# The Current Status of CP/GP/ToO Science Data Products from Chinese Side

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# Status: SDP of CP/GP/ToO from Chinese Side

**Current status:** 

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- Finished all cards of SDPs in group 1, 2, 3 of Core Program in for VT, GWAC
- Finished all cards of SDPs in group 1, 2, 3 of Core Program in for C-GFT, and finish the homogeneity check for SDPs in group 1 between C-GFT and F-GFT
- Finished the 1st. version of SDP cards in group 1 for GRM. Still miss the SDP in group 2, 3
- **Defined new SDPs for ToOMM**
- Made a draft of template of 'tex' file for cards of CP/GP
- Need to work on cards of SDPs for GP/ToO

# 1. Status: SDP of CP



# 2. New SDPs for ToOMM

Product	Distription
MXT-ToOMM-candiate	List of candidates of counterparts detected by MXT. Source information should be given in the product.
VT-ToOMM-candiate	List of candidates of counterparts detected by VT. Source information should be given in the product.
CGFT-ToOMM-candiate	List of candidates of counterparts detected by CGFT. Source information should be given in the product.
FGFT-ToOMM-candiate	List of candidates of counterparts detected by FGFT. Source information should be given in the product.
GWAC-ToOMM-candiate	List of candidates of counterparts detected by GWAC. Source information should be given in the product.
MXT-ToOMM-lim	List of detection limit of MXT for each observation.
VT-ToOMM-lim	List of limiting magnitudes of VT for each observation.
CGFT-ToOMM-lim	List of limiting magnitudes of CGFTT for each observation.
FGFT-ToOMM-lim	List of limiting magnitudes of FGFT for each observation.
GWAC-ToOMM-lim	List of limiting magnitudes of GWAC for each observation.

# 3. Template of 'tex' file for CP/GP/ToO

## The format of cards for CP and GP are

## currently different:

## **CP: TT\_ECL**

TT_E	CL				Trigger time – ECLAIRs VHF Alert $(T_0)$						
	Group:	Produ	cts generate	d in nea	r-real time fr	om VHF data	or automatic link from	n ground.			
	Description:	The T	rigger Time	(T0) is	the time in U	JTC when Ecl	airs has produced the f	first alert of a new	VHF alert sequence.		
	Work package:	num	acrony	m	description				-		
	Development:	CEA (	S. Schanne)								
	Name				Status	Format	Expected values/u	inits	Origin		
5	Packet Time	t Time			М	32 bits	integer number of seco	onds	First ECLAIRs VHF Alert Message		
L I	Comments:					1					
<b>É</b>	Packet time is the ir	nteger nu	mber of second	ls from S	VOM epoch - U	UTC time (TBD)					
	Name				Status	Format	Expected values/u	inits			
5	T0				М	TBD (32 bits?	) UTC				
OUTF	-The time to is the time at which ECHARIS COTS has detected and localized (above the alert timeshold) for the first time the source for which a new alert sequence is generated. -This it is not the time of the burst, this is the time when the burst has been detected and localized for the first time and the alert message generated (all processing delays included). -Note e.g. that for a detection on a time-scale of 2s, adding the processing time to perform the imaging and source localization, the T0 can be >6s after the beginning of the burst. -Since the T0 is unique for any new alert sequence, since it is the time of the first alert packet in the sequence, the T0 is the reference time for the alert sequence, similar to the Obs_ID which contains a unique ID for the alert sequence.										
МЕТНОВ	<ul> <li>Search for the first VHF alert packet of the new alert sequence. An alert sequence is identified by the Observation ID in the VHF alert packet. The first alert of the sequence is identified by the Alert_MsgCount=0.</li> <li>T0 is the Packet time of this VHF alert packet.</li> <li>If the first VHF alert packet is missing, the T0 can also be found in the VHF alert descriptor.</li> <li>Comments (FDaigne): the possibility to get T0 from the ECLAIRs Alert Descriptor Message must be explained: currently, it is written in MC Charmeau excel file that this Message has a copy of the Alert Message corresponding to the first slew request, no to the trigger. If it is confirmed that T0 can be deduced from the Alert Descriptor, the corresponding input must be included above, with status M/O for the Alert Message and O/M for the Alert descriptor.</li> </ul>										
DELAY	Near real-time										
Z	Alerts:		1/1a X	1b	2a	2b	2c	2d 3			
Ĕ I	VOEvents/Keyw	ords:	TBD						· · ·		
Ľ	WEB access:	Yes	Format:	TT_I	ECL						
R	Catalog:		Yes								
DIST	Comments:	Comments:									

#### 9.1. EC-GTI

## GP: EC\_GTI

#### Header

Name			System	Group	Description	Format	Develop
				Level			
	EC-GTI	Eclairs Good Time Intervals	Eclairs	L1 Prim	Good Time Intervals for ECLAIRs data analysis	FITS Table	APC

#### **Content (Output) Extensions**

Extension Group		Status	Format Dimensions		Origin	
GTI-1	Good Time Intervals	M	Binary Table	N. of Intervals x 2	EC_DPCO	

#### Content table line

Name	Name		Format	Units / Expected Value	Origin
TSTART	Start Time of the GTI	M	R8	Universal Time in MJD	
TSTOP	Stop Time of the GTI	Μ	R8	Universal Time in MJD	

#### Origin

Process	Pipeline	Component	Module	Function
GP SA	Eclairs Pipeline	EC_DPCO		
GP QLA	Eclairs Pipeline	EC_DPCO		

#### Input SDP

Name	Description	Origin	Notes
ATTITUDE	Attitude	PP	
ORBIT	Orbit	PP	
SAT-HK	Satellite HK	PP	
EC-HK	ECLAIRs HK	PP	
EC-RAW-EV	ECLAIRS Raw Events	PP	
AU-EC-DPIX	ECLAIRS DPIX parameters	EIC	

#### Comments / Description:

Good Time Intervals for ECLAIRs.

#### Method of Generation

Through the monitoring of different parameters, select the times intervals of good environment conditions and good functioning of the ECLAIRs instrument. Possibly a second set of GTI (GTI 2), which is a restriction of the first GTI, will be defined at level L2 processing during selection and binning of data (TBD).

# 3. Template of 'tex' file for CP/GP/ToO

## New template for both CP and GP (Need to discuss with F.D and A.G)

## CP: QPO\_ECL

## **GP: EC\_OBS\_SOU**

QP	O_ECL			Quick	position – E	ECLAIRs		EC_C	DBS_SOU		ECLAI	Rs Observ	ved Source Parameters	
	Group	p:	L1	1					Group:	L2 Primary	<u> </u>			
(	Descri	ription:	Quick position using	g ECLAIR	s data, comp	puted onboard		(	Description:	Derived Parameters of the Observed Sources				
	Work	package:	num acronym	descript	ion	·			Work package:	num acronym	descript	ion		
i I	Forma	at:							Format:	FITS Table				
	Devel	lopment:	CEA (F. Daigne, up	odate S. So	channe)				Development:	APC (A. Goldwurm)				
	Name	e		Status	Format	Expected values/units	Origin		Name		Status	Format	Expected values/units	Origin
ĺ	Alert_S	SkyYfit	source coordinate $\boldsymbol{Y}$	0	float 16 bits	Coordinate in ECLAIRS frame $(Y : \text{sky pixel})$	VHF alert ECLAIRs		EC UBC IMA	Uniformity, background and earth corrected detector image	M			EC BUBE
	Alert_S	SkyZfit	source coordinate ${\cal Z}$	0	float 16 bits	Coordinate in ECLAIRS frame $(Z : sky pixel)$	VHF alert ECLAIRs		AU EC CATA	Catalogue of sources for ECLAIRs	M			ECPI
⊢	Sat_Po	osition	satellite position	0	72 bits	Satellite position $(X, Y, Z \text{ in J2000 :m })$	VHF alert ECLAIRs	5	ATTITUDE	Attitude				PP
PU	Sat_At	ttitude	satellite attitude	0	72 bits	Satellite attitude (3 angles : degrees ?)	VHF alert ECLAIRs	lert ECLAIRs		ECLAIBs instrument parameters	<u> </u>			EIC
Ξ	Alert_S	SrcLocAlpha	source coordinate $\alpha$	М	float 32 bits	Coordinate in J2000 (RA: $\alpha$ in degrees)	VHF alert ECLAIRs	=	Input science pr	roducts:				110
	Alert_S	SrcLocDelta	source coordinate $\delta$	М	float 32 bits	Coordinate in J2000 (DEC: $\delta$ in degrees)	VHF alert ECLAIRs		Name		Requir	ed outpu	t fields	Status
	Input	science proc	ducts:				1 - 2				licqui	eu outpu		Status
	Name	e		Requir	ed output f	fields	Status		Comments:					
	QCL_H	ECL		SNRi			М		Parameters derived from reconstruction and analysis of ECLAIRs images for each detected or				urce	
	Comm	Comments:				Name	from reconstruction and analysis of DOLLTING images for each	Status	Format	Expected values/units	Origin			
	Name	e		Status	Format	Expected values/units	Origin		SOURCE ID	Source ID	M	ASCII		- Chighi
	RA		Right ascension	M	float	angle in degrees or in hh mm ss.sss in J1950, J2000 and current	(0 to 360°		Y	Position in V	M	R4	Y Pixel position	
	DEC	LONG	Declination	M	float	angle in degrees or "," in J1950, J2000 and current (-90 to +9			EBBOR V	From in Y at 90% c l	M	R4	Pixel	
	GAL_I	LONG	Galactic longitude	M	float	angle in degrees (0 to 360°)		F	7	Position in 7	M	R/	7 Pixel position	
	GAL_I	LAT	Galactic latitude	M	float	angle in degrees $(-90 \text{ to } + 90^\circ)$		PL	ERBOR 7	From in Z at 00% cl	M	R4	Pivol	
5	ECO_I	LONG	Ecliptic longitude	M	float	angle in degrees (0 to 360°)		5	BA	Birbt Acconsion	M	R8	Dogroos (0. 360.0000)	
L L	ECO_I	LAI	Ecliptic latitude	M	noat	angle in degrees $(-90 \text{ to } +90^\circ)$		ō	DEC	Declination	M	R8	Degrees (0. 0000 00 0000)	
	ERR	n	Radius of error circle	M	noat	angle in arc minutes (0 to !)			EPPOP PAD	Error Pading at 90% al	M	D4	AreMin	
	Proce	000	Pipolino	Compo	nont	Modulo Function			FLUX1	Ellor fadius at 90% c.i.	M	De	$Cta/a/am^2$ on price	
ł	11000	699	Tipenne	Compo	ment				FDDAT	Frux in the energy band 1	M	De	$Cts/s/cm^2$ on axis	
									ELUX9	Entroi of hux in the energy band 1	M	De	$Cts/s/cm^2$ on axis	
	Comm	nents:							FLUAZ	Flux in the energy band 2	M	no De	$Cts/s/cm^2$ on axis	
	We use	e the same conv	rention as Swift : coordi	inates are gi	iven in three sv	vetems			ERROR_FLUX2	Error of nux in the energy band 2	M	R8	Cts/s/cm <sup>-</sup> on axis	
	- equat	torial coordinat	tes: in three frames : J1	.950. J2000	and current, an	nd in two formats : RA, DEC in 0, or RA in hh mm ss.sss and DEC	C in ∘. '. ".		CLASS	Identified Source name	M	ASCII	Class as do	
	- galact	ctic coordinates		,	,			(	Origini	Adminical Source type		1 <del></del>	Chas code	
	- eclipt	– ecliptic coordinates						Drigin:	Dincline	Comp	mont	Madula Eurotian	_	
									CD Charles				Module Function	
									GP Standard Analy	VSIS EULAIKS	EC_IMA	G		
1									GP QLA	ECLAIKS	EC_IMA	IG		
	Íľ	mna	orted	tro	m (	<b>GP card</b>			comments:					
									-					

# 4. Requirements for auxiliary and ancillary data defined in SR4

### Auxiliary and Ancillary data

Name	Description	Content Name	Description
SVOM-PLA	observation work plan		
SVOM-OBP	observation parameters: ObsID, Type, TargetID.	Obs_ID	Observation ID
		Obs_type	observation type
		SOU_ID	ID of Target source
		ObitN	Orbit numbers
		TStart	observation start
		TStop	observation stop
SVOM-ATT	Attitude: attitude quaternions vs time		
SVOM-ORB	Orbit: satellite position and velocity vs time		
SVOM-HKP	Satellite house keeping		
ECL-GTI	ECLAIRS good time interval		
MXT-GTI	MXT good time interval		
GRM-GTI	GRM good time interval		
ECL-ATT	Attitude: ECLAIRS		
MXT-ATT	Attitude: MXT		
GRM-ATT	Attitude: GRM		
VT-ATT	Attitude: VT		
ECL-HKP	House keeping: ECLAIRS		
МХТ-НКР	House keeping: MXT		
GRM-HKP	House keeping: GRM		
<b>VT-НКР</b>	House keeping: VT		
ECL-PIX-LIF	Parameters describing pixel lifetime		
MXT-PIX-LIF	Parameters describing pixel lifetime		

More specific requirements need to be given for Satellite and Instruments house keeping data

# Next: Plans of Chinese Side (2019)

- · 2019Q2:
  - Finish all cards including GP/ToO (need to push for the GRM cards)
  - Finish the homogeneity check for group 1, 2. and for CP, GP/ToO (need to work with French side)
- 2019Q2-Q3: Finish the development of prototype of SDPs of GWAC and C-GFT.
- 2019Q3-Q4: Finish the development of prototype of SDPs or simulator of CP group 1 for VT.

## Thank you for your attention!