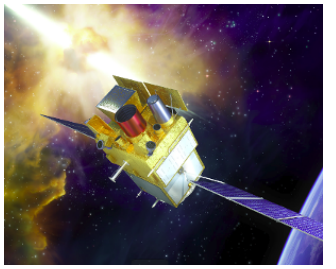
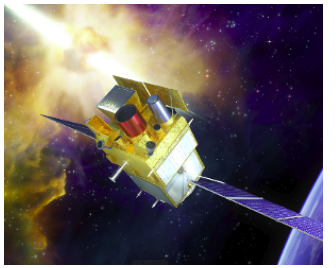


DC-0 ECLAIRs-GRM X-band & VHF pipelines

Maxime Bocquier & Claude Zurbach

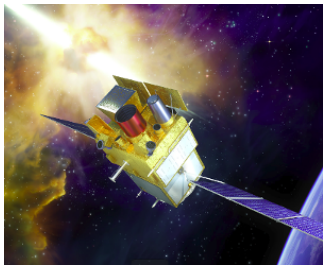
Point-clé Svom-Sol-Dev (IAP, 23 Janvier 2019)

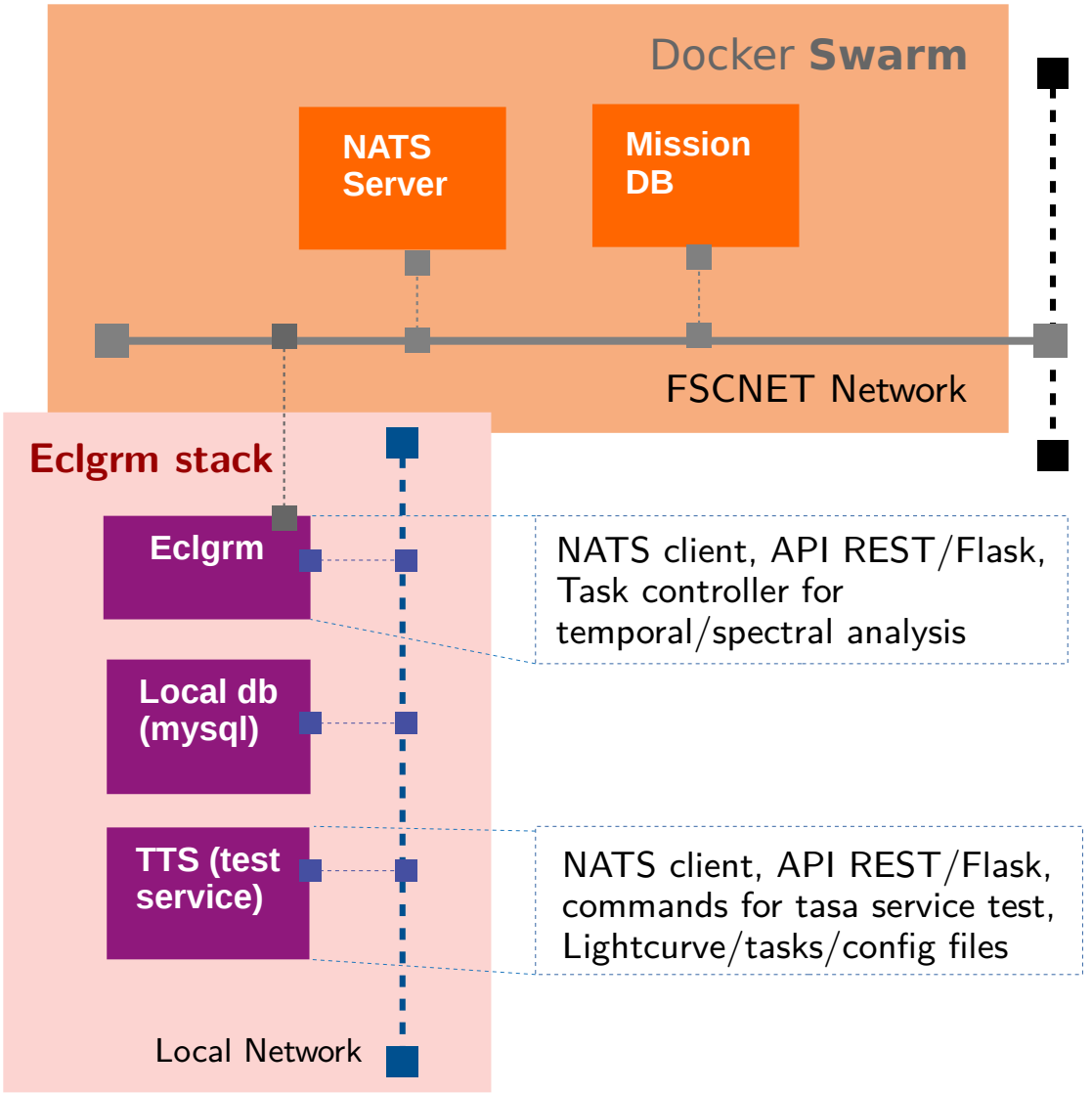
Summary



1) ECLAIRs/GRM X-band pipeline for DC-0: design, components
2) How to manage a process environment?
3) Test cases

ECLAIRs/GRM service: design and components





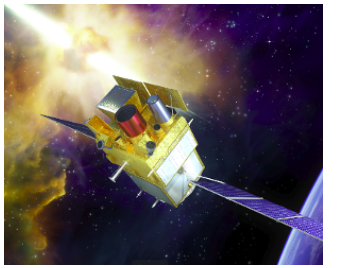
The **eclgrm** container manages services (web and NATS server, local tasks scheduler), and initializes and uses a **MySql DB** container for temporary local storage.

The **eclgrm** activates the temporal and spectral analyses as soon as X-band data are available on the DB (for DC-0, precomputed light curves), it produces a GRB T90 and energy spectra, and stores them locally. It sends messages on NATS Queue to alert services with tasks status and outputs*.

The **TTS** service is build to test the eclgrm service easily. HTTP commands allow to launch a test sequence with data alerts/retrieving and tasks. All useful data are included in the container.

(*) When a task is computed, **eclgrm** sends messages on NATS Queues with links to retrieve produced files. **TTS** gets and stores those files in its local file system.

Tasks / Tasks configuration file



To test and improve the service design, we decided to include basic scientific data treatments, and implemented a « **tasks controller** ».

Tasks are JSON formatted and until now sent to the *data.bandx* NATS Queue, or to */task* on tasa service REST API.

Tasks are computed as soon as data is available in local db.

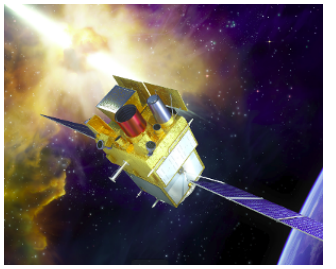
In the future, tasks will also be automatically created and executed upon data reception. We may want to keep both ways, for instance to reply (part of) the analysis.

The **task configuration file** is a draft corresponding to the weak constraints of the DC-0.

For DC-0, this file is only used to specify the spectral model (Band).

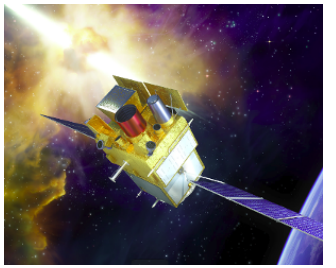
In the future, this file will list specific parameters to be passed to the temporal and spectral analysis algorithms (background files, Tmin, Tmax, etc). It will also be used to expose some parameters and to restart (part of) the analyses with a different configuration (e.g., by the Instrument Scientists)

Tests of the Eclgrm service in DC-0



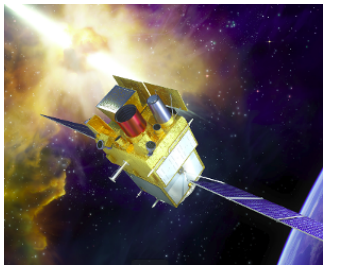
Test case*	Step	Status
FSC-2041	Service is ready	PASS
FSC-1585	Service avaibility	PASS
	Logging avaibility	PASS
	Workers avaibility	PASS
FSC-1588	Send input files/calibration data to service	PASS
	Send tasks to service	PASS
	Tasks computing	PASS
	Validating tasks computing	PASS
FSC-1589	Checking workers logs	PASS
FSC-1590	Checking start/stop of REST interface with smooth behaviour	PASS

(*) See Polarion for more details



Thank you!

Walking through service test



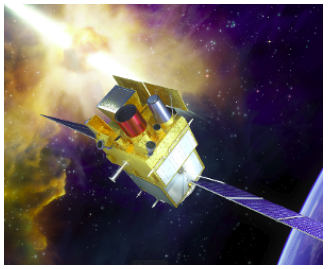
When the service is ready, it sends on NATS queue « activity.eclgrm » a *ServiceStatus* message :

{"descriptor": {"name": "IAP/LUPM-ECLGRM-ANALYSIS", "uri": "svom://sgs.iap-lupm.com", "instrument": "ECLAIR", "mode": "CoreProgram", "creation_date": "Friday 18 January 2019 10:31:22", "version": "0", "links": ["default"]}, "activity": null, "date": "Friday 18 January 2019 10:33:16", "info": "Service eclgrm is ready"}

See the demo :

- Launching test
- Service NATS ping
- Tasks status
- Service status

Towards DC-1 : 2019 first thoughs



- Interact with MDB
- Add science data for DC-1
  - Develop more elaborate analysis algorithms (TBD)
- Design the VHF container
- Use JSON message scheme more efficiently