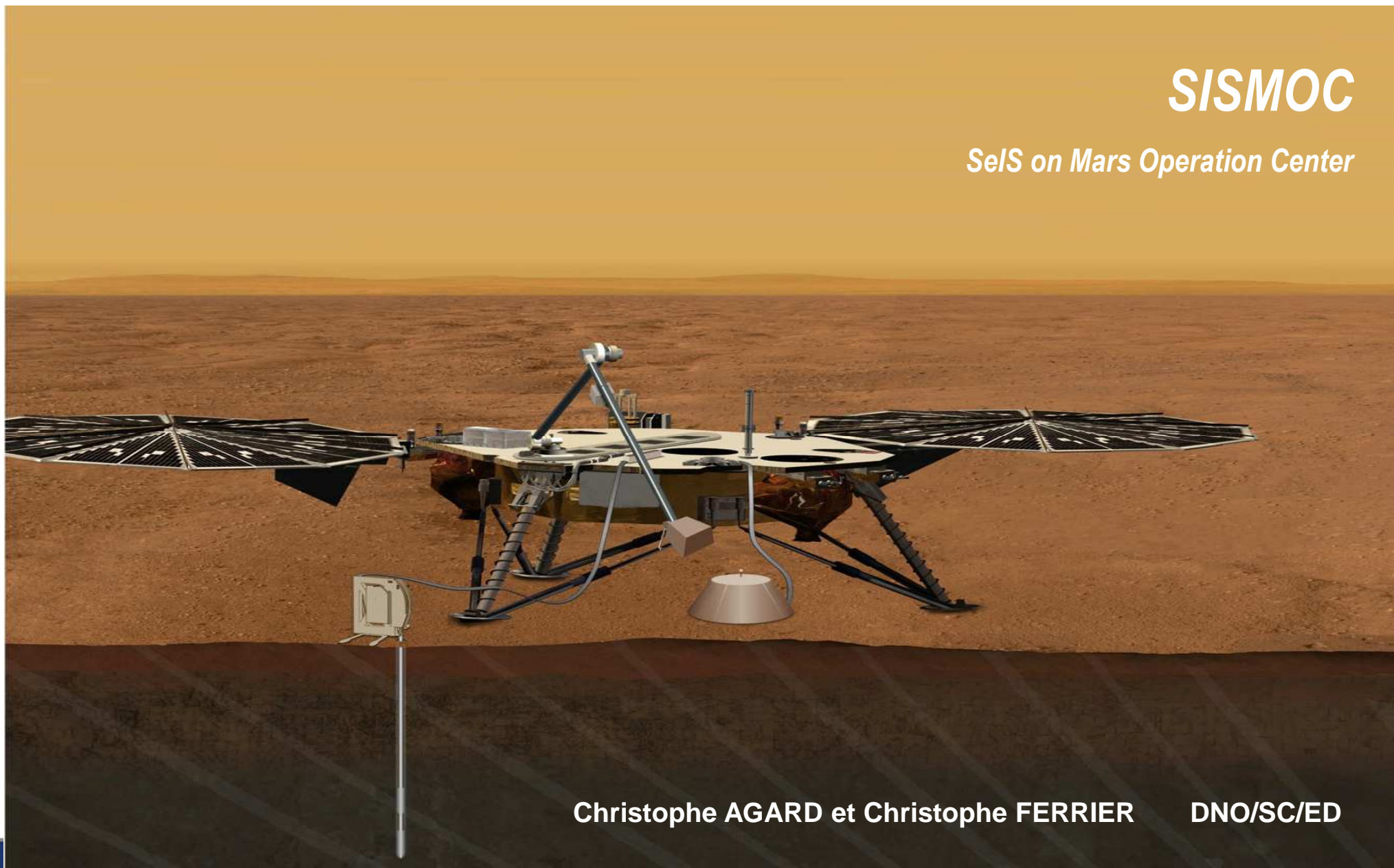




# SISMOC

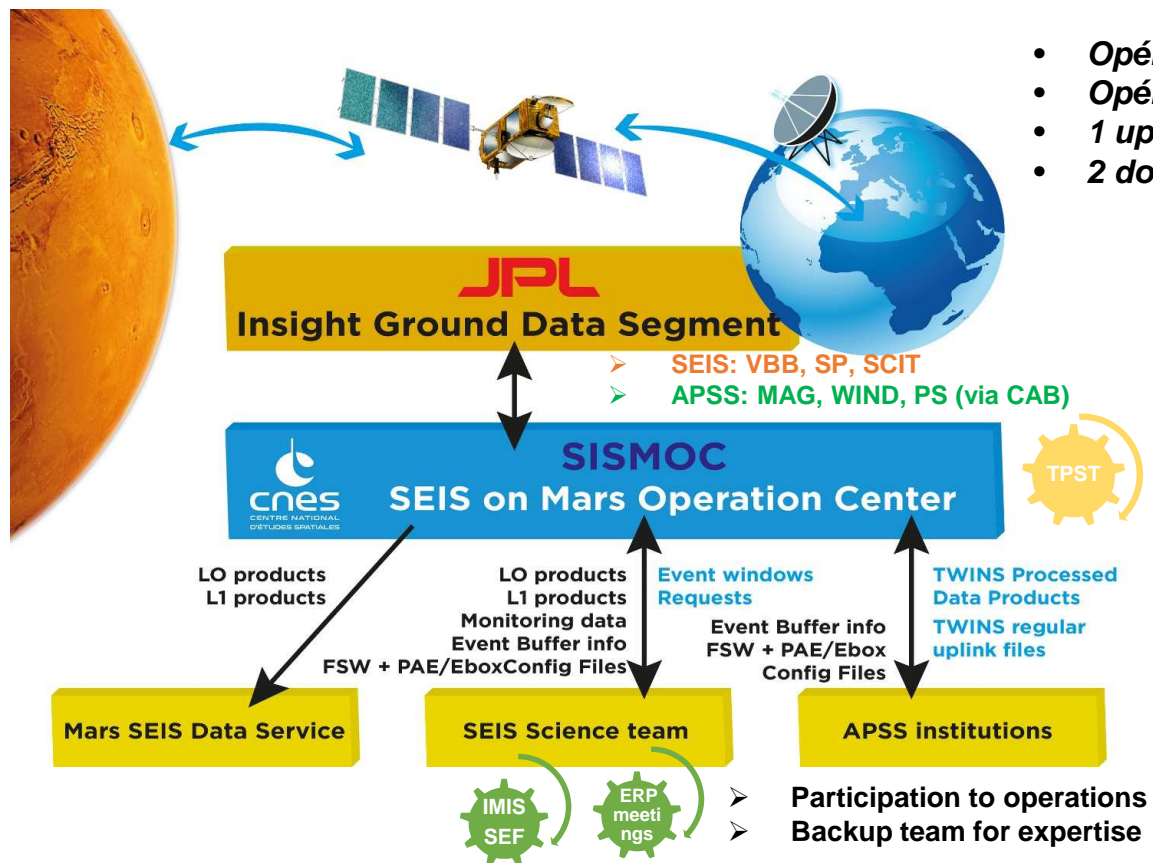
*Seis on Mars Operation Center*



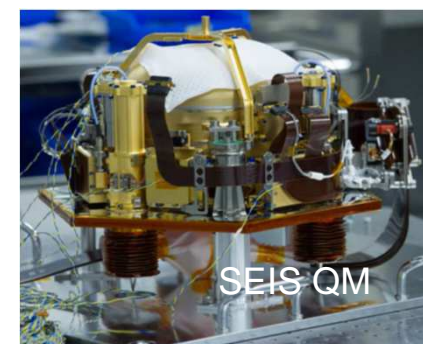
Christophe AGARD et Christophe FERRIER

DNO/SC/ED

# Exploitation (2 années)

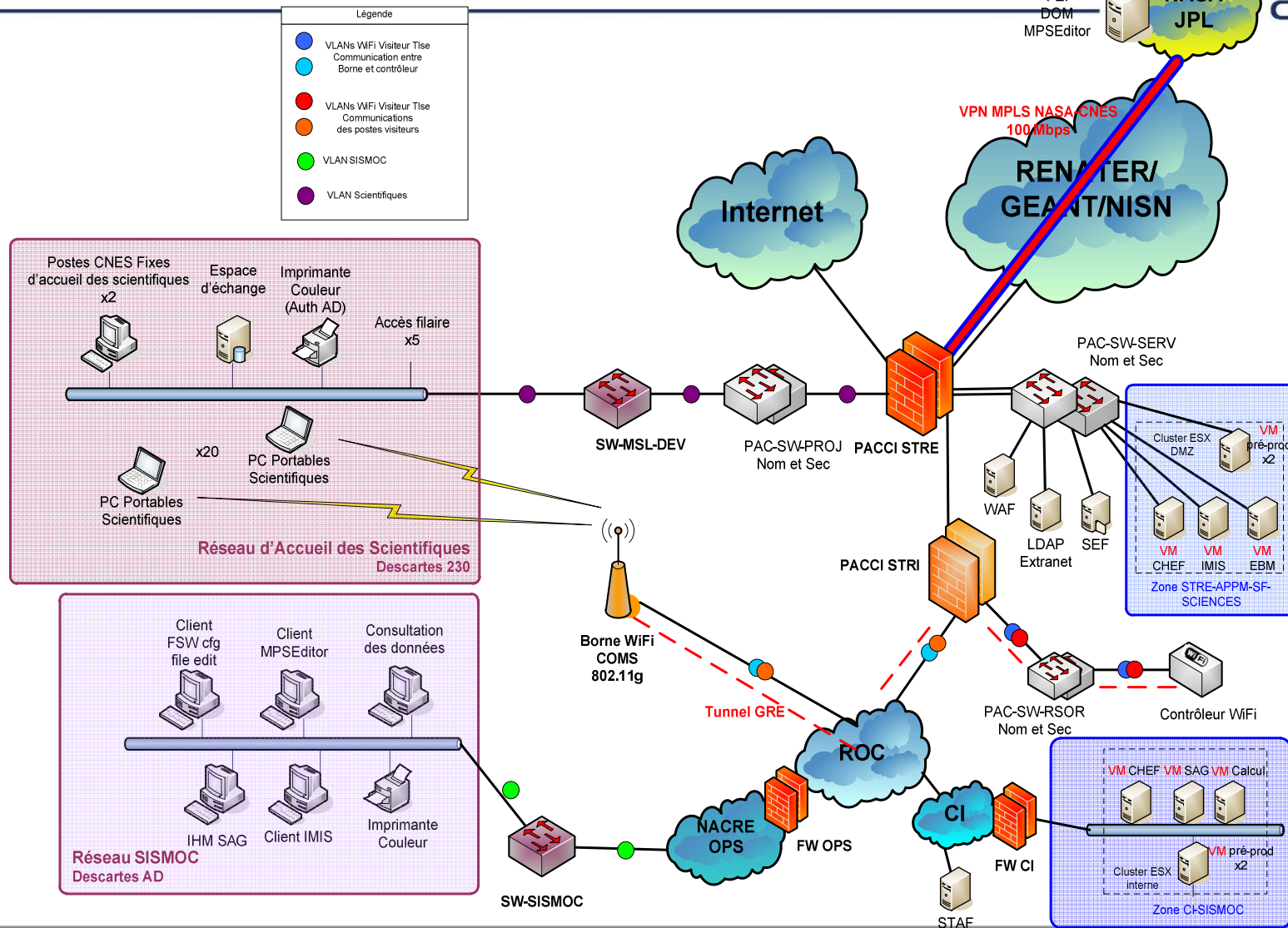


- Opérations SEIS faites à partir du SISMOC
- Opérations InSight coordonnées par le JPL
- 1 uplink / semaine
- 2 downlink / jour

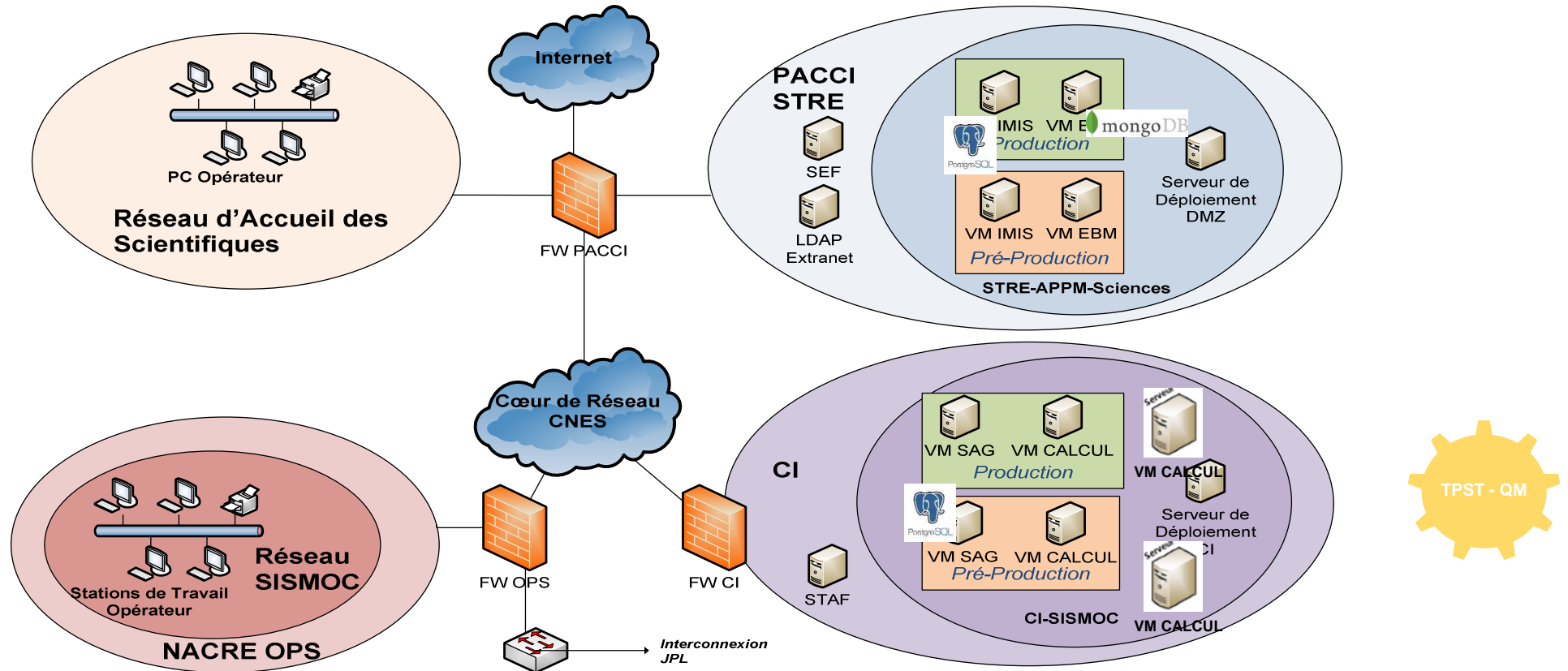


- EXPLOITATION : CNES + Supports Multimissions (3 P)
- MCO : CNES + Supports Multimissions (3 P)
- Contrôleur Multimissions (3P TPZ)
- GT : CNES (1P), TMA Cap Gemini  
Transfert DEV -> OPS effectué en Mai

# SISMOC – Architecture



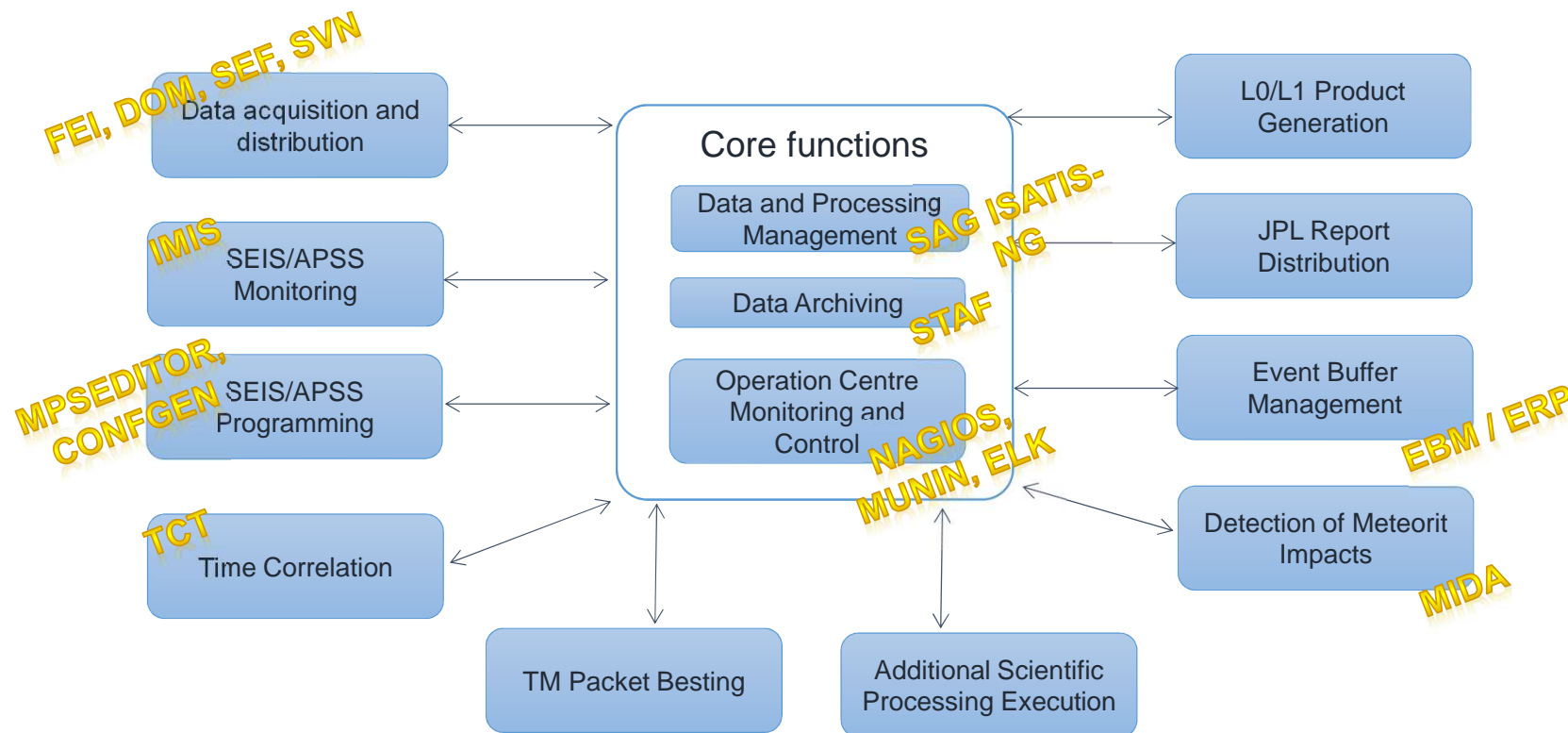
# SISMOC – Architecture



Total de 20 machines virtuelles sur les moyens communs du Cnes



# Fonctions du SISMOC



## Utilisation des services mutualisés CNES

- Les moyens réseaux : accès internes et externes SISMOC.
- L'annuaire **LDAP Extranet** pour les authentifications
- Le **SEF** pour les échanges de données avec les scientifiques (publication / intégration avec IPGP-ETHZ Suisse–CAB Espagne)
- Le **STAF** pour l'archivage des données
- Le **NAS** (espace de 3 To) pour le partage des données à destination des VM SAG et CALCUL et des opérateurs du SISMOC
- Le dépôt **Spacewalk** pour les mises à jour Red Hat
- La **sauvegarde** (NETBACKUP) et la **supervision** des VM (NAGIOS, MUNIN)
- La centralisation des logs **ELK**

3 plateformes SISMOC : Production / Pré-production / TPST (tests avec simulateur instrument)

Pour chaque ptf serveurs SISMOC installés sur 6 machines virtuelles Red Hat (dont 2 partagées pour les 3 ptf):

- 3 VM sur le cluster VMware interne (dont VM chef partagée)
- 3 VM sur le cluster VMware de DMZ (dont VM chef partagée)

- *IHM*
  - *Processus (102)*
  - *Journal de bord*
  - *Triggers*
  - *Données (60 types différents)*
  - *Suivi des services*
- *Gestion des données : type de données, visualisation, recherché par requêtes...*
- *Activer/Desactiver les triggers*
- *Suivre l'exécution des processus trigger*



# Core System : re-use of CNES multi-mission tool SAG



SAG UI - null - sag - [administrateurs]

File Open View Help

Processing Data Supervision

Process Types: (97/97) Request: Processes: (1000/1000) Request: Triggers LogWatcher

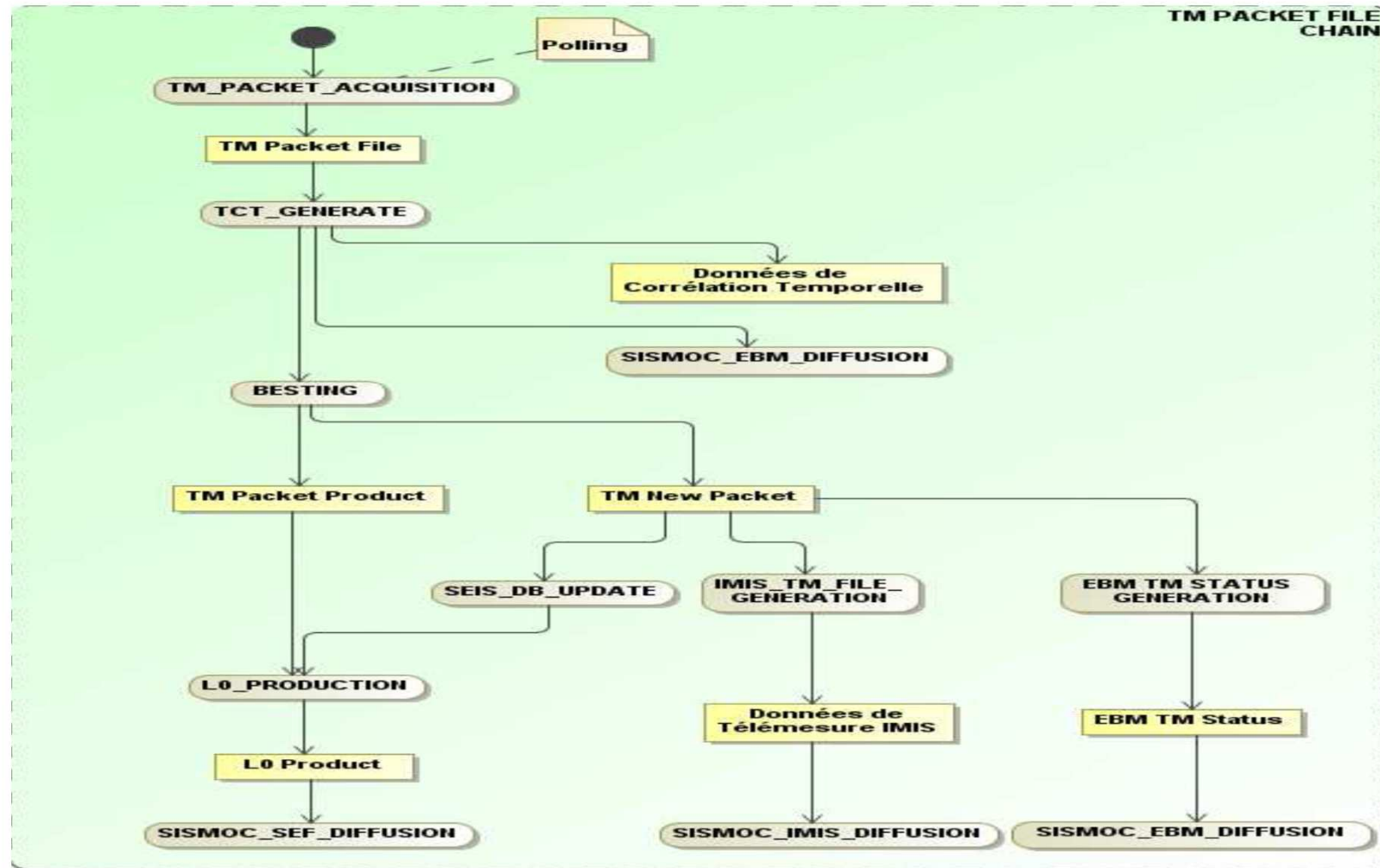
Identifier	Name	Description
55	CONVERSION_TIME_SERIES_TO_SCIENTIFIC_MSEED	Transformation of processed Time Series
53	CONVERSION_TM_TO_TIME_SERIES	Transformation of TM New Packets File
11	DESTRUCTION	Traitement de destruction
12	DESTRUCTION_RECURSIVE	Traitement de destruction récursif
73	DOM_ACQUISITION	Data acquisition from DOM
71	DOM_DIFFUSION_BLOCK_MODULES	Transfer of one or several block modules
67	DOM_DIFFUSION_FSW_CONFIGURATION_DB	Transfer of one or several fsw configurations
68	DOM_DIFFUSION_FSW_CONFIGURATION_XML	Transfer of one or several fsw configurations
33	DOM_DIFFUSION_GENERIC	Transfer of one or several files to DOM
70	DOM_DIFFUSION_REGULAR_FILE	Transfer of one or several regular files
69	DOM_DIFFUSION_SEQUENCES	Transfer of one or several sequences files
89	EBM_SEQUENCES_IMPORTER	Import of sequences files from EBM in
74	EBM_TM_STATUS	Generation of TM Status to notify EBM
60	EVENT_DETECTION_MAG_HF	Scientific processing of seismic data: er
63	EVENT_DETECTION_MAG_LF	Scientific processing of seismic data: er
84	EVENT_DETECTION_MAG_HF	Scientific processing of seismic data: er
58	EVENT_DETECTION_MAG_LF	Scientific processing of seismic data: er
59	EVENT_DETECTION_MAG_HF	Scientific processing of seismic data: er
65	EVENT_DETECTION_MAG_LF	Scientific processing of seismic data: er
85	EVENT_DETECTION_MAG_HF	Scientific processing of seismic data: er
25	EVENT_REPORT_ACQUISITION	Cataloging of EVR report files
13	EXPORT_INTERFACE	Traitement d'export d'interface
4	EXTRACTION	Mise à disposition de données du Catalogue
49	FEL_CREATE_SUBSCRIPTION	Manual processing to create a subscription
50	FEL_DELETE_SUBSCRIPTION	Manual processing to delete a subscription
51	FEL_START_SUBSCRIPTION	Manual processing to start a subscription
52	FEL_STOP_SUBSCRIPTION	Manual processing to stop a subscription
38	FIR_FILTER_EXTRACTION	Extract one of several fir filter data into

Request	Data									
Identifier	Status	Process Type	Owner	Directory	Machine	Starting Date	Ending Date	RAM	Server URL	Run Nur
11199	TERMINÉ	SISMOC_SEF_DIFFUSION	batch			28/11/2016 18:1...	28/11/2016 18:1...		https://localho...	TM ACC
11157	TERMINÉ	CONVERSION_MINISEED_TO_TIME_SERIES	batch			28/11/2016 15:0...	28/11/2016 15:0...		https://localho...	CONVER
11224	TERMINÉ	CONVERSION_MINISEED_TO_TIME_SERIES	batch			01/12/2016 09:0...	01/12/2016 09:0...		https://localho...	CONVER
11218	TERMINÉ	DOM_ACQUISITION	batch		tu-sismoc-p02.cst.cnes.fr	30/11/2016 01:0...	30/11/2016 01:0...	512	https://localho...	DOM AC
11200	TERMINÉ	DOM_ACQUISITION	batch		tu-sismoc-p02.cst.cnes.fr	29/11/2016 01:0...	29/11/2016 01:0...	512	https://localho...	DOM AC
11236	EN COURS	FIR_FILTER_EXTRACTION	sag	/SAG/OPERATIONNEL	tu-sismoc-p02.cst.cnes.fr	02/12/2016 14:5...	02/12/2016 14:5...	512	https://localho...	
11239	TERMINÉ	SISMOC_EBM_DIFFUSION_FSW_CONFIGURA...	sag	/SAG/OPERATIONNEL	tu-sismoc-p02.cst.cnes.fr	02/12/2016 15:1...	02/12/2016 15:1...	512	https://localho...	
11235	EN COURS	FIR_FILTER_EXTRACTION	sag	/SAG/OPERATIONNEL	tu-sismoc-p02.cst.cnes.fr	02/12/2016 14:5...	02/12/2016 14:5...	512	https://localho...	
11245	TERMINÉ	DOM_ACQUISITION	batch		tu-sismoc-p02.cst.cnes.fr	03/12/2016 01:0...	03/12/2016 01:0...	512	https://localho...	DOM AC
11238	TERMINÉ	SISMOC_EBM_DIFFUSION_FIR	batch		tu-sismoc-p02.cst.cnes.fr	02/12/2016 15:0...	02/12/2016 15:0...	256	https://localho...	FIR FILT
11244	TERMINÉ	DOM_ACQUISITION	batch		tu-sismoc-p02.cst.cnes.fr	03/12/2016 01:0...	03/12/2016 01:0...	512	https://localho...	DOM AC
11248	TERMINÉ	DOM_ACQUISITION	batch		tu-sismoc-p02.cst.cnes.fr	04/12/2016 01:0...	04/12/2016 01:0...	512	https://localho...	DOM AC
11261	TERMINÉ	B12_COHERENCE_CALCULATION_2_SIGNALS	batch		tu-sismoc-p02.cst.cnes.fr	04/12/2016 09:0...	04/12/2016 09:0...	512	https://localho...	COHERE
11256	TERMINÉ	EVENT_DETECTION_MAG_HF	batch		tu-sismoc-p02.cst.cnes.fr	04/12/2016 09:0...	04/12/2016 09:0...	512	https://localho...	APSS EV
11265	TERMINÉ	B12_COHERENCE_CALCULATION_2_SIGNALS	batch		tu-sismoc-p02.cst.cnes.fr	04/12/2016 09:0...	04/12/2016 09:0...	512	https://localho...	COHERE
11255	TERMINÉ	EVENT_DETECTION_MAG_LF	batch		tu-sismoc-p02.cst.cnes.fr	04/12/2016 09:0...	04/12/2016 09:0...	512	https://localho...	APSS EV
11270	TERMINÉ	CONVERSION_TIME_SERIES_TO_SCIENTIFIC...	batch		tu-sismoc-p02.cst.cnes.fr	04/12/2016 09:0...	04/12/2016 09:0...	512	https://localho...	APSS EV
11269	TERMINÉ	SISMOC_EBM_DIFFUSION	batch		tu-sismoc-p02.cst.cnes.fr	04/12/2016 09:0...	04/12/2016 09:0...	512	https://localho...	APSS EV
11204	TERMINÉ	SISMOC_IMIS_DIFFUSION	sag		tu-sismoc-p02.cst.cnes.fr	29/11/2016 10:0...	29/11/2016 10:0...	256	https://localho...	
11262	TERMINÉ	B12_COHERENCE_CALCULATION_2_SIGNALS	batch		tu-sismoc-p02.cst.cnes.fr	04/12/2016 09:0...	04/12/2016 09:0...	512	https://localho...	COHERE
11263	TERMINÉ	B12_COHERENCE_CALCULATION_6_SIGNALS	batch		tu-sismoc-p02.cst.cnes.fr	04/12/2016 09:0...	04/12/2016 09:0...	512	https://localho...	COHERE
11254	TERMINÉ	EVENT_DETECTION_MAG_HF	batch		tu-sismoc-p02.cst.cnes.fr	04/12/2016 09:0...	04/12/2016 09:0...	512	https://localho...	APSS EV
11056	TERMINÉ	B12_COHERENCE_CALCULATION_2_SIGNALS	batch		tu-sismoc-p02.cst.cnes.fr	25/11/2016 09:2...	25/11/2016 09:2...	512	https://localho...	COHERE
11060	TERMINÉ	B12_COHERENCE_CALCULATION_2_SIGNALS	batch		tu-sismoc-p02.cst.cnes.fr	25/11/2016 09:2...	25/11/2016 09:2...	512	https://localho...	COHERE
11052	TERMINÉ	EVENT_DETECTION_MAG_LF	batch		tu-sismoc-p02.cst.cnes.fr	25/11/2016 09:2...	25/11/2016 09:2...	512	https://localho...	APSS EV

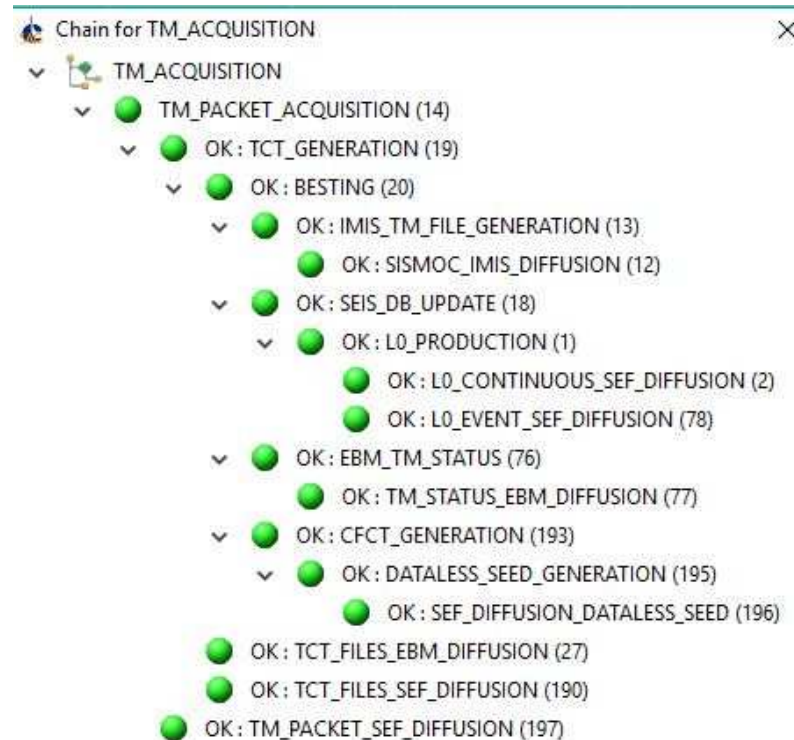
Services Monitoring: (23/23) Triggers: (192/192) Logbook: (34/34) Request: Logbook

Identifier	Message Date	Mess...	User	Machine	Description
1215894	06/01/2017 01:00:14.571	INFO	batch	tu-sismoc-p01.cst.cnes.fr	DOM_ACQUISITION_11552 planned by batch.
1215895	06/01/2017 01:00:14.636	INFO	batch	tu-sismoc-p01.cst.cnes.fr	DOM_ACQUISITION_11553 planned by batch.
1215896	06/01/2017 01:00:14.969	INFO	batch	tu-sismoc-p01.cst.cnes.fr	DOM_ACQUISITION_11554 planned by batch.
1215905	06/01/2017 01:00:37.532	INFO	batch	tu-sismoc-p02.cst.cnes.fr	End of DOM_ACQUISITION_11552 (DOM_ACQUISITION): result = 0
1215903	06/01/2017 01:00:37.428	INFO	batch	tu-sismoc-p02.cst.cnes.fr	End of DOM_ACQUISITION_11553 (DOM_ACQUISITION): result = 0
1215904	06/01/2017 01:00:37.510	INFO	batch	tu-sismoc-p02.cst.cnes.fr	End of DOM_ACQUISITION_11554 (DOM_ACQUISITION): result = 0
1215887	05/01/2017 11:03:12.721	INFO	batch	tu-sismoc-p02.cst.cnes.fr	End of IMIS_DOWNLOAD_DATA_MONITORING_11551 (IMIS_DOWNLOAD_DATA_MONITORING_11551): result = 0
1215886	05/01/2017 11:02:57.421	INFO	batch	tu-sismoc-p02.cst.cnes.fr	Executing command line: imis-batch -duration 18000 -end 05/01/2017-11:02:39 /sismoc/datamaj/SAG/TRAVAIL/IMIS_DOWNLOAD_DATA_MONITORING_11551/OUT/alarmsFile_2017-005T060239_2017-005T110239 -id /SAG/OPERATIONNEL/REFERENTIEL/...
1215885	05/01/2017 11:02:40.013	INFO	batch	tu-sismoc-p02.cst.cnes.fr	Executing command line: imis-batch -rules /sismoc/datamaj/SAG/TRAVAIL/IMIS_DOWNLOAD_DATA_MONITORING_11551/OUT/rulesFile_2017-005T060239 -id /SAG/OPERATIONNEL/REFERENTIEL/CONFIGURATION/SISMOC/IMIS/configuration/authentication.r...
1215907	06/01/2017 01:00:42.214	INFO	batch	tu-sismoc-p02.cst.cnes.fr	Fin du traitement DOM_ACQUISITION_11552 : Max Memory Used : 5467.74609375 Mo Max Disk Space Used : 0.0546875 Mo Real Time Elapsed : 00:00:15 (hh:mm:ss) - 0.25 min User Time Elapsed : 00:00:01 (hh:mm:ss) - 0.02 min
1215906	06/01/2017 01:00:42.190	INFO	batch	tu-sismoc-p02.cst.cnes.fr	Fin du traitement DOM_ACQUISITION_11553 : Max Memory Used : 5467.74609375 Mo Max Disk Space Used : 0.0546875 Mo Real Time Elapsed : 00:00:15 (hh:mm:ss) - 0.25 min User Time Elapsed : 00:00:01 (hh:mm:ss) - 0.02 min
1215908	06/01/2017 01:00:42.259	INFO	batch	tu-sismoc-p02.cst.cnes.fr	Fin du traitement DOM_ACQUISITION_11554 : Max Memory Used : 5467.99609375 Mo Max Disk Space Used : 0.0546875 Mo Real Time Elapsed : 00:00:15 (hh:mm:ss) - 0.25 min User Time Elapsed : 00:00:01 (hh:mm:ss) - 0.02 min
1215892	05/01/2017 11:03:20.394	INFO	batch	tu-sismoc-p02.cst.cnes.fr	Fin du traitement IMIS_DOWNLOAD_DATA_MONITORING_11551 : Max Memory Used : 2873.11328125 Mo Max Disk Space Used : 0.12890625 Mo Real Time Elapsed : 00:00:36 (hh:mm:ss) - 0.6 min User Time Elapsed : 00:00:25 (hh:mm:ss) - 0.42 min
1215882	05/01/2017 11:02:32.968	INFO	batch	tu-sismoc-p01.cst.cnes.fr	IMIS_DOWNLOAD_DATA_MONITORING_11551 planned by batch.
1215911	06/01/2017 01:00:46.211	INFO	batch	tu-sismoc-p01.cst.cnes.fr	Job DOM_ACQUISITION_11552 was completed without errors.
1215909	06/01/2017 01:00:45.893	INFO	batch	tu-sismoc-p01.cst.cnes.fr	Job DOM_ACQUISITION_11553 was completed without errors.

# Chaine d'acquisition TM du SISMOC



# Chaîne SAG d'acquisition TM du SISMOC

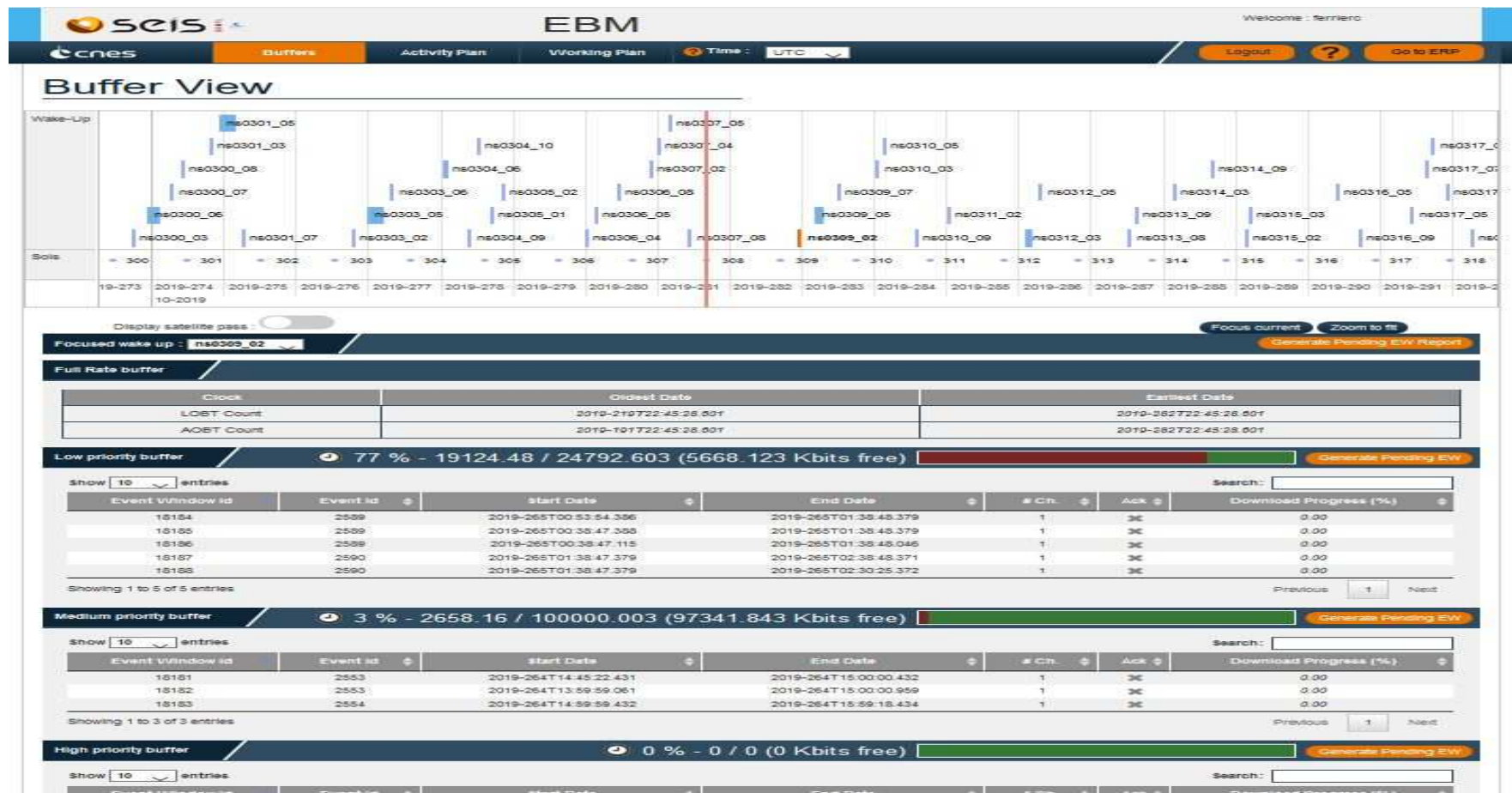


**EBM est un outil spécifique au Sismoc, à destination des ingénieurs du Sismoc, qui permet :**

- **De gérer les données téléchargées du lander**
- **De voir l'état des buffers bords de stockage des données**
- **D'estimer le volume de données et le temps CPU de traitement bord d'une requête de téléchargement de données**
- **De générer et valider des fichiers de commandes à envoyer au Lander**
- **...**



# Event Buffer Management (EBM)



**ERP est un outil spécifique au Sismoc, à destination des scientifiques et des ingénieurs du Sismoc, qui permet :**

- **De gérer les requêtes de téléchargement de données :**
  - **Prioriser les requêtes;**
  - **Sélectionner les requêtes à monter sur le Lander**
  - **Voir l'état des requêtes envoyées au Lander**
- **De voir l'état des senseur**
- **...**



# Event Request Proposal (ERP)



Event Request Proposal Tool

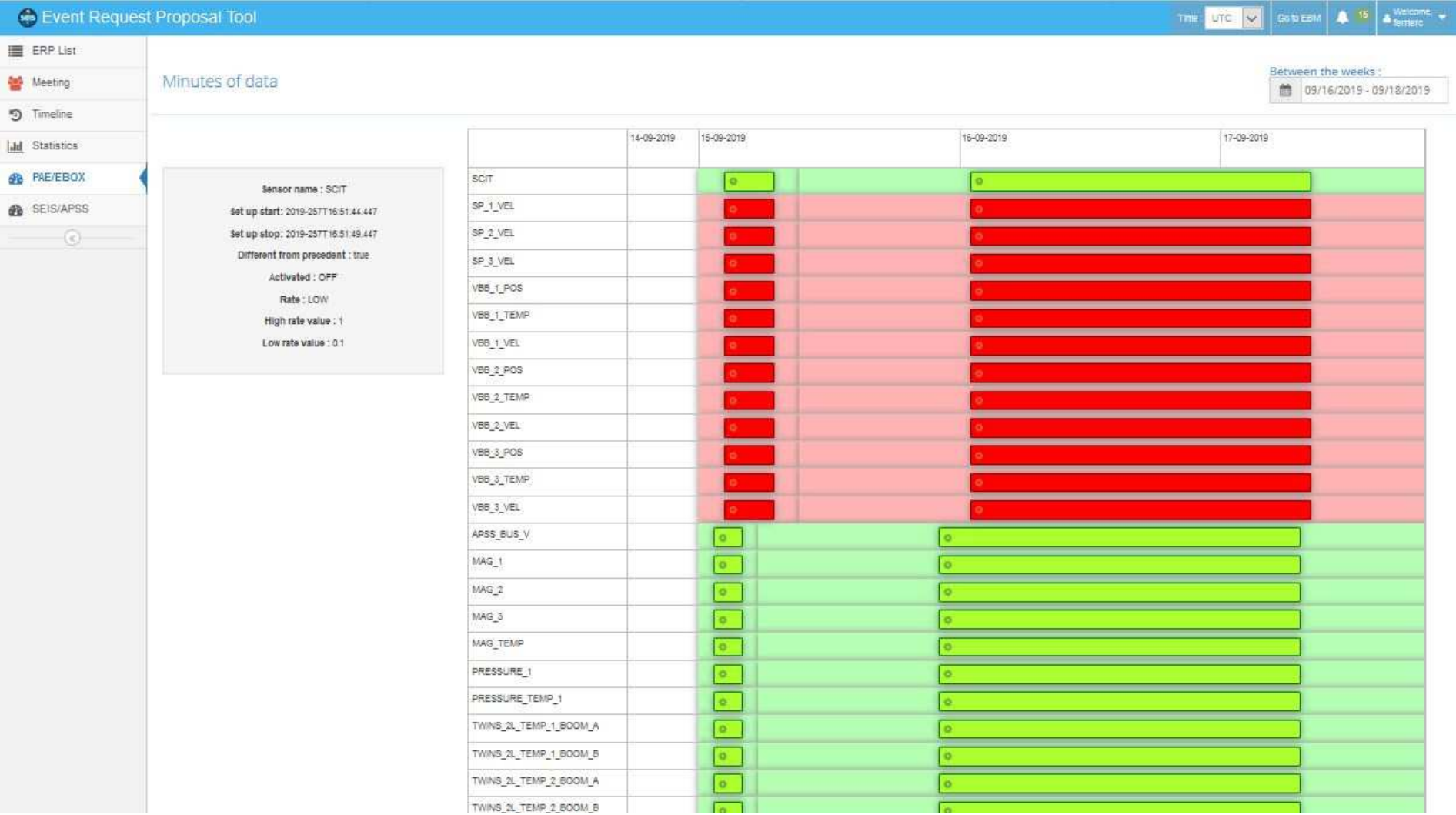
Time: UTC Go to ERM 0 WELCOME NEWBIE

ERP List Meeting Timeline Statistics PAE/EBOX SEIS/APSS

Actions Generate Report Start pre-ranking Start SEIS pre-ranking

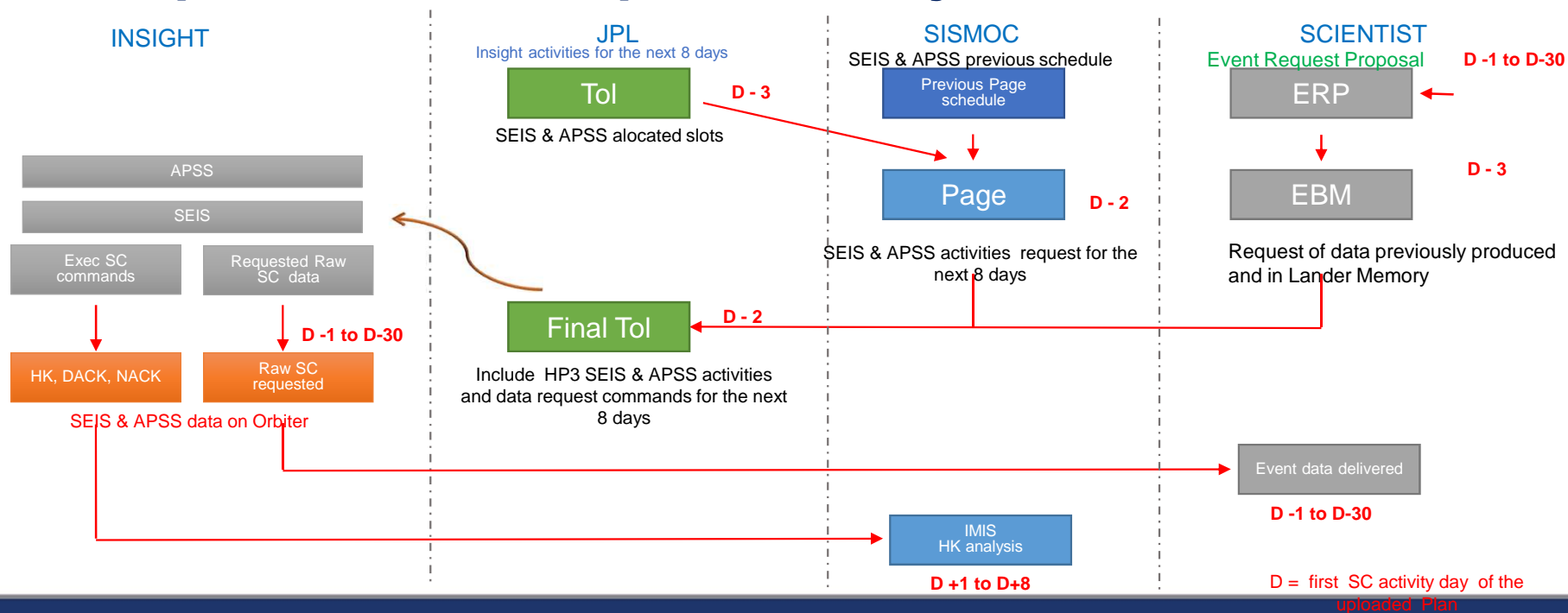
#	Rank	Pre-rank	Event ID	Status	Type	Science Group	CPU	Data	Channels	V/ssaUp	Producer	Production Time	Expiration Date	Event internal ID	Meeting	Redund.	Info
				Proposed, P...	All	All					All						
1	7	1591	Sent	OTHER	SEIS	00:04:36	40505.72 Kbits	5	ns0142_06	SEIS_DATA_PORTAL	2019-098T09:53:02.000	2019-157T03:59:00.000	eqp-1214	2019-109T18:45:39.427			
2	8	1622	Sent	SEISMIC_PRESSURE_IMPACT	MQS	00:01:45	17982.72 Kbits	1	ns0140_07	SEIS_DATA_PORTAL	2019-104T15:53:04.000	2019-166T01:30:00.000	eqp-1245	2019-107T18:12:54.834			
3	2	1624	Sent	SEISMIC_PRESSURE_IMPACT	MQS	00:01:45	17982.72 Kbits	1	ns0141_03	SEIS_DATA_PORTAL	2019-104T15:59:22.000	2019-166T05:30:00.000	eqp-1247	2019-109T18:45:39.427			
4	2	1648	Sent	OTHER	SEIS	00:04:16	40470.04 Kbits	5	ns0146_05	SEIS_DATA_PORTAL	2019-107T09:15:44.000	2019-166T09:55:20.000	eqp-1271	2019-114T19:12:55.459			
5	3	1715	Sent	SEISMIC_IMPACT	SEIS	00:05:45	47124.36 Kbits	1	ns0153_03	SEIS_DATA_PORTAL	2019-116T21:31:41.000	2019-115T12:00:00.000	eqp-1340	2019-119T20:01:31.450			
6	14	1734	Sent	SEISMIC_IMPACT	SEIS	00:01:39	10409.64 Kbits	1	ns0155_03	SEIS_DATA_PORTAL	2019-116T22:31:24.000	2019-115T00:00:00.000	eqp-1358	2019-121T17:57:15.728			
7	12	1735	Sent	SEISMIC_IMPACT	SEIS	00:01:20	7573.06 Kbits	1	ns0155_03	SEIS_DATA_PORTAL	2019-116T22:33:07.000	2019-115T02:41:17.000	eqp-1359	2019-121T17:57:15.728			
8	6	1748	Sent	SEISMIC_IMPACT	SEIS	00:06:05	47142.2 Kbits	1	ns0154_06	SEIS_DATA_PORTAL	2019-116T22:52:57.000	2019-120T12:00:00.000	eqp-1372	2019-121T17:57:15.728			
9	5	1752	Sent	SEISMIC_IMPACT	SEIS	00:05:55	47133.28 Kbits	1	ns0154_02	SEIS_DATA_PORTAL	2019-116T22:56:16.000	2019-121T00:00:00.000	eqp-1376	2019-121T17:57:15.728			
10	6	1768	Sent	SEISMIC_IMPACT	SEIS	00:06:05	47142.2 Kbits	1	ns0155_07	SEIS_DATA_PORTAL	2019-121T09:32:29.000	2019-123T12:00:00.000	eqp-1392	2019-123T18:40:54.233			
11	11	1775	Sent	SEISMIC_IMPACT	SEIS	00:03:23	28526.16 Kbits	1	ns0155_02	SEIS_DATA_PORTAL	2019-121T09:54:19.000	2019-124T00:00:00.000	eqp-1399	2019-123T18:40:54.233			
12	17	1781	Sent	SEISMIC_IMPACT	SEIS	00:05:55	47133.28 Kbits	1	ns0157_06	SEIS_DATA_PORTAL	2019-121T10:05:26.000	2019-125T12:00:00.000	eqp-1405	2019-123T18:40:54.233			
13	13	1815	Sent	THERMAL_QUAKE	MQS	00:01:12	14923.16 Kbits	1	ns0168_05	SEIS_DATA_PORTAL	2019-125T21:22:32.000	2019-187T13:00:00.000	eqp-1440	2019-127T15:00:19.927			
14	14	1825	Sent	THERMAL_QUAKE	MQS	00:00:55	39363.96 Kbits	1	ns0190_05	SEIS_DATA_PORTAL	2019-125T21:43:51.000	2019-187T07:45:00.000	eqp-1450	2019-155T14:16:49.448			
15	27	1904	Sent	SEISMIC_IMPACT	SEIS	00:01:38	39417.48 Kbits	1	ns0175_01	SEIS_DATA_PORTAL	2019-134T13:04:36.000	2019-140T16:00:00.000	eqp-1529	2019-134T14:01:29.273			
16	26	1906	Sent	SEISMIC_IMPACT	SEIS	00:01:14	31523.28 Kbits	1	ns0175_01	SEIS_DATA_PORTAL	2019-134T13:07:01.000	2019-140T08:00:00.000	eqp-1531	2019-134T14:01:29.273			
17	28	1907	Sent	SEISMIC_IMPACT	SEIS	00:01:24	31558.96 Kbits	1	ns0175_01	SEIS_DATA_PORTAL	2019-134T13:07:55.000	2019-140T16:00:00.000	eqp-1532	2019-134T14:01:29.273			
18	0	1935	Sent	METEOROLOGIC_EVENT	WEATHER	00:10:29	13683.28 Kbits	1	ns0176_03	SEIS_DATA_PORTAL	2019-135T15:58:56.000	2019-179T01:12:09.000	eqp-1560	2019-141T14:02:00.612			
19	1	1936	Sent	METEOROLOGIC_EVENT	WEATHER	00:10:29	13683.28 Kbits	1	ns0177_05	SEIS_DATA_PORTAL	2019-135T15:59:23.000	2019-179T04:15:37.000	eqp-1561	2019-141T14:02:00.612			
20	0	1941	Sent	REGIONAL_MARSQUAKE	APSS	00:00:41	3799.92 Kbits	1	ns0176_03	SEIS_DATA_PORTAL	2019-135T20:21:55.000	2019-192T12:30:00.000	eqp-1566	2019-141T14:02:00.612			
21	1	1942	Sent	REGIONAL_MARSQUAKE	APSS	00:00:51	3817.76 Kbits	1	ns0177_05	SEIS_DATA_PORTAL	2019-135T20:23:19.000	2019-213T06:30:00.000	eqp-1567	2019-141T14:02:00.612			
22	4	1944	Sent	OTHER	SEIS	00:01:03	2765.2 Kbits	1	ns0177_02	SEIS_DATA_PORTAL	2019-135T20:37:25.000	2019-177T17:10:00.000	eqp-1569	2019-141T14:02:00.612			
23	5	1945	Sent	OTHER	SEIS	00:01:44	13201.6 Kbits	1	ns0177_05	SEIS_DATA_PORTAL	2019-135T20:39:32.000	2019-177T18:10:48.000	eqp-1570	2019-141T14:02:00.612			
24	6	1946	Sent	OTHER	SEIS	00:01:30	10454.24 Kbits	1	ns0178_01	SEIS_DATA_PORTAL	2019-135T20:41:12.000	2019-177T23:11:35.000	eqp-1571	2019-141T14:02:00.612			
25	7	1947	Sent	OTHER	SEIS	00:01:10	6279.68 Kbits	1	ns0178_01	SEIS_DATA_PORTAL	2019-135T20:42:42.000	2019-178T03:09:29.000	eqp-1572	2019-141T14:02:00.612			
26	8	1948	Sent	OTHER	SEIS	00:02:15	19552.64 Kbits	1	ns0178_01	SEIS_DATA_PORTAL	2019-135T20:44:58.000	2019-178T05:30:00.000	eqp-1573	2019-141T14:02:00.612			
27	2	1953	Sent	REGIONAL_MARSQUAKE	MQS	00:00:51	6244 Kbits	1	ns0176_03	SEIS_DATA_PORTAL	2019-138T19:10:35.000	2019-200T16:20:00.000	eqp-1608	2019-141T14:02:00.612			
28	3	1956	Sent	REGIONAL_MARSQUAKE	MQS	00:13:04	19267.2 Kbits	1	ns0176_03	SEIS_DATA_PORTAL	2019-138T19:15:52.000	2019-228T16:00:00.000	eqp-1611	2019-141T14:02:00.612			

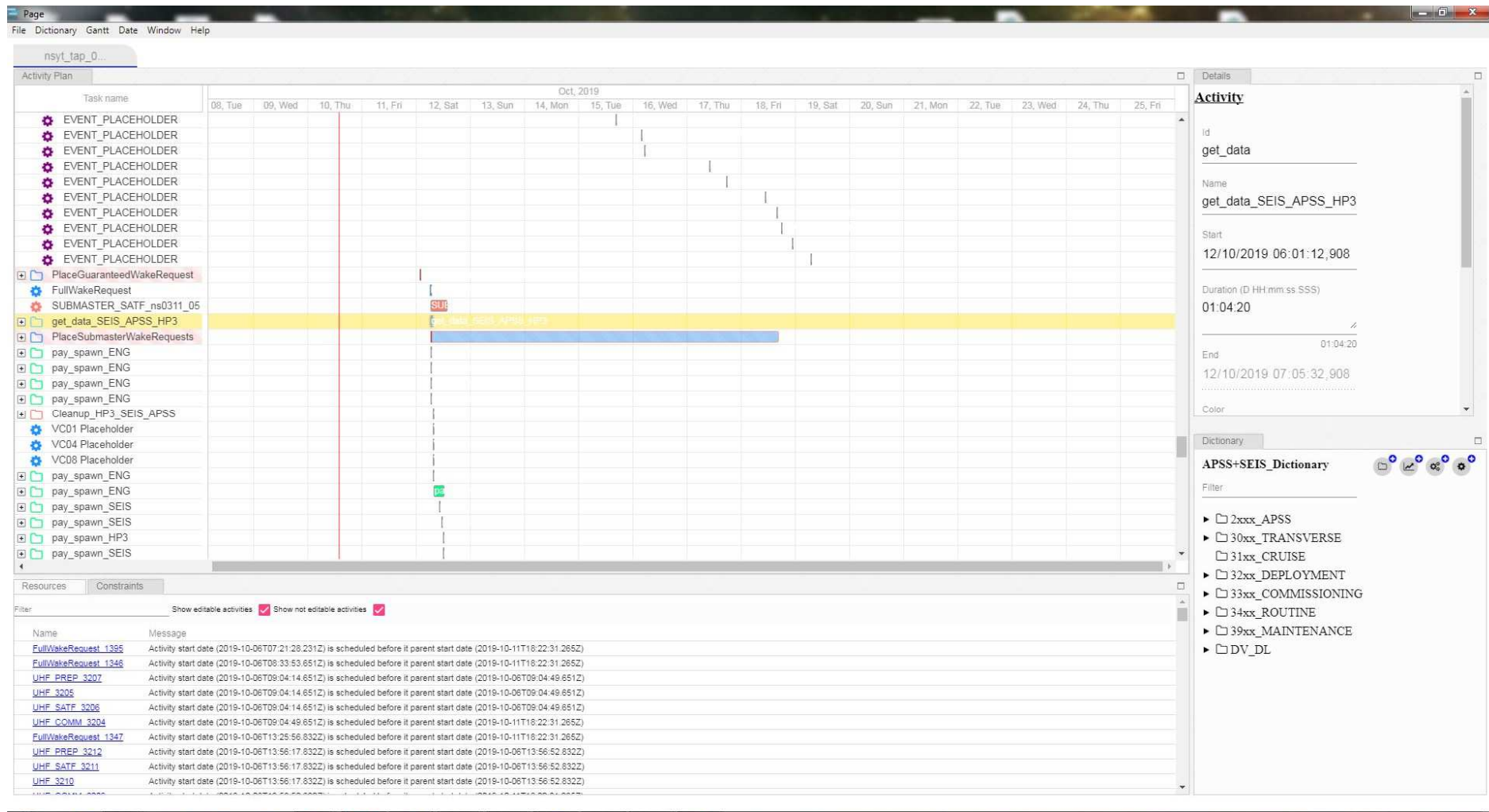
# Event Request Proposal (ERP)



**PAGE** est un outil générique développé pour le Sismoc, à destination des ingénieurs du Sismoc, qui permet :

- De visualiser les planning d'activité envoyés par le JPL (TOL)
- D'insérer les activités SEIS dans les TOL
- D'exporter ces données pour les renvoyer au JPL





# Instrument Monitoring Interactive Software (IMIS)

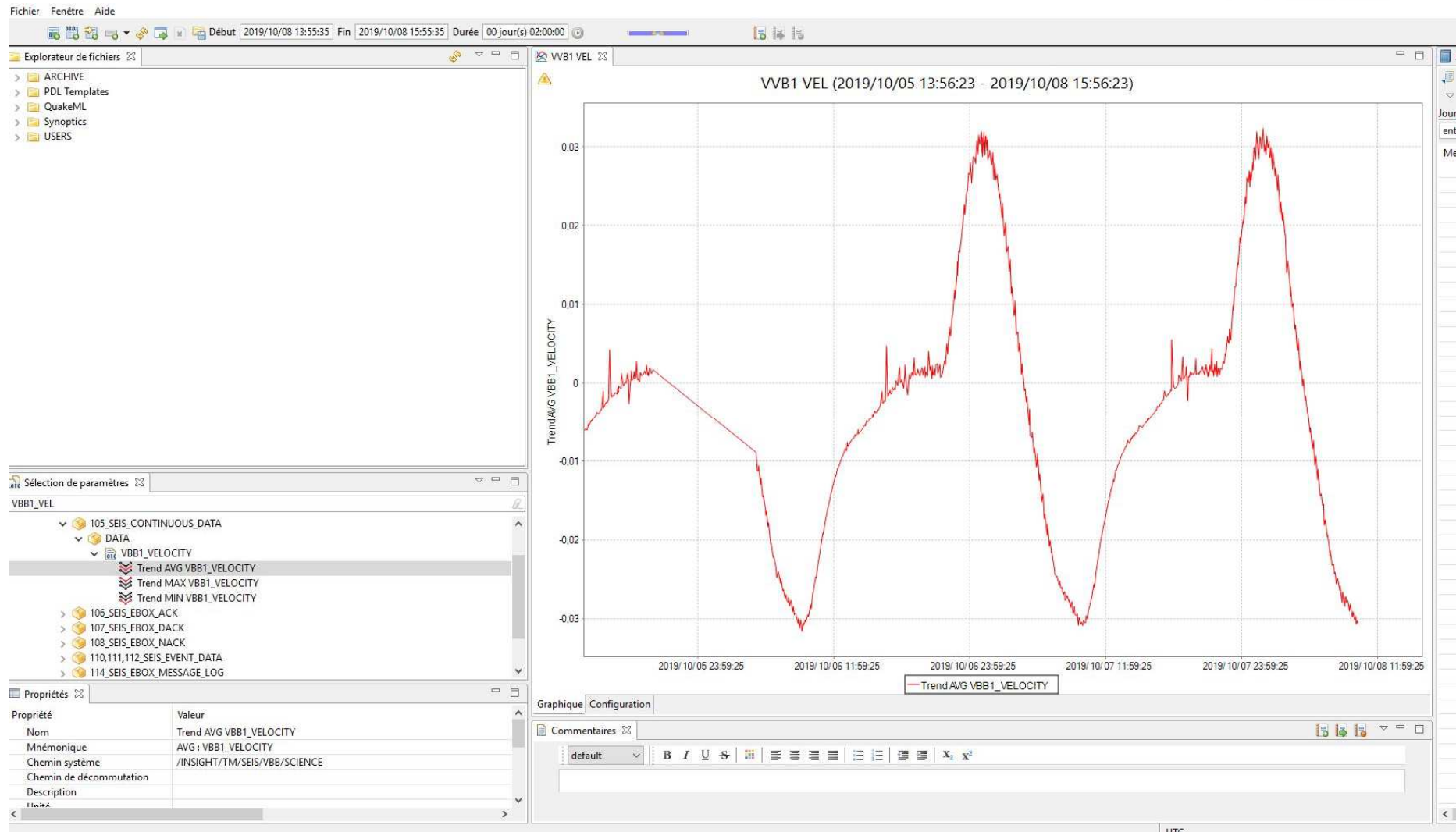
---



**IMIS est un outil générique Cnes, adapté au Sismoc, à destination des scientifiques et des ingénieurs du Sismoc, qui permet de surveiller les senseurs et les données reçues (SEIS et APSS) :**

- **Acquisition automatique des TM/TC;**
- **Surveillances des paramètres bords et calculés sol**
- **Gestion de règles de surveillance**
- **Génération d'alarmes**
- **Génération automatique de rapports**
- **Analyse de tendance**
- **Gestion des données internes (suppression...)**
- **Historique des commandes**

# Instrument Monitoring Interactive Software (IMIS)





**Questions ?**