> int              | <u>instdate</u> DsTMDModDate             |
| <u>lastSmallIntIdentifier</u> smallint    | <u>status</u> tinyint                    |
| <u>identifierPad1</u> char(255)           | <u>triggerTime</u> DsTMDModDate          |
| <u>identifierPad2</u> char(255)           |  |
| <u>identifierPad3</u> char(255)           |  |
| <u>identifierPad4</u> char(255)           |  |
| <u>identifierPad5</u> char(255)           |  |
| <u>identifierPad6</u> char(255)           |  |
| <u>identifierPad7</u> char(255)           |  |
|   |  |
| EcDbDatabaseVersions                      | DsMdUnloadList                           |
| <u>EcDbSchemaVersionId</u> smallint <pk>  | <u>BaseType</u> varchar(40) <pk>         |
| <u>EcDbDropVersion</u> char(64) <pk>      | <u>SubType</u> varchar(30) <pk>          |
| <u>EcDbDropDescription</u> varchar(255)   | <u>ListName</u> varchar(40) <pk>         |
| <u>EcDbCurrentVersionFlag</u> char(1)     | <u>CommandType</u> char                  |
| <u>EcDbDatabaseName</u> varchar(255)      | <u>DataType</u> char                     |
| <u>EcDbDropInstallDate</u> datetime       | <u>GroupName</u> varchar(60) <pk>        |
| <u>EcDbSybaseVersion</u> varchar(255)     | <u>ContainerGroupName</u> varchar(60)    |
| <u>EcDbSybaseServer</u> varchar(255)      | <u>SequenceNo</u> int <pk>               |
| <u>EcDbComments</u> varchar(255)          |  |
| <u>EcDbUpdateProcess</u> varchar(255)     |  |
|   |  |
| DsMdSDSRVLookup                           | DsMdKeyDependency                        |
| <u>lookupType</u> varchar(40) <pk>        | <u>TableName</u> varchar(40) <pk>        |
| <u>lookupValue</u> varchar(40) <pk>       | <u>TableKeyName</u> varchar(40)          |
| <u>lookupString</u> varchar(255)          | <u>DependentTableName</u> varchar(40)    |
| <u>lookupInt</u> int                      | <u>DependentTableKeyName</u> varchar(40) |
| <u>lookupFloat</u> float                  | <u>XrefFlag</u> char                     |
| <u>lookupDatetime</u> datetime            | <u>SequenceNo</u> int <pk>               |
|   |  |
| DsMdAttributeTableXref                    | DsMdBaseDependent                        |
| <u>attributeName</u> varchar(80) <pk>     | <u>BaseType</u> varchar(40) <pk>         |
| <u>productName</u> varchar(80) <pk>       | <u>SubType</u> varchar(30) <pk>          |
| <u>tableName</u> varchar(32)              | <u>BaseTableName</u> varchar(40)         |
| <u>columnName</u> varchar(32)             | <u>DependentTableName</u> varchar(40)    |
|   | <u>DependentTableIDName</u> varchar(40)  |
|   | <u>SequenceNo</u> int <pk>               |
|   |  |
|   | DsMdCommandConversion                    |
|   | <u>Operator</u> varchar(40) <pk>         |
|   | <u>GroupName</u> varchar(40) <pk>        |
|   | <u>BaseTable</u> varchar(40) <pk>        |
|   | <u>DBCommand</u> varchar(255)            |
|   | <u>SequenceNo</u> int <pk>               |

**Figure A-12. System Information (1 of 2)**

| <table border="1"> <thead> <tr><th colspan="3">DsMdProductDbXref</th></tr> </thead> <tbody> <tr><td>productName</td><td>varchar(60)</td><td>&lt;pk&gt;</td></tr> <tr><td>dbName</td><td>varchar(60)</td><td>&lt;pk&gt;</td></tr> <tr><td>startDate</td><td>datetime</td><td></td></tr> <tr><td>endDate</td><td>datetime</td><td></td></tr> </tbody> </table><br><table border="1"> <thead> <tr><th colspan="3">DsMdUpdateSequence</th></tr> </thead> <tbody> <tr><td>BaseType</td><td>varchar(60)</td><td>&lt;pk&gt;</td></tr> <tr><td>GroupName</td><td>varchar(60)</td><td>&lt;pk&gt;</td></tr> <tr><td>DBCommand</td><td>varchar(120)</td><td></td></tr> <tr><td>ListName</td><td>varchar(60)</td><td></td></tr> <tr><td>CommandType</td><td>char</td><td></td></tr> <tr><td>DataType</td><td>char</td><td></td></tr> <tr><td>SequenceNo</td><td>int</td><td>&lt;pk&gt;</td></tr> </tbody> </table><br><table border="1"> <thead> <tr><th colspan="3">DsMdL7ErrorHandling</th></tr> </thead> <tbody> <tr><td>granuleId</td><td>ID</td><td>&lt;pk&gt;</td></tr> <tr><td>geoidFlag</td><td>char(1)</td><td>&lt;pk&gt;</td></tr> <tr><td>lat11</td><td>numeric(8,4)</td><td></td></tr> <tr><td>long11</td><td>numeric(8,4)</td><td></td></tr> <tr><td>lat12</td><td>numeric(8,4)</td><td></td></tr> <tr><td>long12</td><td>numeric(8,4)</td><td></td></tr> <tr><td>lat13</td><td>numeric(8,4)</td><td></td></tr> <tr><td>long13</td><td>numeric(8,4)</td><td></td></tr> <tr><td>lat14</td><td>numeric(8,4)</td><td></td></tr> <tr><td>long14</td><td>numeric(8,4)</td><td></td></tr> </tbody> </table><br><table border="1"> <thead> <tr><th colspan="3">DsQAMUTESDTSite</th></tr> </thead> <tbody> <tr><td>ShortName</td><td>char(8)</td><td>&lt;pk&gt;</td></tr> <tr><td>Site</td><td>varchar(25)</td><td>&lt;pk&gt;</td></tr> </tbody> </table> | DsMdProductDbXref |      |  | productName | varchar(60) | <pk> | dbName | varchar(60) | <pk> | startDate | datetime |  | endDate | datetime |  | DsMdUpdateSequence |  |  | BaseType | varchar(60) | <pk> | GroupName | varchar(60) | <pk> | DBCommand | varchar(120) |  | ListName | varchar(60) |  | CommandType | char |  | DataType | char |  | SequenceNo | int | <pk> | DsMdL7ErrorHandling |  |  | granuleId | ID | <pk> | geoidFlag | char(1) | <pk> | lat11 | numeric(8,4) |  | long11 | numeric(8,4) |  | lat12 | numeric(8,4) |  | long12 | numeric(8,4) |  | lat13 | numeric(8,4) |  | long13 | numeric(8,4) |  | lat14 | numeric(8,4) |  | long14 | numeric(8,4) |  | DsQAMUTESDTSite |  |  | ShortName | char(8) | <pk> | Site | varchar(25) | <pk> | <table border="1"> <thead> <tr><th colspan="3">DsMdOperatorConversion</th></tr> </thead> <tbody> <tr><td>Operator</td><td>varchar(40)</td><td>&lt;pk&gt;</td></tr> <tr><td>DBString</td><td>varchar(40)</td><td></td></tr> </tbody> </table><br><table border="1"> <thead> <tr><th colspan="3">DsMdAttributeConversion</th></tr> </thead> <tbody> <tr><td>GIType</td><td>varchar(40)</td><td>&lt;pk&gt;</td></tr> <tr><td>DynamicSQLFlag</td><td>char</td><td>&lt;pk&gt;</td></tr> <tr><td>DBString</td><td>varchar(40)</td><td></td></tr> </tbody> </table><br><table border="1"> <thead> <tr><th colspan="3">DsMdJoins</th></tr> </thead> <tbody> <tr><td>table1</td><td>varchar(60)</td><td>&lt;pk&gt;</td></tr> <tr><td>column1</td><td>varchar(60)</td><td>&lt;pk&gt;</td></tr> <tr><td>table2</td><td>varchar(60)</td><td>&lt;pk&gt;</td></tr> <tr><td>column2</td><td>varchar(60)</td><td>&lt;pk&gt;</td></tr> </tbody> </table><br><table border="1"> <thead> <tr><th colspan="3">DsMdL7ErrorHandling_gr</th></tr> </thead> <tbody> <tr><td>granuleId</td><td>ID</td><td>&lt;pk&gt;</td></tr> <tr><td>sceneGranuleId</td><td>ID</td><td>&lt;pk&gt;</td></tr> <tr><td>ShortName</td><td>char(8)</td><td></td></tr> </tbody> </table> |  | DsMdOperatorConversion |  |  | Operator | varchar(40) | <pk> | DBString | varchar(40) |  | DsMdAttributeConversion |  |  | GIType | varchar(40) | <pk> | DynamicSQLFlag | char | <pk> | DBString | varchar(40) |  | DsMdJoins |  |  | table1 | varchar(60) | <pk> | column1 | varchar(60) | <pk> | table2 | varchar(60) | <pk> | column2 | varchar(60) | <pk> | DsMdL7ErrorHandling_gr |  |  | granuleId | ID | <pk> | sceneGranuleId | ID | <pk> | ShortName | char(8) |  |
|--|-------------------|------|--|-------------|-------------|------|--------|-------------|------|-----------|----------|--|---------|----------|--|--------------------|--|--|----------|-------------|------|-----------|-------------|------|-----------|--------------|--|----------|-------------|--|-------------|------|--|----------|------|--|------------|-----|------|---------------------|--|--|-----------|----|------|-----------|---------|------|-------|--------------|--|--------|--------------|--|-------|--------------|--|--------|--------------|--|-------|--------------|--|--------|--------------|--|-------|--------------|--|--------|--------------|--|-----------------|--|--|-----------|---------|------|------|-------------|------|---|--|------------------------|--|--|----------|-------------|------|----------|-------------|--|-------------------------|--|--|--------|-------------|------|----------------|------|------|----------|-------------|--|-----------|--|--|--------|-------------|------|---------|-------------|------|--------|-------------|------|---------|-------------|------|------------------------|--|--|-----------|----|------|----------------|----|------|-----------|---------|--|
| DsMdProductDbXref  |                   |      |  |             |             |      |        |             |      |           |          |  |         |          |  |                    |  |  |          |             |      |           |             |      |           |              |  |          |             |  |             |      |  |          |      |  |            |     |      |                     |  |  |           |    |      |           |         |      |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |                 |  |  |           |         |      |      |             |      |   |  |                        |  |  |          |             |      |          |             |  |                         |  |  |        |             |      |                |      |      |          |             |  |           |  |  |        |             |      |         |             |      |        |             |      |         |             |      |                        |  |  |           |    |      |                |    |      |           |         |  |
| productName  | varchar(60)       | <pk> |  |             |             |      |        |             |      |           |          |  |         |          |  |                    |  |  |          |             |      |           |             |      |           |              |  |          |             |  |             |      |  |          |      |  |            |     |      |                     |  |  |           |    |      |           |         |      |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |                 |  |  |           |         |      |      |             |      |   |  |                        |  |  |          |             |      |          |             |  |                         |  |  |        |             |      |                |      |      |          |             |  |           |  |  |        |             |      |         |             |      |        |             |      |         |             |      |                        |  |  |           |    |      |                |    |      |           |         |  |
| dbName   | varchar(60)       | <pk> |  |             |             |      |        |             |      |           |          |  |         |          |  |                    |  |  |          |             |      |           |             |      |           |              |  |          |             |  |             |      |  |          |      |  |            |     |      |                     |  |  |           |    |      |           |         |      |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |                 |  |  |           |         |      |      |             |      |   |  |                        |  |  |          |             |      |          |             |  |                         |  |  |        |             |      |                |      |      |          |             |  |           |  |  |        |             |      |         |             |      |        |             |      |         |             |      |                        |  |  |           |    |      |                |    |      |           |         |  |
| startDate  | datetime          |      |  |             |             |      |        |             |      |           |          |  |         |          |  |                    |  |  |          |             |      |           |             |      |           |              |  |          |             |  |             |      |  |          |      |  |            |     |      |                     |  |  |           |    |      |           |         |      |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |                 |  |  |           |         |      |      |             |      |   |  |                        |  |  |          |             |      |          |             |  |                         |  |  |        |             |      |                |      |      |          |             |  |           |  |  |        |             |      |         |             |      |        |             |      |         |             |      |                        |  |  |           |    |      |                |    |      |           |         |  |
| endDate  | datetime          |      |  |             |             |      |        |             |      |           |          |  |         |          |  |                    |  |  |          |             |      |           |             |      |           |              |  |          |             |  |             |      |  |          |      |  |            |     |      |                     |  |  |           |    |      |           |         |      |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |                 |  |  |           |         |      |      |             |      |   |  |                        |  |  |          |             |      |          |             |  |                         |  |  |        |             |      |                |      |      |          |             |  |           |  |  |        |             |      |         |             |      |        |             |      |         |             |      |                        |  |  |           |    |      |                |    |      |           |         |  |
| DsMdUpdateSequence   |                   |      |  |             |             |      |        |             |      |           |          |  |         |          |  |                    |  |  |          |             |      |           |             |      |           |              |  |          |             |  |             |      |  |          |      |  |            |     |      |                     |  |  |           |    |      |           |         |      |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |                 |  |  |           |         |      |      |             |      |   |  |                        |  |  |          |             |      |          |             |  |                         |  |  |        |             |      |                |      |      |          |             |  |           |  |  |        |             |      |         |             |      |        |             |      |         |             |      |                        |  |  |           |    |      |                |    |      |           |         |  |
| BaseType   | varchar(60)       | <pk> |  |             |             |      |        |             |      |           |          |  |         |          |  |                    |  |  |          |             |      |           |             |      |           |              |  |          |             |  |             |      |  |          |      |  |            |     |      |                     |  |  |           |    |      |           |         |      |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |                 |  |  |           |         |      |      |             |      |   |  |                        |  |  |          |             |      |          |             |  |                         |  |  |        |             |      |                |      |      |          |             |  |           |  |  |        |             |      |         |             |      |        |             |      |         |             |      |                        |  |  |           |    |      |                |    |      |           |         |  |
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| DBCommand  | varchar(120)      |      |  |             |             |      |        |             |      |           |          |  |         |          |  |                    |  |  |          |             |      |           |             |      |           |              |  |          |             |  |             |      |  |          |      |  |            |     |      |                     |  |  |           |    |      |           |         |      |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |                 |  |  |           |         |      |      |             |      |   |  |                        |  |  |          |             |      |          |             |  |                         |  |  |        |             |      |                |      |      |          |             |  |           |  |  |        |             |      |         |             |      |        |             |      |         |             |      |                        |  |  |           |    |      |                |    |      |           |         |  |
| ListName   | varchar(60)       |      |  |             |             |      |        |             |      |           |          |  |         |          |  |                    |  |  |          |             |      |           |             |      |           |              |  |          |             |  |             |      |  |          |      |  |            |     |      |                     |  |  |           |    |      |           |         |      |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |                 |  |  |           |         |      |      |             |      |   |  |                        |  |  |          |             |      |          |             |  |                         |  |  |        |             |      |                |      |      |          |             |  |           |  |  |        |             |      |         |             |      |        |             |      |         |             |      |                        |  |  |           |    |      |                |    |      |           |         |  |
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| DsMdL7ErrorHandling  |                   |      |  |             |             |      |        |             |      |           |          |  |         |          |  |                    |  |  |          |             |      |           |             |      |           |              |  |          |             |  |             |      |  |          |      |  |            |     |      |                     |  |  |           |    |      |           |         |      |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |                 |  |  |           |         |      |      |             |      |   |  |                        |  |  |          |             |      |          |             |  |                         |  |  |        |             |      |                |      |      |          |             |  |           |  |  |        |             |      |         |             |      |        |             |      |         |             |      |                        |  |  |           |    |      |                |    |      |           |         |  |
| granuleId  | ID                | <pk> |  |             |             |      |        |             |      |           |          |  |         |          |  |                    |  |  |          |             |      |           |             |      |           |              |  |          |             |  |             |      |  |          |      |  |            |     |      |                     |  |  |           |    |      |           |         |      |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |                 |  |  |           |         |      |      |             |      |   |  |                        |  |  |          |             |      |          |             |  |                         |  |  |        |             |      |                |      |      |          |             |  |           |  |  |        |             |      |         |             |      |        |             |      |         |             |      |                        |  |  |           |    |      |                |    |      |           |         |  |
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| lat11  | numeric(8,4)      |      |  |             |             |      |        |             |      |           |          |  |         |          |  |                    |  |  |          |             |      |           |             |      |           |              |  |          |             |  |             |      |  |          |      |  |            |     |      |                     |  |  |           |    |      |           |         |      |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |                 |  |  |           |         |      |      |             |      |   |  |                        |  |  |          |             |      |          |             |  |                         |  |  |        |             |      |                |      |      |          |             |  |           |  |  |        |             |      |         |             |      |        |             |      |         |             |      |                        |  |  |           |    |      |                |    |      |           |         |  |
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| lat13  | numeric(8,4)      |      |  |             |             |      |        |             |      |           |          |  |         |          |  |                    |  |  |          |             |      |           |             |      |           |              |  |          |             |  |             |      |  |          |      |  |            |     |      |                     |  |  |           |    |      |           |         |      |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |                 |  |  |           |         |      |      |             |      |   |  |                        |  |  |          |             |      |          |             |  |                         |  |  |        |             |      |                |      |      |          |             |  |           |  |  |        |             |      |         |             |      |        |             |      |         |             |      |                        |  |  |           |    |      |                |    |      |           |         |  |
| long13   | numeric(8,4)      |      |  |             |             |      |        |             |      |           |          |  |         |          |  |                    |  |  |          |             |      |           |             |      |           |              |  |          |             |  |             |      |  |          |      |  |            |     |      |                     |  |  |           |    |      |           |         |      |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |                 |  |  |           |         |      |      |             |      |   |  |                        |  |  |          |             |      |          |             |  |                         |  |  |        |             |      |                |      |      |          |             |  |           |  |  |        |             |      |         |             |      |        |             |      |         |             |      |                        |  |  |           |    |      |                |    |      |           |         |  |
| lat14  | numeric(8,4)      |      |  |             |             |      |        |             |      |           |          |  |         |          |  |                    |  |  |          |             |      |           |             |      |           |              |  |          |             |  |             |      |  |          |      |  |            |     |      |                     |  |  |           |    |      |           |         |      |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |                 |  |  |           |         |      |      |             |      |   |  |                        |  |  |          |             |      |          |             |  |                         |  |  |        |             |      |                |      |      |          |             |  |           |  |  |        |             |      |         |             |      |        |             |      |         |             |      |                        |  |  |           |    |      |                |    |      |           |         |  |
| long14   | numeric(8,4)      |      |  |             |             |      |        |             |      |           |          |  |         |          |  |                    |  |  |          |             |      |           |             |      |           |              |  |          |             |  |             |      |  |          |      |  |            |     |      |                     |  |  |           |    |      |           |         |      |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |                 |  |  |           |         |      |      |             |      |   |  |                        |  |  |          |             |      |          |             |  |                         |  |  |        |             |      |                |      |      |          |             |  |           |  |  |        |             |      |         |             |      |        |             |      |         |             |      |                        |  |  |           |    |      |                |    |      |           |         |  |
| DsQAMUTESDTSite  |                   |      |  |             |             |      |        |             |      |           |          |  |         |          |  |                    |  |  |          |             |      |           |             |      |           |              |  |          |             |  |             |      |  |          |      |  |            |     |      |                     |  |  |           |    |      |           |         |      |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |                 |  |  |           |         |      |      |             |      |   |  |                        |  |  |          |             |      |          |             |  |                         |  |  |        |             |      |                |      |      |          |             |  |           |  |  |        |             |      |         |             |      |        |             |      |         |             |      |                        |  |  |           |    |      |                |    |      |           |         |  |
| ShortName  | char(8)           | <pk> |  |             |             |      |        |             |      |           |          |  |         |          |  |                    |  |  |          |             |      |           |             |      |           |              |  |          |             |  |             |      |  |          |      |  |            |     |      |                     |  |  |           |    |      |           |         |      |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |                 |  |  |           |         |      |      |             |      |   |  |                        |  |  |          |             |      |          |             |  |                         |  |  |        |             |      |                |      |      |          |             |  |           |  |  |        |             |      |         |             |      |        |             |      |         |             |      |                        |  |  |           |    |      |                |    |      |           |         |  |
| Site   | varchar(25)       | <pk> |  |             |             |      |        |             |      |           |          |  |         |          |  |                    |  |  |          |             |      |           |             |      |           |              |  |          |             |  |             |      |  |          |      |  |            |     |      |                     |  |  |           |    |      |           |         |      |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |                 |  |  |           |         |      |      |             |      |   |  |                        |  |  |          |             |      |          |             |  |                         |  |  |        |             |      |                |      |      |          |             |  |           |  |  |        |             |      |         |             |      |        |             |      |         |             |      |                        |  |  |           |    |      |                |    |      |           |         |  |
| DsMdOperatorConversion   |                   |      |  |             |             |      |        |             |      |           |          |  |         |          |  |                    |  |  |          |             |      |           |             |      |           |              |  |          |             |  |             |      |  |          |      |  |            |     |      |                     |  |  |           |    |      |           |         |      |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |                 |  |  |           |         |      |      |             |      |   |  |                        |  |  |          |             |      |          |             |  |                         |  |  |        |             |      |                |      |      |          |             |  |           |  |  |        |             |      |         |             |      |        |             |      |         |             |      |                        |  |  |           |    |      |                |    |      |           |         |  |
| Operator   | varchar(40)       | <pk> |  |             |             |      |        |             |      |           |          |  |         |          |  |                    |  |  |          |             |      |           |             |      |           |              |  |          |             |  |             |      |  |          |      |  |            |     |      |                     |  |  |           |    |      |           |         |      |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |                 |  |  |           |         |      |      |             |      |   |  |                        |  |  |          |             |      |          |             |  |                         |  |  |        |             |      |                |      |      |          |             |  |           |  |  |        |             |      |         |             |      |        |             |      |         |             |      |                        |  |  |           |    |      |                |    |      |           |         |  |
| DBString   | varchar(40)       |      |  |             |             |      |        |             |      |           |          |  |         |          |  |                    |  |  |          |             |      |           |             |      |           |              |  |          |             |  |             |      |  |          |      |  |            |     |      |                     |  |  |           |    |      |           |         |      |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |                 |  |  |           |         |      |      |             |      |   |  |                        |  |  |          |             |      |          |             |  |                         |  |  |        |             |      |                |      |      |          |             |  |           |  |  |        |             |      |         |             |      |        |             |      |         |             |      |                        |  |  |           |    |      |                |    |      |           |         |  |
| DsMdAttributeConversion  |                   |      |  |             |             |      |        |             |      |           |          |  |         |          |  |                    |  |  |          |             |      |           |             |      |           |              |  |          |             |  |             |      |  |          |      |  |            |     |      |                     |  |  |           |    |      |           |         |      |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |                 |  |  |           |         |      |      |             |      |   |  |                        |  |  |          |             |      |          |             |  |                         |  |  |        |             |      |                |      |      |          |             |  |           |  |  |        |             |      |         |             |      |        |             |      |         |             |      |                        |  |  |           |    |      |                |    |      |           |         |  |
| GIType   | varchar(40)       | <pk> |  |             |             |      |        |             |      |           |          |  |         |          |  |                    |  |  |          |             |      |           |             |      |           |              |  |          |             |  |             |      |  |          |      |  |            |     |      |                     |  |  |           |    |      |           |         |      |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |                 |  |  |           |         |      |      |             |      |   |  |                        |  |  |          |             |      |          |             |  |                         |  |  |        |             |      |                |      |      |          |             |  |           |  |  |        |             |      |         |             |      |        |             |      |         |             |      |                        |  |  |           |    |      |                |    |      |           |         |  |
| DynamicSQLFlag   | char              | <pk> |  |             |             |      |        |             |      |           |          |  |         |          |  |                    |  |  |          |             |      |           |             |      |           |              |  |          |             |  |             |      |  |          |      |  |            |     |      |                     |  |  |           |    |      |           |         |      |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |                 |  |  |           |         |      |      |             |      |   |  |                        |  |  |          |             |      |          |             |  |                         |  |  |        |             |      |                |      |      |          |             |  |           |  |  |        |             |      |         |             |      |        |             |      |         |             |      |                        |  |  |           |    |      |                |    |      |           |         |  |
| DBString   | varchar(40)       |      |  |             |             |      |        |             |      |           |          |  |         |          |  |                    |  |  |          |             |      |           |             |      |           |              |  |          |             |  |             |      |  |          |      |  |            |     |      |                     |  |  |           |    |      |           |         |      |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |                 |  |  |           |         |      |      |             |      |   |  |                        |  |  |          |             |      |          |             |  |                         |  |  |        |             |      |                |      |      |          |             |  |           |  |  |        |             |      |         |             |      |        |             |      |         |             |      |                        |  |  |           |    |      |                |    |      |           |         |  |
| DsMdJoins  |                   |      |  |             |             |      |        |             |      |           |          |  |         |          |  |                    |  |  |          |             |      |           |             |      |           |              |  |          |             |  |             |      |  |          |      |  |            |     |      |                     |  |  |           |    |      |           |         |      |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |                 |  |  |           |         |      |      |             |      |   |  |                        |  |  |          |             |      |          |             |  |                         |  |  |        |             |      |                |      |      |          |             |  |           |  |  |        |             |      |         |             |      |        |             |      |         |             |      |                        |  |  |           |    |      |                |    |      |           |         |  |
| table1   | varchar(60)       | <pk> |  |             |             |      |        |             |      |           |          |  |         |          |  |                    |  |  |          |             |      |           |             |      |           |              |  |          |             |  |             |      |  |          |      |  |            |     |      |                     |  |  |           |    |      |           |         |      |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |                 |  |  |           |         |      |      |             |      |   |  |                        |  |  |          |             |      |          |             |  |                         |  |  |        |             |      |                |      |      |          |             |  |           |  |  |        |             |      |         |             |      |        |             |      |         |             |      |                        |  |  |           |    |      |                |    |      |           |         |  |
| column1  | varchar(60)       | <pk> |  |             |             |      |        |             |      |           |          |  |         |          |  |                    |  |  |          |             |      |           |             |      |           |              |  |          |             |  |             |      |  |          |      |  |            |     |      |                     |  |  |           |    |      |           |         |      |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |                 |  |  |           |         |      |      |             |      |   |  |                        |  |  |          |             |      |          |             |  |                         |  |  |        |             |      |                |      |      |          |             |  |           |  |  |        |             |      |         |             |      |        |             |      |         |             |      |                        |  |  |           |    |      |                |    |      |           |         |  |
| table2   | varchar(60)       | <pk> |  |             |             |      |        |             |      |           |          |  |         |          |  |                    |  |  |          |             |      |           |             |      |           |              |  |          |             |  |             |      |  |          |      |  |            |     |      |                     |  |  |           |    |      |           |         |      |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |                 |  |  |           |         |      |      |             |      |   |  |                        |  |  |          |             |      |          |             |  |                         |  |  |        |             |      |                |      |      |          |             |  |           |  |  |        |             |      |         |             |      |        |             |      |         |             |      |                        |  |  |           |    |      |                |    |      |           |         |  |
| column2  | varchar(60)       | <pk> |  |             |             |      |        |             |      |           |          |  |         |          |  |                    |  |  |          |             |      |           |             |      |           |              |  |          |             |  |             |      |  |          |      |  |            |     |      |                     |  |  |           |    |      |           |         |      |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |                 |  |  |           |         |      |      |             |      |   |  |                        |  |  |          |             |      |          |             |  |                         |  |  |        |             |      |                |      |      |          |             |  |           |  |  |        |             |      |         |             |      |        |             |      |         |             |      |                        |  |  |           |    |      |                |    |      |           |         |  |
| DsMdL7ErrorHandling_gr   |                   |      |  |             |             |      |        |             |      |           |          |  |         |          |  |                    |  |  |          |             |      |           |             |      |           |              |  |          |             |  |             |      |  |          |      |  |            |     |      |                     |  |  |           |    |      |           |         |      |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |                 |  |  |           |         |      |      |             |      |   |  |                        |  |  |          |             |      |          |             |  |                         |  |  |        |             |      |                |      |      |          |             |  |           |  |  |        |             |      |         |             |      |        |             |      |         |             |      |                        |  |  |           |    |      |                |    |      |           |         |  |
| granuleId  | ID                | <pk> |  |             |             |      |        |             |      |           |          |  |         |          |  |                    |  |  |          |             |      |           |             |      |           |              |  |          |             |  |             |      |  |          |      |  |            |     |      |                     |  |  |           |    |      |           |         |      |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |                 |  |  |           |         |      |      |             |      |   |  |                        |  |  |          |             |      |          |             |  |                         |  |  |        |             |      |                |      |      |          |             |  |           |  |  |        |             |      |         |             |      |        |             |      |         |             |      |                        |  |  |           |    |      |                |    |      |           |         |  |
| sceneGranuleId   | ID                | <pk> |  |             |             |      |        |             |      |           |          |  |         |          |  |                    |  |  |          |             |      |           |             |      |           |              |  |          |             |  |             |      |  |          |      |  |            |     |      |                     |  |  |           |    |      |           |         |      |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |                 |  |  |           |         |      |      |             |      |   |  |                        |  |  |          |             |      |          |             |  |                         |  |  |        |             |      |                |      |      |          |             |  |           |  |  |        |             |      |         |             |      |        |             |      |         |             |      |                        |  |  |           |    |      |                |    |      |           |         |  |
| ShortName  | char(8)           |      |  |             |             |      |        |             |      |           |          |  |         |          |  |                    |  |  |          |             |      |           |             |      |           |              |  |          |             |  |             |      |  |          |      |  |            |     |      |                     |  |  |           |    |      |           |         |      |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |       |              |  |        |              |  |                 |  |  |           |         |      |      |             |      |   |  |                        |  |  |          |             |      |          |             |  |                         |  |  |        |             |      |                |      |      |          |             |  |           |  |  |        |             |      |         |             |      |        |             |      |         |             |      |                        |  |  |           |    |      |                |    |      |           |         |  |

*Figure A-12. System Information (2 of 2)*

## **Abbreviations and Acronyms**

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|        |  |
|--------|--|
| ANSI   | American National Standards Institute              |
| ASCII  | American Standard Code for Information Exchange    |
| CASE   | Computer Aided Software Engineering                |
| CD     | contractual delivery 213-001                       |
| CDRL   | contract data requirements list                    |
| CI     | configuration item                                 |
| COTS   | commercial off-the-shelf (hardware or software)    |
| CSCI   | computer software configuration item               |
| DAAC   | Distributed Active Archive Center                  |
| DBCC   | Database Consistency Checker                       |
| DBMS   | Database Management System                         |
| DCN    | Document Change Notice                             |
| DID    | data item description                              |
| DMS    | Data Management Subsystem                          |
| ECS    | EOSDIS Core System                                 |
| EDC    | EROS Data Center                                   |
| EDHS   | ECS Data Handling System                           |
| EOSDIS | Earth Observing System Data and Information System |
| EROS   | Earth Resources Observation System                 |
| ERD    | Entity Relationship Diagram                        |
| ESDIS  | Earth Science Data and Information System (GSFC)   |
| ESDT   | Earth science data types                           |
| ESN    | EOSDIS Science Network (ECS)                       |
| FK     | Foreign Key  |
| GSFC   | Goddard Space Flight Center                        |
| GUI    | graphic user interface                             |
| HDF    | hierarchical data format                           |

|         |  |
|---------|--|
| HDF-EOS | an EOS proposed standard for a specialized HDF data format |
| HTML    | HyperText Markup Language                                  |
| HTTP    | Hypertext Transport Protocol                               |
| I/O     | input/output   |
| ICD     | interface control document                                 |
| INGST   | Ingest Services CSCI                                       |
| IOS     | Interoperability Subsystem                                 |
| LaRC    | Langley Research Center (DAAC)                             |
| MSS     | Management Support Subsystem                               |
| N/A     | not applicable   |
| NAS     | National Academy of Science                                |
| NASA    | National Aeronautics and Space Administration              |
| NSIDC   | National Snow and Ice Data Center (DAAC)                   |
| ODL     | Object Definition Language                                 |
| PCF     | Process Control File                                       |
| PDF     | Portable Document Format                                   |
| PDPS    | Planning and Data Processing Subsystem                     |
| PGE     | Product Generation Executive                               |
| PK      | Primary Key  |
| QA      | Quality Assurance  |
| SDSRV   | Science Data Server CSCI                                   |
| SQL     | Structured Query Language                                  |
| STMGT   | Storage Management Software CSCI                           |
| SUBSRV  | Subscription Server  |
| WWW     | World-Wide Web   |