

PRODUCTION PLANNING AND PROCESSING

ECS Pre-Release B Testbed Training

Overview of Lesson



- **Introduction**
- **Creating/Updating a Production Request**
- **Creating a New Production Plan**
- **Reviewing Data Processing Requests**
- **Reviewing a Plan Timeline**
- **Production Planning Scenarios**
- **Configuring AutoSys Screens/Displays**
- **Reviewing Hardware Status, DPR Dependency, DPR Production Timeline, Alarms, and Job Activities**

Overview of Lesson (Cont.)



- **Modifying Job Priority**
- **Modifying Job Status**
- **Reviewing Activity and Job Dependency Logs**
- **Generating Production Reports**
- **Defining and Running Monitors/Browsers**
- **Changing the Database Maintenance Time**
- **Production Processing Scenarios**

Overview of Lesson (Cont.)



- **Practical Exercise**
 - **Creating a New Production Request**
 - **Editing/Modifying a Production Request**
 - **Creating a New Production Plan**
 - **Reviewing Data Processing Requests**
 - **Reviewing a Plan Timeline**
 - **Configuring AutoSys Runtime Options**
 - **Configuring Hardware Groups**
 - **Reviewing Hardware Status and Changing Hardware Status Views**
 - **Reviewing DPR Dependencies**
 - **Reviewing the DPR Production Timeline**

Overview of Lesson (Cont.)



- **Practical Exercise (Cont.)**
 - **Reviewing Alarms and Configuring Alarm Selection**
 - **Reviewing Job Activities and Job Selection Criteria**
 - **Modifying Job Priority**
 - **Modifying Job Status**
 - **Reviewing Activity Logs and Job Dependency Logs**
 - **Generating Standard Production Reports**
 - **Generating AutoSys Reports**
 - **Defining and Running Monitors/Browsers**
 - **Changing the Database Maintenance Time**

Objectives



- **OVERALL:**
 - Develop proficiency in the procedures that apply to production planning and production processing operations
- **SPECIFIC:**
 - Perform the steps involved in...
 - » creating a new production request
 - » modifying a production request
 - » creating a new production plan
 - » reviewing data processing requests
 - » reviewing a production plan timeline
 - » configuring AutoSys runtime options
 - » configuring AutoSys hardware groups

Objectives (Cont.)



- **SPECIFIC (Cont.):**

- **Perform the steps involved in...**

- » reviewing hardware status (including changing hardware status views) using AutoSys
 - » reviewing data processing request (DPR) dependencies
 - » reviewing the DPR production timeline
 - » reviewing and configuring AutoSys alarms
 - » reviewing job activities and job selection criteria using AutoSys
 - » modifying job priority using AutoSys
 - » modifying job status using AutoSys
 - » reviewing activity logs and job dependency logs
 - » generating standard production reports

Objectives (Cont.)



- **SPECIFIC (Cont.):**
 - **Perform the steps involved in...**
 - » **generating AutoSys reports**
 - » **defining and running monitors/browsers**
 - » **changing the database maintenance time**

Creating/Updating a Production Request (PR)



- **Production planning at the Data Active Archive Centers (DAACs)**
 - process by which the Production Planner notifies the Planning Subsystem (PLS) of the science processing jobs that are to be processed and when they are to be processed
- **Science Software (SS)**
 - does the actual data processing
 - is developed by satellite Instrument Teams (ITs)
 - is embodied in Product Generation Executives (PGEs) when the software is integrated into the ECS production processing environment

Creating/Updating a PR (Cont.)



- **PGEs**
 - science software code (e.g., executable programs or shell scripts) that contain the instructions for processing data to create the desired products
- **Production Request (PR)**
 - Production Planner defines ECS science data processing jobs in terms of PRs
 - A PR is an order for data to be produced by the data processing system
 - A single PR may specify...
 - » several jobs that are to be run over a period of time
 - » a single job producing a single set of data

Creating/Updating a PR (Cont.)



- **Production Request (Cont.)**
 - may apply to the processing of new data (standard PRs or standing orders)
 - may apply to the reprocessing of existing data (reprocessing PRs)
 - each PR identifies a specific PGE for generating a particular type of product
 - » some PGEs are dependent on others; i.e., some PGEs require input data that are the output of other PGEs
 - planning software will recognize and reject a PR when the PR specifies a PGE that requires data from another PGE that has not yet been specified in a PR

Creating/Updating a PR (Cont.)



- **Planning Subsystem**

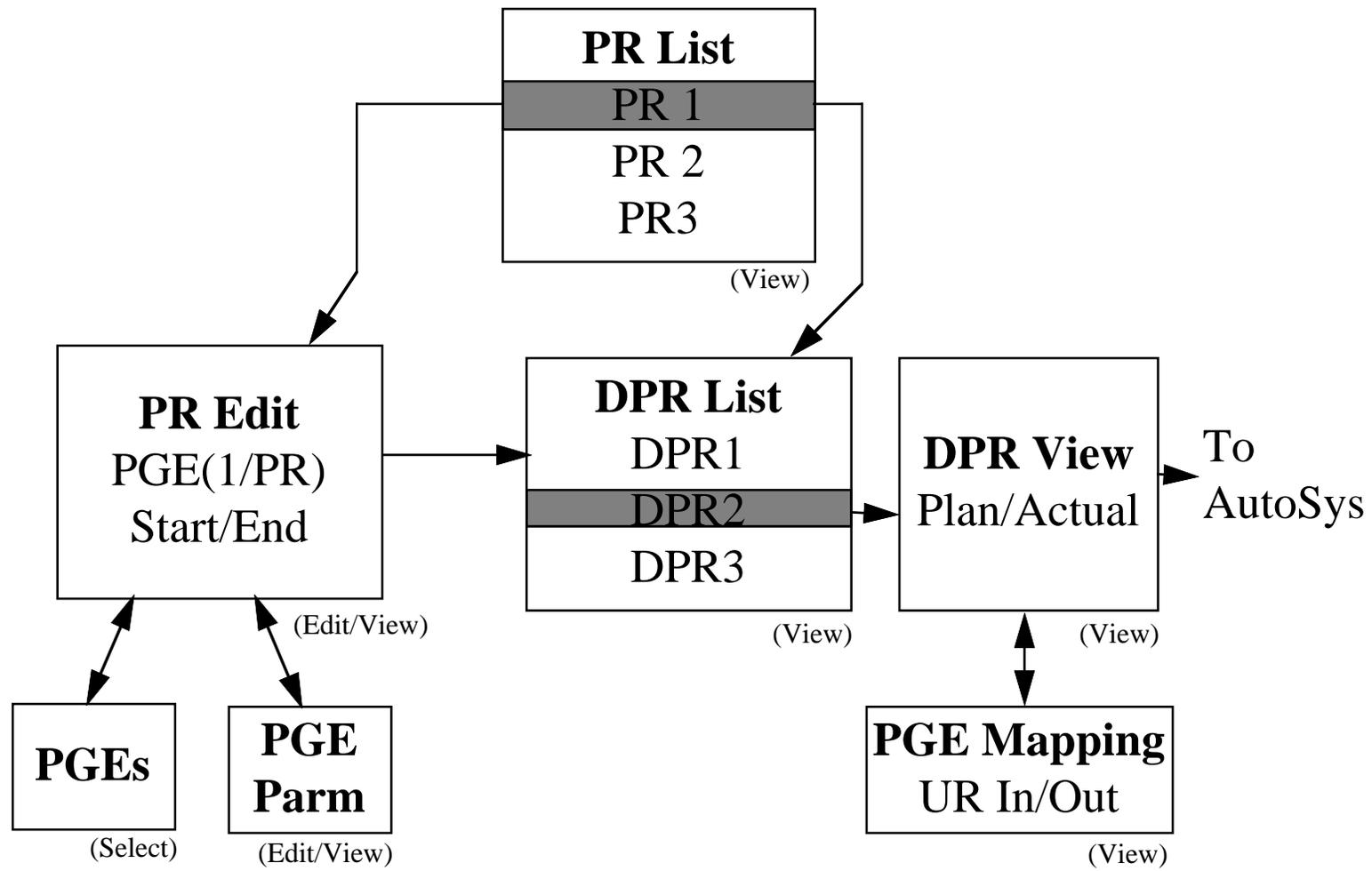
- uses each PR to generate either one or a series of **Data Processing Requests (DPRs)**
 - » each DPR corresponds to one execution of a single **PGE**
 - » each DPR contains the information that is needed by the **SDPS** processing function
- checks the availability of the data required for the **DPR**
- determines what data will be included in the **DPR** output
 - » so the system can make predictions concerning the future availability of data

Creating/Updating a PR (Cont.)



- **Production Planner has access to the Planning Subsystem through...**
 - Production Request Editor
 - Planning Workbench
 - UNIX commands
- **Production Request Editor**
 - used for creating or modifying PRs
- **Planning Workbench**
 - used for scheduling PRs

Creating/Updating a PR (Cont.): PRE Flow



Creating/Updating a PR (Cont.)



- **Production Planner must coordinate with the Resource Planner**
 - before planning production
 - to resolve all resource allocation issues
 - obtain list of resources available for use in processing
 - obtain allocation profile with time for those resources

Creating/Updating a PR (Cont.)



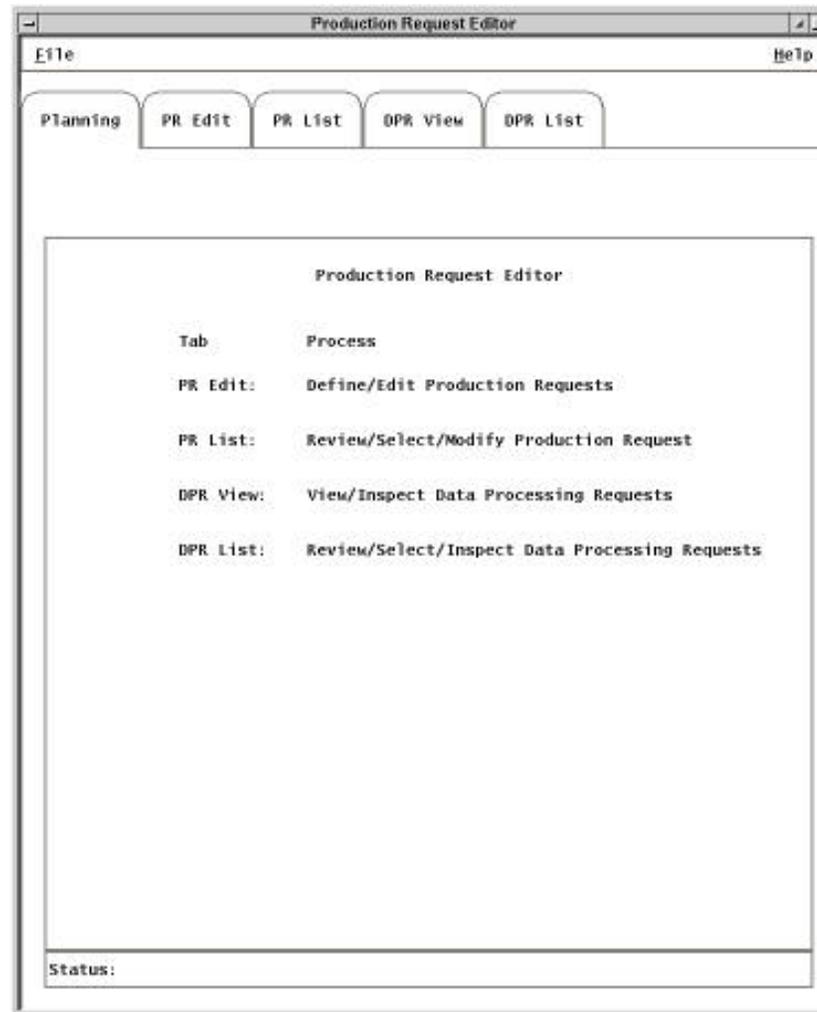
- **Monthly plans**
 - developed for the coming month and one or two months in advance
 - produced, reviewed, updated, published and distributed approximately two weeks before the beginning of the month
 - used to establish a baseline against which production targets can be measured
- **Weekly plans**
 - produced, reviewed, updated, published and distributed approximately five days before the beginning of the coming week
 - used to produce a baseline for comparison of planned vs. actual production results

Creating/Updating a PR (Cont.)



- **Daily plan or schedule**
 - produced each day for the next processing day
 - developed from the current weekly plan
 - » adjusted to reflect the actual processing accomplished and the actual resources available at the time the daily schedule is generated

Creating/Updating a PR (Cont.): PR Editor Introductory GUI



Creating/Updating a PR (Cont.): PR Edit GUI



Production Request Editor

File Edit Help

Planning PR Edit PR List DPR View DPR List

Production Request Identification

Origination Date: #N/A

PR Name: New Originator:

Request Definition

Satellite Name: None Priority: 0

Instrument Name: None PGE ...

PGE Name: None PGE Parameters...

PGE Version: None

Duration

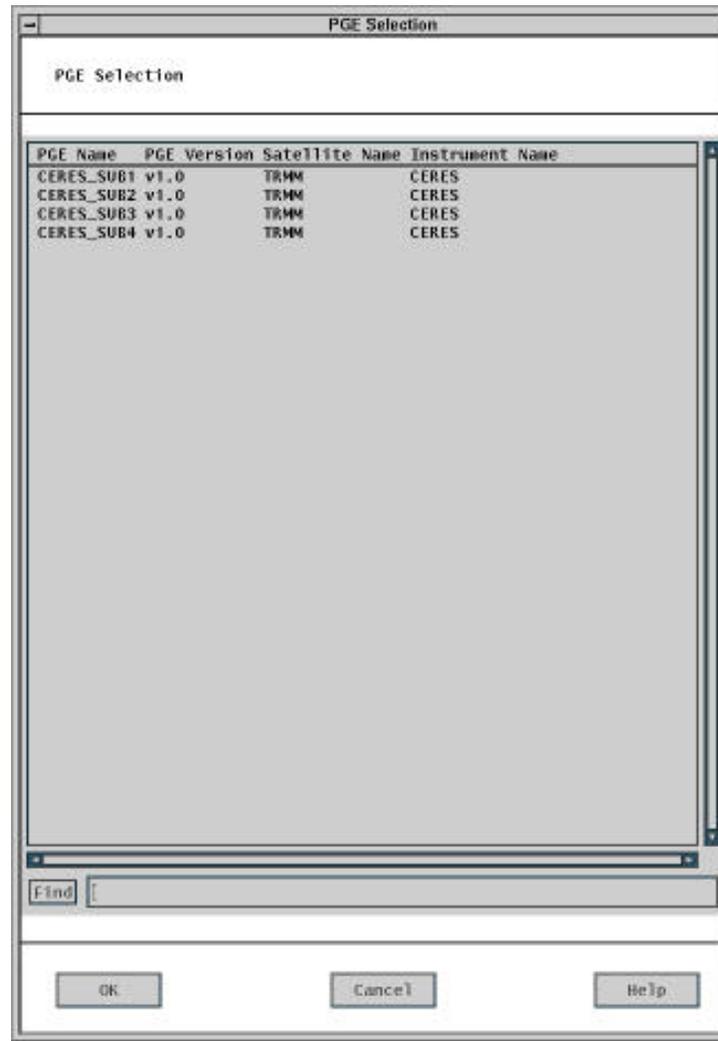
Start: Date: Time:

End: Date: Time:

Comment:

Status:

Creating/Updating a PR (Cont.): PGE Selection GUI



Creating/Updating a PR (Cont.): PGE Parameter Mappings GUI



PGE Parameter Mappings

PR Name: Day2

Parameter Mapping

Parameter Name	Logical Id	Default Value	Override Value	Desc
Satelliteld	1200	9703381		NON
FirstMissionDay	1201	0		NON
ProcessFirstDayOnly	1202	1		NON
fdf.next.nat.met	1248	1100:1		NON
ProcessEphemerts	1249	on		NON
Satelliteld	1250	107		NON
FirstMissionDay	1251	0		NON
QaWindowSize	1252	5		NON
QaShortGapInterval	1253	0.75		NON
QaLongGapInterval	1254	10.0		NON
QaRedLowAbsolute	1255	-1.0		NON
QaYellowLowAbsolute	1256	-0.5		NON
QaYellowHighAbsolute	1257	0.5		NON
QaRedHighAbsolute	1258	1.0		NON
QaYellowDifference	1259	0.5		NON
QaRedDifference	1260	1.0		NON
QaYellowSampleSD	1261	8.610		NON
QaRedSampleSD	1262	15.544		NON
EulerAngleOrder	1268	3,2,1		NON
attitude.next.nat	1298	1153:1		NON
ProcessAttitude	1299	on		NON

Find:

OK Cancel Help

Creating/Updating a PR (Cont.): Procedure



- **Type the desired data in the following fields:**
 - Duration Start Date
 - Duration Start Time
 - Duration End Date
 - Duration End Time
- **Type any relevant comments in the Comments field**
- **Select File → Save As to save the production request**

Editing/Modifying a PR: Procedure



- **Access the Production Request Editor using UNIX commands**
- **Select the Production Request Editor by clicking on the PR Edit tab**
- **Select File → Open then select the PR to be edited/modified**
- **If the PR's priority is to be changed, type the new priority in the Priority field**
- **If the PGE is to be changed, click on the PGE... button to display the PGE Selection GUI**

Editing/Modifying a PR (Cont.): PR List GUI



Production Request Editor

File Edit Help

Planning PR Edit PR List OPR View DPR List

Production Requests

PR Name	PGE ID	Priority	Start	End
PR_CERES1_v1.0	CERES_SUB1_v1.0	1	03/21/96 19:00:00	03/22/96 19:00:00
PR_TEST1_v1.0	CERES_SUB1_v1.0	1	03/31/96 19:00:00	04/30/96 20:00:00
PR_TEST2_v1.0	CERES_SUB2_v1.0	1	03/31/96 19:00:00	04/30/96 20:00:00
PR_TEST3_v1.0	CERES_SUB3_v1.0	1	03/31/96 19:00:00	04/30/96 20:00:00
PR_TEST4_v1.0	CERES_SUB4_v1.0	1	03/31/96 19:00:00	04/30/96 20:00:00

Find

Status:

Editing/Modifying a PR (Cont.): Procedure



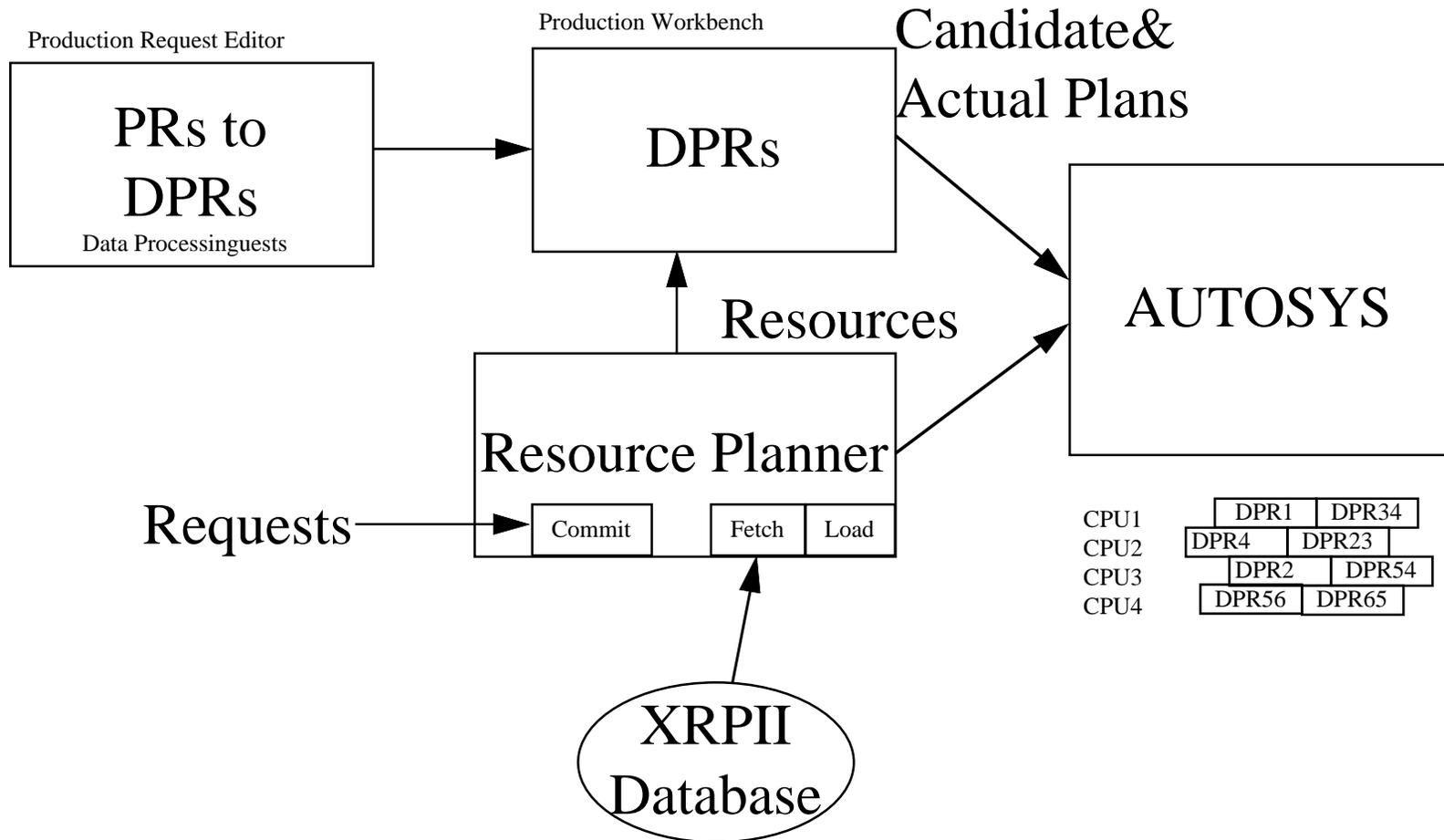
- **Select the desired PGE by clicking on the appropriate row in the table**
- **Click on the OK button to display the Production Request - PR Edit GUI**
- **If any PGE parameter(s) should be changed, click on the PGE Parameters... button**
- **Select (highlight) a parameter to be changed by clicking on the corresponding row in the list of parameters**
- **Type the desired value in the Parameter Mapping field**

Editing/Modifying a PR (Cont.): Procedure



- **Click on the OK button to approve the changes and display the Production Request - PR Edit GUI**
- **Type the desired data in the following fields:**
 - Duration Start Date
 - Duration Start Time
 - Duration End Date
 - Duration End Time
- **Type any relevant comments in the Comments field**
- **Select File → Save As to save the production request**

Creating a New Production Plan: Planning Workbench



Creating a New Production Plan



- **Production Planner creates a plan for production data processing at the DAAC**
 - selects specific PRs whose DPRs are to be run
 - selects PRs from two lists of PRs
 - » list of available “**Unscheduled**” PRs
 - » list of “**Scheduled**” PRs
 - uses arrow buttons to move PRs between lists until the “**Scheduled**” list contains the desired set of PRs that define the new plan

Creating a New Production Plan (Cont): Procedure



- **Access the Planning Workbench using UNIX commands**
 - If you want to “kill” (deactivate) the currently active production plan without activating a replacement, click on the Kill button
 - Whenever you activate a plan (by clicking on the Activate button), you automatically “kill” the currently active plan
- **Select File → New from the pull-down menu**
- **Type a name for the new plan**
- **Click on OK**

Creating a New Production Plan (Cont): Planning Workbench GUI



Planning Workbench

File Options Help

Plan Name: TEST PLAN

Status: CANDIDATE

Baseline

Activate Rollover Time:

Kill

Comments:

This is a production test plan.]

Production Requests

Unscheduled:

NAME	PRIORITY
New	1
NewTest	1
PR_CERESS1_v1.0	1
PR_TEST3_v1.0	1
PR_TEST4_v1.0	1

schedule: ▼ unschedule: ▲

Scheduled:

NAME	PRIORITY
PR_TEST1_v1.0	1
PR_TEST2_v1.0	1

Prioritize Refresh

Creating a New Production Plan (Cont): Procedure



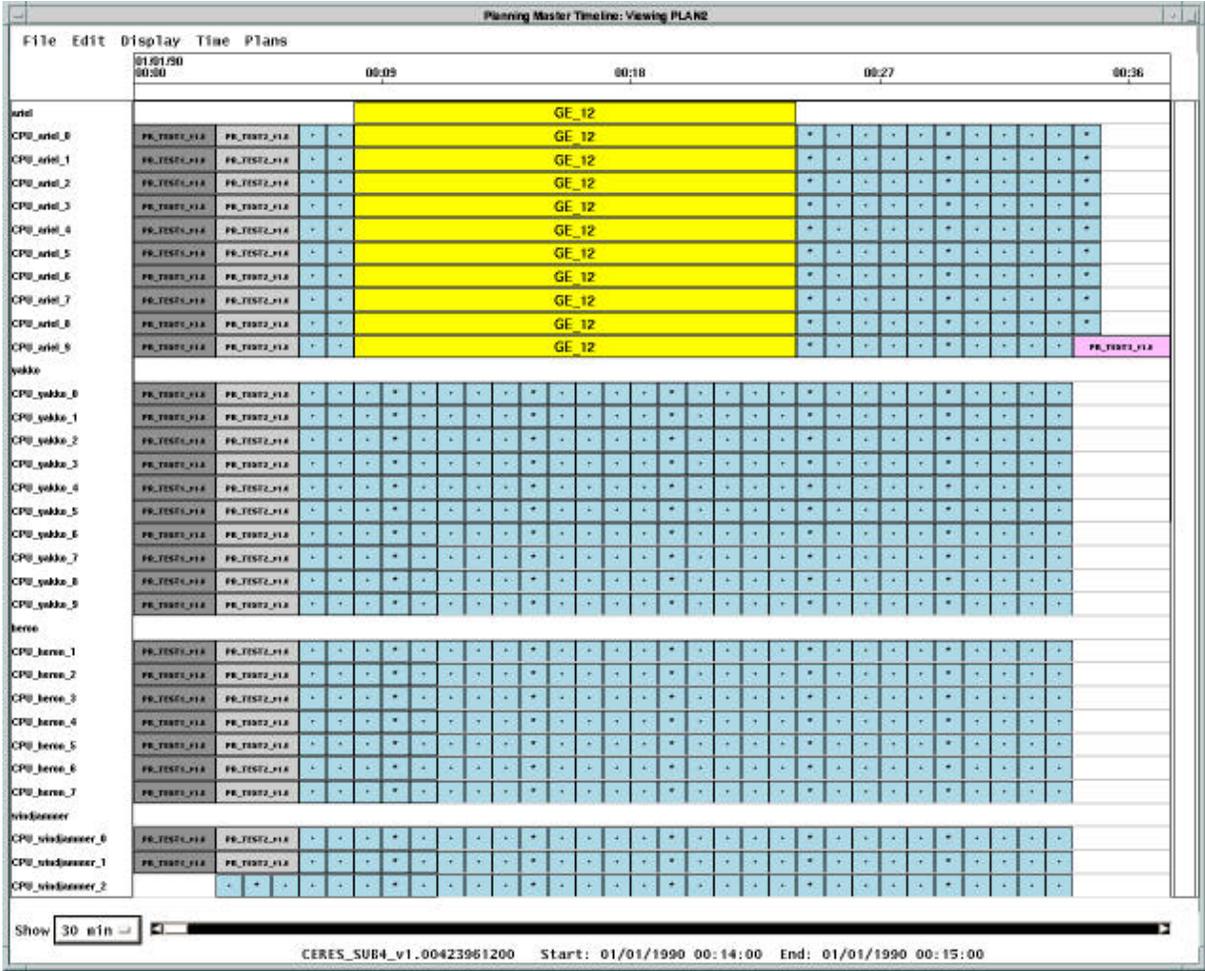
- **Type any relevant comments in the Comments field**
- **Move PRs between the Unscheduled and Scheduled lists as necessary using the arrow buttons**
- **When the Scheduled list accurately reflects the PRs to be scheduled in the production plan, select File → Save (or File → Save As) to save the new production plan**

Creating a New Production Plan (Cont): Procedure



- **If the new plan is to be activated immediately, click on the Activate button to activate the new plan**
 - currently active plan is killed (deactivated) and the new plan is activated
 - Production Planning Timeline GUI is displayed
- **If the new production plan is to be used as a baseline plan, click on the Baseline button**
 - plan is recorded as well as the time of baselining so that it can be used in comparing future processing results with planned objectives

Creating a New Production Plan (Cont): Planning Timeline GUI



Creating a New Production Plan (Cont): Procedure



- If the production plan being displayed is active and should be deactivated, click on the Kill button
 - plan is deactivated without activating another plan