

# Production Processing Operations Concepts at Release A

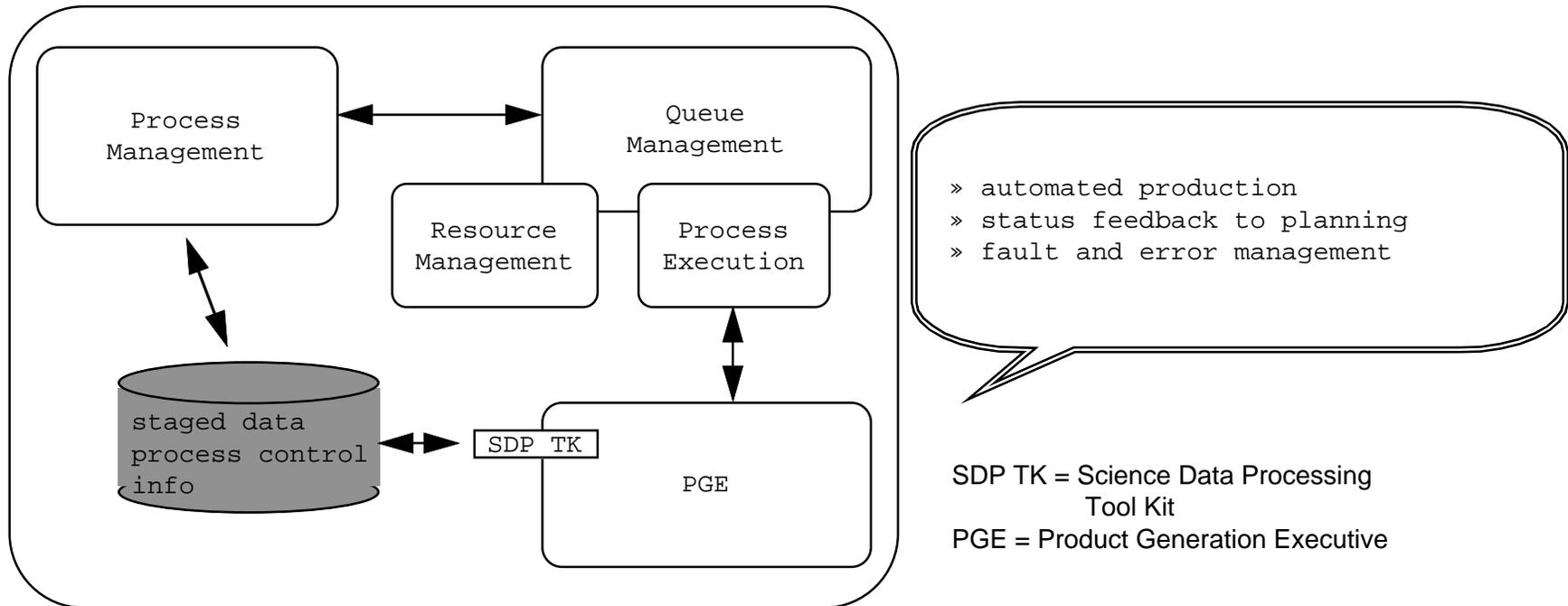
- **An Automated Process**
  - System planned to support a highly automated process for defining, submitting and monitoring production processing jobs
  - Minimal operator interaction with individual production jobs assumed
- **Operators Monitor Processing**
  - System concept supports operators monitoring flow of processing, data staging & destaging to insure regularity of processing
  - Routine processing assumes minimal operator interaction to initiate & control processing queues
  - Multiple display options
- **Operators Respond to Processing Anomalies**
  - Operators typically act to assess and resolve problems
  - Processing subsystem detects & alerts operations of problems such as delayed data arrivals and failed jobs. Alerts signaled by color change & audible alarm (TBD)

# Processing Subsystem Concepts & Drivers

- **Data Driven product generation for increased automation**
  - Job initiation based on data availability
  - Minimal human interaction required to support Production Processing
- **Production management shared between Planning and Processing**
  - Planning monitors data arrival & ensures data availability
  - Processing controls resource allocation and execution
- **Dynamic status update provided by Planning and Processing**
  - Processing state attributes include rejected, queued, data staging, executing, suspended, canceled, killed data destaging. PGE generated status also display (TBD)
- **PGEs have dedicated processing resources**
  - No PGE released for execution until all resources required are available and allocated. Deadlock cannot occur.
  - Concept for operations is one processor per process. However, PGE dispatching algorithm parameters may be modified by operations to permit more than one PGE to execute at a time on a processor.

# Processing Subsystem Concept

- **Process Management** coordinates production with planning
- **Queue Management** optimizes local processing



# Key Definitions

**Production Request (PR) - Contained in Planning database. The mechanism for requesting production to be performed. Will lead to the generation of multiple DPRs . A PR identifies a product to be produced and the time range that it should be produced for.**

**Product Generation Executive (PGE) - The smallest schedulable entity managed by Planning and processing. Consists of executables and scripts that may lead to the generation of standard data products.**

**Data Processing Request (DPR) - Generated by Planning using PR. One DPR requests one PGE to be executed. DPR information includes:**

**PGE**

**Input data granule(s)Output data granule & archive location**

**Planned start/end execution times**

**Priority**

# Key Definitions (cont.)

**Plan - The processing objectives for a particular time period. Essentially consists of a list of DPRs. Generated by Planning Subsystem using:**

**PRs**

**Resource Availability information**

**Data Availability predictions**

**Production Rules**

**PGE Profiles**

**Two types of plans exist:**

**Candidate Plan(s)- A potential active plan. Represents a “what-if” planning result. Several candidate plans may exist at one time.**

**Active Plan - The candidate plan selected by operations to be the current plan.**

# Processing Information for Operations

## Selected Information for Displays

- **DPRs:**  
DPR ID, PR ID, PGE ID, deadlines, input & output data granules, planned start time, planned stop time, priority, processing state, queue position, resource info, user parameters
- **Processing Queue:**  
Queue ID, List of Queued DPRs
- **Resources:**  
Resource ID, resource name, resource state (off-line, on-line, startup, shutdown, available, unavailable)
- **Processing Log:**  
PGE execution, staging, destaging, operations commands, resource and PGE execution faults, alerts, resource history, etc.