Use case description

<table>
<tr><td>Use Case Name: Create an observing program</td><td>ID: 01</td><td>Importance Level: High</td></tr>
<tr><td colspan="2">Primary Actor: Science Observer</td><td>Use Case Type: Detail, Essential</td></tr>
<tr><td colspan="3">Stakeholders and Interests: Science Observer - create an observing program</td></tr>
<tr><td colspan="3">Brief Description: science observer transform validated science plan to observing program</td></tr>
<tr><td colspan="3">Trigger: There is a science plan in the system that has already been validated.

Type: External</td></tr>
<tr><td colspan="3">Relationships:

Association: Science Observer

Include:

Extend:

Generalization:</td></tr>
<tr><td colspan="3">Normal Flow of Events:

1. Science Observer received the science plan that has been validated.

2. Select the science plan to convert into an observing program.

3. Input observing program data in accordance with the science plan.

4. Submit an observing program to the system.</td></tr>
<tr><td colspan="3">Subflows: 3. Input observing program data in accordance with the science plan

3.1 Input movement

3.2 Input lens

3.3 Input filters

3.4 Input focus</td></tr>
</table>

3.5 Input light detector 3.6 Input special equipment
Alternate/Exceptional Flow: The system has detected that the observing program data has been entered incompletely or incorrectly - In the case that all fields are not filled in, Science Observer will not be able to submit observing programs to the system. - In the case that the information is incorrect, Unable to create a science plan.

Use Case Name: Validate an observing program	ID: 02	Importance Level: High
Primary Actor: Telescope Operator		Use Case Type: Detail , Essential

Stakeholders and Interests:

Science Observer - Submit an observing program to the system.

Telescope Operator - Validate an observing program.

Brief Description: Telescope Operator verifies the observing program from Science observer is currently and available.

Trigger: When the observing program is unavailable.

Type: External

Relationships:

Association: Telescope Operator, Science observer

Include:

Extend:

Generalization:

Normal Flow of Events:

1. Science observer submits an observing program to the system.
2. Telescope Operator retrieves the observing program for inspection.
3. Verify the observing program is available.
4. Submit observing programs back to the system.

Subflows:

Telescope Operator verifies and assesses that observing program is available.

1. Telescope operator verifies that the requirements and functions of the observer program are complete and available.
2. Telescope operator verifies and evaluates the operation of programs in the system.

Alternate/Exceptional Flow:

If the observing program fails, Telescope operator submits the observing program to the system back to the science observer.

Use Case Name: Collect astronomical data	ID: 03	Importance Level: High
Primary Actor: Science Observer		Use Case Type: Detail , Essential
Stakeholders and Interests: Science Observer - Collect astronomical data		
Brief Description: Science Observer can collect astronomical data		
Trigger: When the approved plan has been executed Type: External		
Relationships: Association: Science Observer Include: Extend: Generalization:		
Normal Flow of Events: 1. Validate the integrity of collected data 2. Collect astronomical data		
Subflows:		
Alternate/Exceptional Flow:		

Use Case Name: Create a science plan	ID: 04	Importance Level: High
Primary Actor: Astronomer		Use Case Type: Detail , Essential

Stakeholders and Interests:

Astronomer - Create a science plan

Brief Description: This use case describers how to create a science plan

Trigger: When Astronomers input information to create a science plan, the system will check if there are duplicate science plans or not (checked by science observer).

Type: External

Relationships:

Association: Astronomer

Include:

Extend:

Generalization:

Normal Flow of Events:

1. Input information to create a science plan.
2. Click send in the system and wait for the science observer review.
3. The system will show what needs to be fixed.
4. When the science plan is correct, The system will display the message “Successful”.

Subflows:

1. Input name creator of science plan
2. Input submitter
3. Input funding
4. Input objective
5. Input stars system
6. Input schedule (date, time)
7. Input telescope location
8. Input data processing requirements
    - File type
    - File quality

- Image processing (B&W, color, contrast, brightness, saturation)
Alternate/Exceptional Flow: When the science plan is incorrect or duplicate, Science Observer will return it. And please do the following: <u>Incorrect case:</u> 1. Look at the science plan that was returned. Science Observer I will be the one who will tell you exactly where there is a problem. 2. Solve what science observers have said. <u>Duplicate case:</u> 1. Science observers will be the ones to say where it is duplicated and in which science plan. 2. Edit and resubmit the unique science plan.

Use Case Name: Validate the device and configuration	ID: 05	Importance Level: High
Primary Actor: Supporter		Use Case Type: Detail, Essential
Stakeholders and Interests: Visitor - want to install special device to Gemini Supporter - validate the device or configurations and install configurations		
Brief Description: Validate device and configurations for the Operation staff		
Trigger: When Visitor purpose to install a special device to Gemini Type: External		
Relationships: Association: Supporter Include: Extend: Generalization:		
Normal Flow of Events: 1. Receive install request from visitor 2. Validate the device and configurations 3. Install new configurations 4. Pass the device to Operation staff		
Subflows:		
Alternate/Exceptional Flow: - If the device’s failed on validate, Supporter send failed report to visitor - If the device’s pass on validate, Supporter send passed report to visitor		

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