

## FORMAT FOR THE INSTRUMENTER INPUT TO THE ACTIVITY PLAN (IAP)

The IAP will be in the keyword format only. (Fixed format is no longer used)

Note that the keywords as listed below can be specified in any order. However, they must be used as described, and they are case sensitive.

### SCIPLAN

The SCIPLAN entry specifies the first level of science planning information, i.e. the overall plan as developed during the weekly and daily science planning meetings. The xyz field which follows SCIPLAN\_ should be descriptive of a specific science plan. It can be up to 10 alphanumeric characters long, no blanks embedded, but underscores are allowed. This field will be used to specify the occurrence of Joint Operations Procedures (JOP). For example, SCIPLAN\_JOP\_3. All fields described as "strings" contain a maximum of 50 alphanumeric characters, blanks, commas and underscores being allowed.

#### SCIPLAN\_xyz

STARTIME=	Start time of the special activity
ENDTIME=	End time of the special activity
INSTRUME=	Instrument or group implementing the planned activity
SCI_OBJ=	Scientific objective, e.g. "Bright Point Studies". (1)
SCI_SPEC=	(Optional). More specific scientific objective, e.g. "Density Profile". (1)
OBJECT=	Generic name for the object planned to be observed, from a limited list of possible objects, e.g., "Bright point". (1)
OBJ_ID=	(Optional). Unique identifier for the object to be observed. Up to 6 alphanumeric characters, no blank embedded, e.g. BP
NOTES=	(Optional). May include references to specific studies or rasters to be run. (1) (2)
PROG_ID=	(Optional). An ID number specifying that this observation is part of a continuing series. Up to 6 numeric characters.
CMP_NO=	(Optional). ID number of the coordinated observing program this observation supports. Up to 6 numeric characters.
DISTURB=	(Optional). Description of any possible disturbances. (1).
DATE_MOD=	(Optional). Last date modified.

#### Notes :

- (1) String.
- (2) This field can be repeated if necessary.

### PROGRAM

The PROGRAM entry is used to describe the specific programs that the instruments would run to satisfy the scientific objectives of the corresponding SCIPLAN activity: for each SCIPLAN entry, there will be a sequence of PROGRAM entries that represent the details of the SCIPLAN. The \_xyz which follows PROGRAM is the name of the activity that the instrumenter provides. It can be up to 10 alphanumeric characters long, with no embedded blanks, but underscores are allowed.

#### PROGRAM\_xyz

STARTIME=	Start time of the special activity
ENDTIME=	End time of the special activity
INSTRUME=	Instrument or group implementing the planned activity
OBS_PROG=	The observing program that will be run
SCI_OBJ=	Scientific objective, e.g. "Bright Point Studies". (1)
SCI_SPEC=	(Optional). More specific scientific objective, e.g. "Density Profile". (1)
OBJECT=	Generic name for the object planned to be observed, from list of possible objects. (1)
OBJ_ID=	(Optional). Unique identifier for the object to be observed. Up to 6 characters.
XCEN=	Center of the instrument field-of-view along the solar X-axis. (2) (3)
YCEN=	Center of the instrument field-of-view along the solar Y-axis. (2) (3)
ANGLE=	Rotation angle of vertical axis of instrument field-of-view relative to solar north. (2) (3)

IXWIDTH= Maximum width of the instrument field-of-view in the instrument X axis, i.e. the direction perpendicular to the vertical axis as used in keyword ANGLE. (2) (3)  
 IYWIDTH= Maximum width of the instrument field-of-view in the instrument Y axis, i.e. the direction perpendicular to the vertical axis as used in keyword ANGLE. (2) (3)  
 PROG\_ID= (Optional). ID number specifying that this observation is part of a continuing series  
 CMP\_NO= (Optional). ID number of the coordinated observing program that this observation supports  
 DISTURB= (Optional). Description of any possible disturbances  
 JITTER\_LIMIT= (Optional). Maximum amount of jitter allowable for this program and this instrument (in 1/10 arc-seconds)

**Notes :**

- (1) String. The list of objects is provided below.
- (2) This field can be repeated if necessary. The value can be an array of n elements: elements separated by a comma, no blanks embedded.
- (3) Units for coordinates are arc-seconds from Sun center and degrees from Solar North for angles.

**ACTIVITY**

The ACTIVITY entry is used to specify predefined activities that the ECS planning system knows about, that is that have been entered in the knowledge base. These activities typically have constraints associated with them that are checked by the scheduling system. The xyz which follows ACTIVITY is the name of the predefined activity.

ACTIVITY\_xyz (1)

STARTIME= Start time of the special activity  
 ENDTIME= End time of the special activity  
 INSTRUME= Instrument or group implementing the planned activity  
 AMOUNT= (Optional). Should be specified for certain activities such as jitter (1)

**Notes :**

- (1) Example for jitter: specify the amount of jitter generated by this activity estimated in 1/10 arc-seconds.

**INST\_IIE\_MASTER and INST\_IIE\_RECEIVER**

These entries are used to plan the role individual instruments in the Inter-Instrument Exchange (IIE). They are first included in the IAP for planning and coordination. The INST\_IIE\_MASTER entry is used by a given instrument to indicate that this instrument will be master for the specified period of time. The INST\_IIE\_RECEIVER entry is used to specify that an instrument will be receiver for the specified period of time.

INST\_IIE\_MASTER

MSTR\_TYPE= Type of flag  
 INSTRUME= Name of the master instrument  
 MSTR\_START= The start time for the instrument being the master  
 MSTR\_STOP= The stop time for the instrument being the master  
 STATUS= Acceptance status (1)

INST\_IIE\_RECEIVER

INSTRUME= Name of a receiving instrument  
 RCVR\_START= The start time for the instrument being a receiver  
 RCVR\_STOP= The stop time for the instrument being a receiver  
 STATUS= Acceptance status (1)

**Notes :**

- (1) This keyword will only be present in the EAP. The possible values are REQUESTED, CONFIRMED, DENIED. If present in the IAP, it will be ignored by the ECS.

**INST\_NRT\_SESSION**

The INST\_NRT\_SESSION entry is used to specify that an instrumenter is going to be doing near-real-time commanding during a specified period of time.

#### INST\_NRT\_SESSION

STARTIME= Start time of the requested near-real-time commanding activity  
ENDTIME= End time of the requested near-real-time commanding activity  
INSTRUME= Instrument which will have near-real-time privileges  
IWS\_ID= Identification of the IWS from which the NRT commanding activity will be performed  
CMD\_RATE= Expected average number of commands per minute between start time and end time  
STATUS= Acceptance status for this activity (1)

#### Notes :

(1) This keyword will only be present in the EAP. The possible values are REQUESTED, CONFIRMED, DENIED. If present in the IAP, it will be ignored by the ECS.

#### INST\_NRT\_RESERVED

The INST\_NRT\_RESERVED entry is used to request a reserved time slot for some special near-real-time commanding activities. This time is reserved for that instrument and no other instrument can request time during that period.

#### INST\_NRT\_RESERVED

STARTIME= Start time of the reserved time NRT commanding activity  
ENDTIME= End time of the reserved time NRT commanding activity  
INSTRUME= Instrument which will have reserved time  
CMD\_RATE= Expected average number of OBDH block commands per minute between the start time and end time  
STATUS= Acceptance status for this activity (1)

#### Notes :

(1) This keyword will only be present in the EAP. The possible values are REQUESTED, CONFIRMED, DENIED. If present in the IAP, it will be ignored by the ECS.

#### INST\_DELAYED\_CMD

The INST\_DELAYED\_CMD entry is used to specify a time window during which a group of delayed commands must be uplinked.

#### INST\_DELAYED\_CMD

EARLIEST= Earliest uplink time  
LATEST= Latest uplink time  
INSTRUME= Instrument which will performed the delayed commanding  
NUM\_CMDS= Number of obdh block commands to be uplinked

#### INST\_TSTOL\_EXECUTION

The INST\_TSTOL\_EXECUTION entry is used to specify a time window during which FOT will be required to execute a given TSTOL procedure.

#### INST\_TSTOL\_EXECUTION

PROC\_NAME Name of procedure to be executed by the FOT  
EARLIEST= Earliest execution time  
LATEST= Latest execution time  
INSTRUME= Instrument to which the procedure applies  
DURATION= Approximate duration for execution of the procedure (minutes)

## FORMAT FOR THE ECS ACTIVITY PLAN (EAP)

The EAP will be available in two formats:

- 1) the keyword format, providing more flexibility
- 2) the fixed format, providing more readability

In addition to the keywords found in the IAP, the following keywords will be used in the EAP.

### Keywords originating from CMS/FOT (Still to be confirmed)

#### DSN\_Contact\_xyz

The DSN\_Contact\_xyz entry provides information on a given DSN contact. The \_xyz field represents the ground station name, for example, \_CAN or \_MAD.

```
DSN_Contact_xyz
  STARTIME=      Start time of contact for this station
  ENDTIME=      End time of contact for this station
```

#### SVM\_Reserved

The SVM\_Reserved entry is used to indicate time periods that are reserved by the FOT to perform activities exclusively related to the service module. During these time periods, all instrument-related activities are excluded: near-real-time commanding, uplink of delayed commands and execution of TSTOL procedures for instrument operations.

```
SVM_Reserved
  STARTIME=      Start time
  ENDTIME=      End time
```

#### Payload\_Reserved

The Payload\_Reserved entry is used to indicate time periods that are reserved by the FOT but during which some payload operations activities can be performed. These include uplink of instrument delayed commands and execution of TSTOL procedures for instrument operations

```
Payload_Reserved
  STARTIME=      Start time
  ENDTIME=      End time
```

#### Throughput\_RCR

The Throughput\_RCR entry is used to specify time periods during which the throughput channel will be opened, the instrument teams will be allowed to command in near-real-time and send RCRs.

```
Throughput_RCR
  STARTIME=      Start time of throughput mode with RCR allowed
  ENDTIME=      End time of throughput mode with RCR allowed
```

#### Throughput\_NoRCR

The Throughput\_NoRCR entry is used to specify time periods during which the throughput channel will be opened, the instrument teams will be allowed to command in near-real-time and but RCRs will not be permitted.

```
Throughput_NoRCR
  STARTIME=      Start time of throughput mode with RCR not allowed
  ENDTIME=      End time of throughput mode with RCR not allowed
```

### **Spacecraft\_Manever**

The Spacecraft\_Manever entry is provided by the FOT for informational purpose. This will allow the instrument teams to be aware of the occurrence of spacecraft maneuvers that may affect the operations of the instruments.

Spacecraft\_Manever  
STARTIME= Start time of maneuver  
ENDTIME= End time of maneuver  
NOTES= Description of maneuver

### **Clock\_Adjust**

The Clock\_Adjust entry is provided by the FOT for informational purpose. It will allow the instrument teams to be aware of upcoming OBТ clock adjusts.

Clock\_Adjust  
STARTIME= Start time/occurrence of clock adjust  
TYPE= Description of adjust/reset

### **TLM\_Tape\_Dump**

The TLM\_Tape\_Dump entry is provided by the FOT for informational purpose. It will allow the instrument teams to be aware of planned times for tape recorder dumps.

TLM\_Tape\_Dump  
STARTIME= Start time  
ENDTIME= End time

### **TLM\_MDI\_M**

The TLM\_MDI\_M entry is provided by the FOT for informational purpose. It will allow the instrument teams to be aware of planned times for MDI-M downlink.

TLM\_MDI\_M  
STARTIME= Start time  
ENDTIME= End time

### **TLM\_MDI\_H**

The TLM\_MDI\_H entry is provided by the FOT for informational purpose. It will allow the instrument teams to be aware of planned times for MDI-H downlink.

TLM\_MDI\_H  
STARTIME= Start time  
ENDTIME= End time

### **TLM\_HR\_Idle**

The TLM\_HR\_Idle entry is provided by the FOT for informational purpose. It will allow the instrument teams to be aware of planned times for idle high rate telemetry.

TLM\_MDI\_Idle  
STARTIME= Start time  
ENDTIME= End time

### **TLM\_Mode**

The TLM\_Mode entry is provided by the FOT for informational purpose. It will allow the instrument teams to be aware of planned times for switching telemetry mode to low rate, medium rate, high rate or idle. The telemetry mode remains set to the current value until a new TLM\_Mode entry changes it.

TLM\_Mode  
 MODE= LR, MR HR or IDLE  
 STARTIME= The start time for this mode.

**TLM\_Submode**

There are four TLM\_Submode keywords that defines the start time for a given telemetry submode. This submode will remain in effect until it is modified by another TLM\_Submode entry. The TLM-Sumode entries are input by the ECS operator once the weekly plan has been finalized. Since the FOT will be in attendance at the weekly and daily meetings, modifications to these entries by the FOT are not expected. There are four different telemetry submodes (1 to 4) applying to the medium and high rate telemtry modes.

TLM\_Submode\_1  
 STARTIME= The start of mode 1

TLM\_Submode\_2  
 STARTIME= The start of mode 2

TLM\_Submode\_3  
 STARTIME= The start of mode 3

TLM\_Submode\_4  
 STARTIME= The start of mode 4.

**Other\_Obs\_xyz**

The Other\_Obs\_xyz entry is used to describe other science programs and events which are of interest to the SOHO team. These activities will be input by the ECS operator interactively from the timeline editor. The possible keywords listed for this entry are similar to the SCIPLAN entry, and they will most likely not apply in many cases. The xyz field is descriptive of a specific event: it can be up to 10 alphanumeric characters, with no blanks embedded, but possible underscores. The Other\_Obs\_xyz entries may not be included in the IAP.

Other\_Obs\_xyz  
 STARTIME= Start time of the support activity  
 ENDTIME= End time of the support activity  
 TELESCOP= Spacecraft or observatory implementing the activity  
 SCI\_OBJ= Scientific objective (1)  
 SCI\_SPEC= (Optional). More specific scientific objective (1)  
 OBJECT= (Optional). Name of the object planned to be observed  
 OBJ\_ID= (Optional). Unique identifier for the object to be observed. Up to 6 alphanumeric characters, no blank embedded  
 NOTES= (Optional). May include references to specific studies or rasters to be run. (1)  
 PROG\_ID= (Optional). An ID number specifying that this observation is part of a continuing series. Up to 6 numeric characters.  
 CMP\_NO= (Optional). ID number of the coordinated observing program this observation supports. Up to 6 numeric characters.  
 DISTURB= (Optional). Description of any possible disturbances. (1).  
 DATE\_MOD= (Optional). Last date modified.

**Notes :** (1) Strings.

## **LIST of Possible Objects**

ARC	arcade
AFS	arch filament system
ANE	anemone
AR	active region
BP	bright point
CR	coronal rain
CH	coronal hole
COM	comet
COR	corona
CHR	chromosphere
CS	coronal streamer
CT	coronal transient
CUS	cusplike
DB	disparition brusque
DC	disk center
DFL	disappearing filament
DFX	disappearing flux
DF	downflow
EFL	emerging flux
EPR	eruptive prominence
EFI	erupting filament
EVF	overshadowed flow
FAC	faculae
FC	filament channel
FLC	flux cancellation
FLG	filigree
FIL	filament
FLR	flare
FP	footpoint
FS	full sun
FL	flow
GR	granulation
HR	hedge row
JET	jet
LB	loop brightening
LE	loop evacuation
LMB	solar limb
LO	loop
CME	coronal mass ejection
MS	magnetic shear
MT	mercury transition
MW	moreton wave
NET	network
NL	neutral line
PC	polar crown
PCH	polar coronal hole
PEN	sunspot penumbra
PFL	postflare loops
PHO	photosphere
PLG	plage
POR	pore
PP	polar plume
PR	prominence
PLT	planet
QS	quiet sun
RIB	two-ribbon flare
SPR	spray

SG	supergranulation
SPI	spicule
SR	surge
SS	sunspot
ST	star
SW	solar wind
SYN	synoptic observation
TR	transition region
UF	upflow
UMB	sunspot umbra
VT	Venus transition
WAV	wave
WLF	white light flare