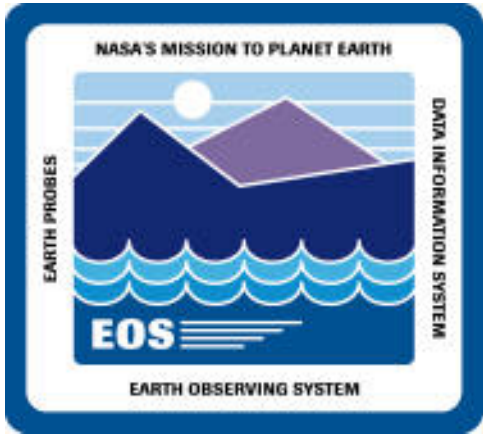

Science Software Integration and Test (AITTL CSCI)

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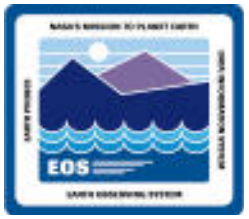
15 April 1996

PDPS Roadmap

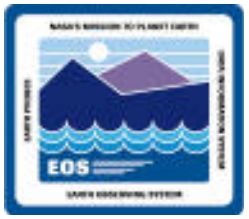


Special Topic: Production Rules

Capture PGE Profile at SSI&T

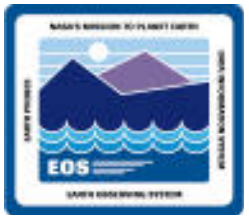
Describe Production Goals through **Production Requests**
Accept **On-demand** Production Requests
Accept Resource Reservations and Create **Resource Plans**
Planning Production Controls - Create and Activate **Production Plans**
Coordinate Production from Data Arrival with **Subscription** Notifications
Handle L0 **Data Preparation**
Special Topic: Production Subsetting
Realtime **Production** Controls and PGE Execution Monitoring
Special Topic: PGE Exit Handling
Quality Assurance Check Output Products
Special Topic: PDPS Database
Special Topic: Ancillary Data Pre-Processing

Science Software Integration and Test Overview



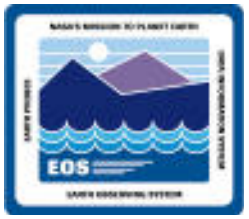
- **SSI&T is the process of testing and integrating science software at the DAACs.**
- **Algorithm Integration and Test (the AITTL CSCI) is the grouping of custom and COTS tools provided by ECS to perform that process.**
- **Science Algorithms are verified and tested as Product Generation Executives (PGEs). Tools to aid in this process are provided via the AIT Manager GUI.**
- **Once testing and verification has completed successfully, integration into the production system (PDPS) begins.**
- **PGEs must be defined to the production system before they can be planned and executed. Production rules for the PGE must be created. Tools to do this are provided by the PGE Registration GUIs.**

Science Software Integration and Test Overview (cont.)



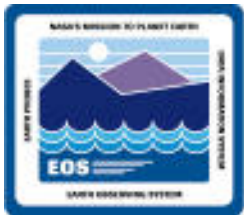
- Once defined to the production system, the PGE is integrated in the production environment (could be a “test” copy of the production environment brought up via Mode Management).
- Once the PGE has been successfully integrated into the production environment, the Science Software Archive Package (the PGE, and associated test and documentation files) is stored at the Data Server. The Science Software Archive Package GUIs provide the user interface to update and store SSAPs.
- The PGE is now ready to be run for products.

AITTL Design Drivers



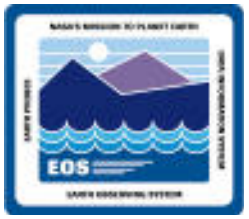
- **Ir1/Release A:**
  - **Display/Print/Update/Create**
    - » Science documentation
    - » PGE input and output files
    - » Metadata
    - » Reports
  - **Verify Software Standards Compliance and Analyze Software for Errors**
  - **Compare Files of Various Formats**
  - **Profile PGE Performance and Resource use.**
- **Ir1/Release A/Release B:**
  - **Create/Update the Profile of a PGE**
- **Release B:**
  - **Manipulate Science Software Archive Packages**

AITTL New Release B Functionality



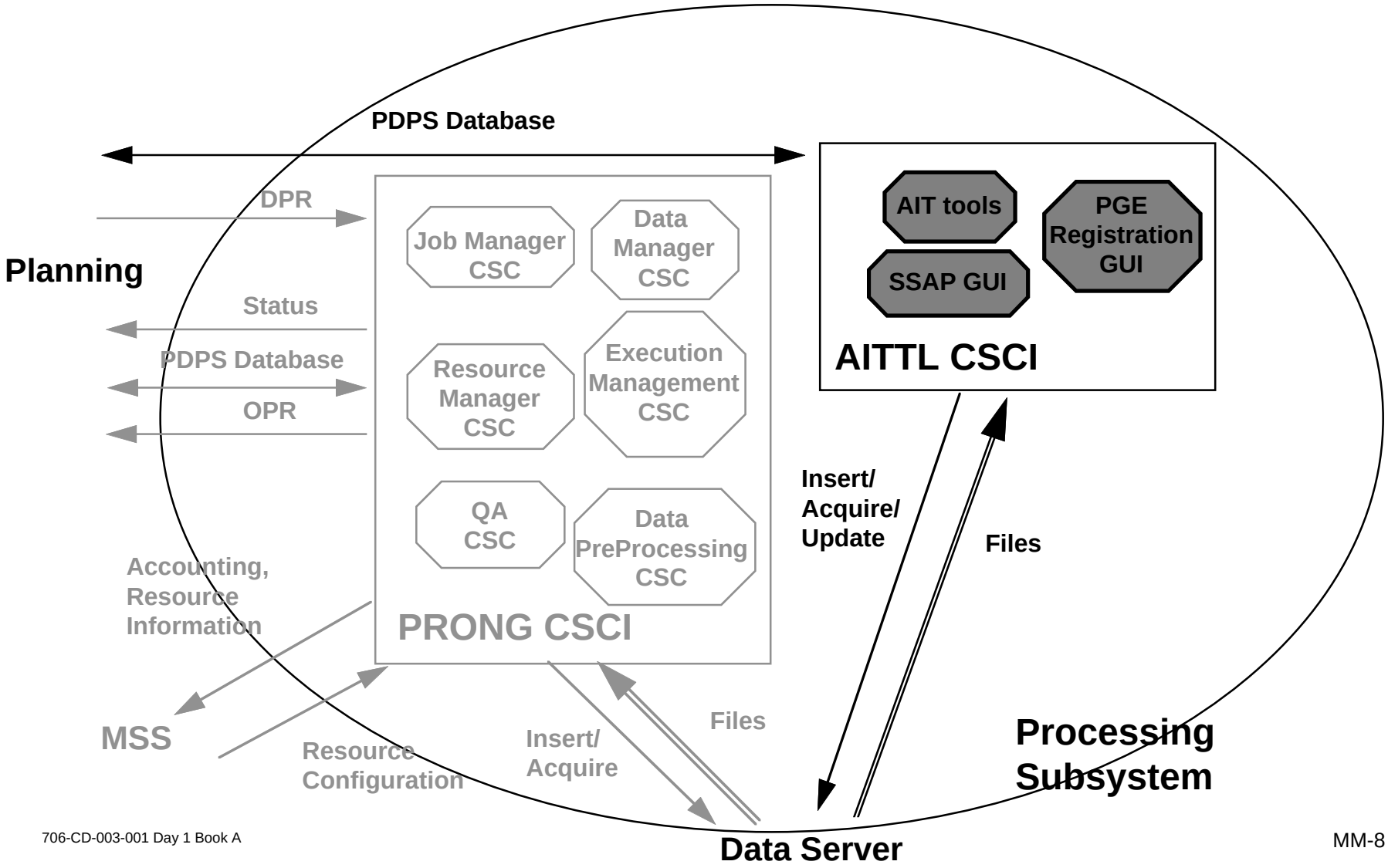
- Science Software Archive Package manipulation
  - Create and Delete SSAPs
  - Edit the list of files within an SSAP
  - Edit the Metadata of an SSAP
- New Production Rules support
- PGE Error Handling support

AITTL Public Interfaces/ Key Mechanisms

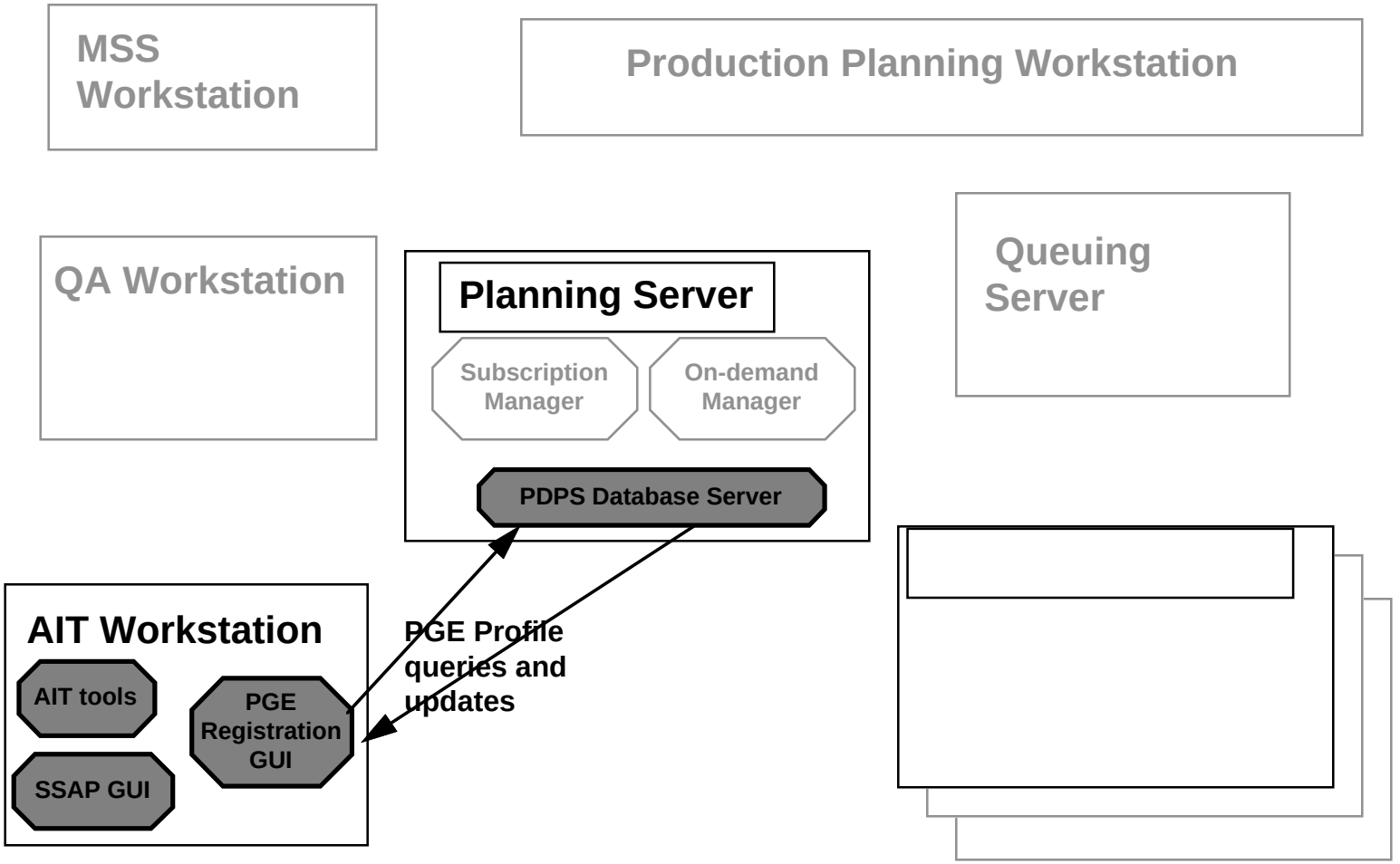


- Data Server Interface
  - Inserting an SSAP
  - Acquiring an SSAP
  - Deleting an SSAP
  - Inspect the list of SSAPs
- PDPS Database objects
  - The PGE Profile defines a PGE to PDPS
- Key Mechanisms
  - Process Framework
  - Universal References

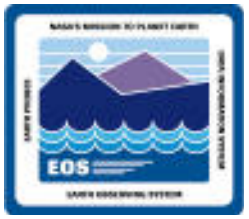
AITTL CSCI
Software Architecture Overview



AITTL
HW/SW Architecture



Science Software Archive Package GUI



- **Workflows:**

  SSI&T Science Data Specialist Workflow 605-CD-002-001 3.2.5.4

- **Object Model:**

  Science Software Archive Package GUI 305-CD-027-002 6.3.2

- **Event Traces:**

  Create New SSAP 305-CD-027-002 6.5-10

  This scenario describes the creation of a new Science Software Archive Package by copying an existing SSAP.

- **PDL:**

  EcTInt DpAtSSAPGuiNB::

  CreateSSAP (RWCString SSAPName, EcTInt Display) 305-CD-027-002 6-63

  This method creates a new Science Software Archive Package with the name supplied by the user (SSAPName). If the user has selected a previous SSAP, then the files and metadata from that SSAP are copied into the new SSAP. The Edit SSAP File List GUI is then brought up to allow the user to alter the files list of the new SSAP. If Display, then nothing is displayed to the screen, because the method is being called from FileInput instead of the GUI.

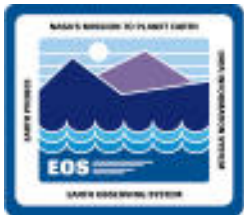
PGE Profile

- **Object Model:**

  PGE Profile View **305-CD-026-002 4.2.1**

  This object model is shown because it is a picture of the information required to define a PGE to PDPS. All of the important classes are show n on this object model and are also linked to the PGE Registration GUI model which allows the user to input PGE information into the PDPS database. PGEs are defined to PDPS via objects on the PGE Profile, which are then used by Planning and Processing to schedule and execute the PGEs. Since these objects are mostly static and used to indicate data in the PDPS database, no Event Traces exist, and very little PDL was developed.

PGE Registration GUI



- **Workflows:**

SSI&T Production Planner Workflow	**605-CD-002-001**	**3.2.5.6**
SSI&T Science Data Specialist Workflow	**605-CD-002-001**	**3.2.5.8**

- **Object Model:**

PGE Registration	**305-CD-027-002**	**6.3.3**

- **Event Traces:**

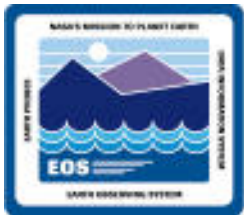
Create New Orbit Scheduled PGE Activation Rule	**305-CD-027-002**	**6.5-16**

This scenario describes the definition of an Orbit Scheduled PGE's Activation Rule and its corresponding Orbit Model.

Edit Existing PGE Exit Code Action	**New**

This scenario describes the altering of an already existing exit code action record for a PGE.

PGE Registration GUI (cont.)



- **PDL:**

void DpAtPgeActivationRuleB::

FileInput (RWCString Filename, EcTInt Position) **305-CD-027-002 6-46**

This method parses the file specified by Filename from the specified Position. It calls the other methods of the class to satisfy the Activation Rule requests in the file. When calling the other methods, it sets Display=0, so that nothing will come to the screen. When this method finds a command that is not Activation Rule request, it returns control the constructor.

void DpAtPGEExitCodeActionNB::

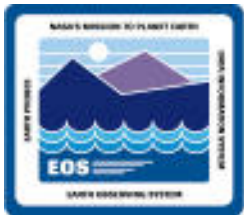
NextExitCode (EcTInt Display) New

This method increments to the next Error Action record for the PGE. It increments the current exit code, then queries the PDPS database for the next Error Action record for the PGE. It displays the resulting record (or a message indicating that no other records exist) to the screen.

COTS SW Components

- **Much of Science Software Integration and Test Functionality from Ir1 and Release A was satisfied through COTS components:**
  - **Ghostview**
  - **Adobe Acrobat**
  - **Netscape**
  - **SPARCWorks (on Sun)**
  - **CODEVision (on SGI)**
  - **CaseVision**
  - **Interactive Data Language**
- **No new COTS for Release B**
  - **There may be new versions of Ir1/Release A COTS because of operating system upgrades and platform additions.**

Summary



Science Software Integration and Test is facilitated by the use of the tools provided by the AITTL CSCI. Much of this functionality is provided in Ir1 and Release A versions of AITTL.

New Release B Functionality:

- **Science Software Archive Package manipulation**
- **New Production Rules support**
- **PGE Error Handling support**