Chapter 70

Realtime Commanding

For an explanation of the colored text in this Limited Access Parameter version, see Section 1.2, "Special Note to Limited Access Parameter Version Users". Note that this entire chapter is Limited Access.
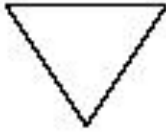
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70.1 Introduction

The Realtime Commanding template is to be used for Realtime commanding of JWST in support of critical activities which include station keeping and flight software updates. These activities must occur during the command uplink periods of Deep Space Network (DSN) contacts. No other activities are allowed during this time period unless coordinated beforehand through the Realtime Commanding template. An individual Realtime visit first executes slews and guide star acquisitions and then any preparation tasks which can take place prior to the start of the DSN contact. The Realtime commanding period starts after the scheduled start time of the DSN commanding uplink window. Optional cleanup tasks can also be executed if required. The parameters described in this section are used to specify Realtime Commanding observations. The Realtime template **[RTC0001]** consists of the following parameters:

Field	Details	Values	Notes
Target Name **[RTC0002]**	select a Target Name	external target or NONE (default) **[RTC0003]**	
Aperture	select an Aperture	TBD	
Realtime Duration **[RTC0004]**	select duration of Realtime commanding	Integer seconds **[RTC0005]**	
Initial Setup Duration **[RTC0006]**	select duration of Realtime preparation tasks	Integer seconds **[RTC0007]**	
Cleanup Duration **[RTC0008]**	select duration of post Realtime tasks	Integer seconds **[RTC0009]**	
Handoff Window Duration **[RTC0010]**	select duration of handoff window duration	Integer seconds **[RTC0011]**	

Note that ALL parameters listed below, except for the Handoff Duration Window, are required as part of your Phase I submission.

70.2 Realtime Commanding

The Special Requirement parameters **NO PARALLEL [RTC0012]**, **REALTIME [RTC0013]**, and **REQUIRED [RTC0014]** are implied for this template. Commanding requests should be addressed with the **SPECIAL COMMANDING** special requirement. The JWST guiding option should be requested through the **PCS MODE** Special Requirement; **PCS MODE** will be automatically set to **NONE** if the observation does not specify an external target **[RTC0015]**. See Special Requirements defined in Chapter 7.

The following parameters are used to define Realtime Commanding observations.

70.2.1   Target Name

Select a Target Name (see Section 5.4) if the observation is to be a "pointed internal" **[RTC0016]**, or select **NONE [RTC0017]** (see Section 5.5.2) if the observation is to inherit the attitude from the previously executed visit.

Note for developer: Make NONE the default for Target Name **[RTC0018]**.

70.2.2   Aperture

Select an Aperture if a Target Name was selected. Any legal value in the SIAF is allowed.

Note for developer: This is an expert user, so allowing any SIAF aperture should be fine, with no need to massage the name. Or we could come up with shorthands for the expected apertures, such as the Imager, MRS, NirCam A and B, etc.

70.2.3   Realtime Duration [RTDURATION]

The Realtime commanding duration is supplied in positive integer seconds and defines the maximum amount of time needed to complete the Realtime commanding **[RTC0019]**. This duration must fall within a DSN uplink commanding window **[RTC0020]**.

70.2.4   Initial Setup Duration [INITDURATION]

Amount of time required to complete any initial setup activities in positive integer seconds **[RTC0021]**.

70.2.5   Cleanup Duration [CLEANDURATION]

Amount of time required to complete any cleanup activities in positive integer seconds **[RTC0022]**.

70.2.6   Handoff Window Duration [RTHANDOFF]

The handoff window duration defines the time in positive integer seconds during which the S&OC FOT must acknowledge taking observatory control **[RTC0023]**. Failure to respond within this window results in the Realtime observation being skipped after any cleanup activities are completed. This parameter is optional **[RTC0024]** and will default to thirty minutes by OSS scripts if not specified.