

COPE:

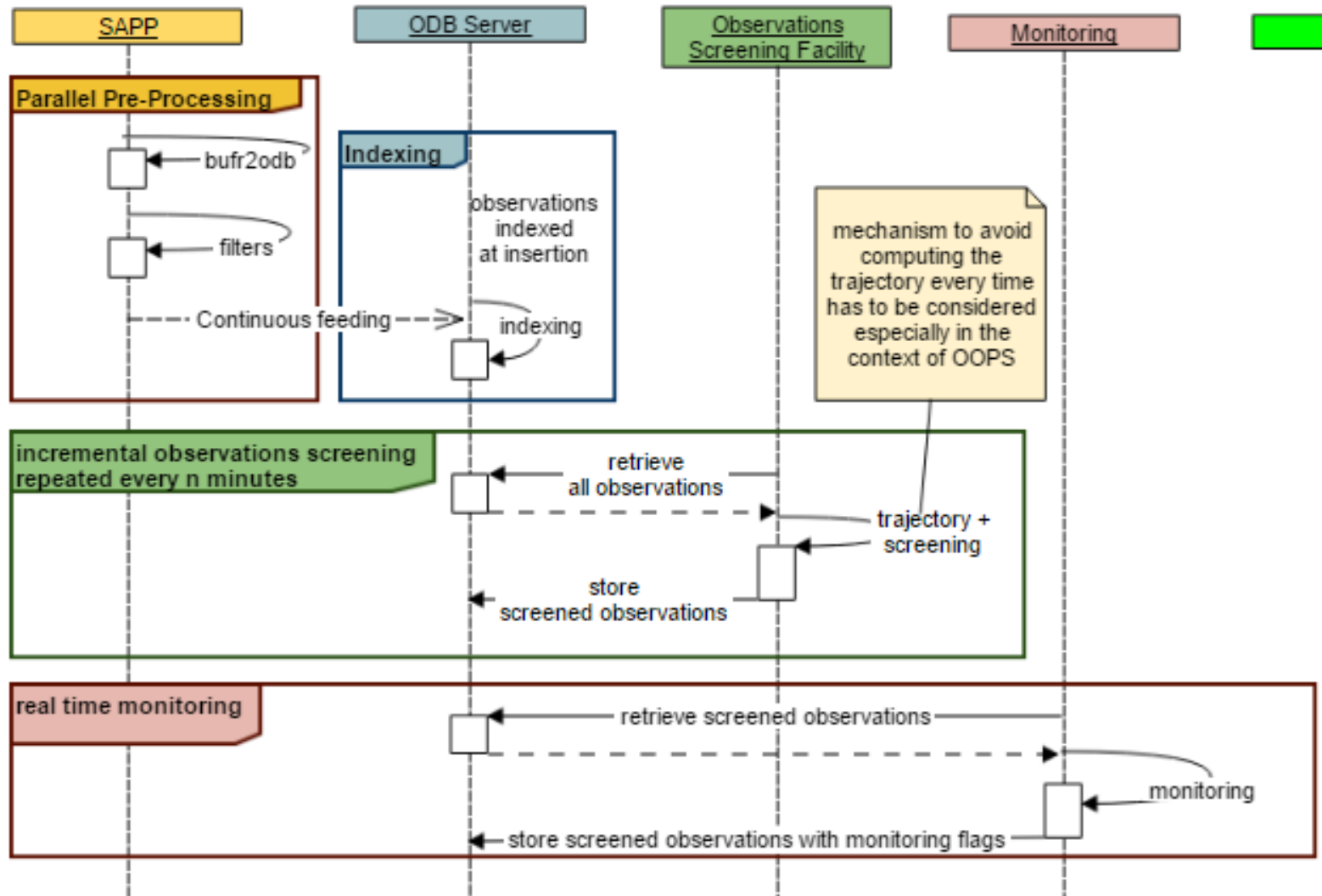
Continuous
Observation
Processing
Environment



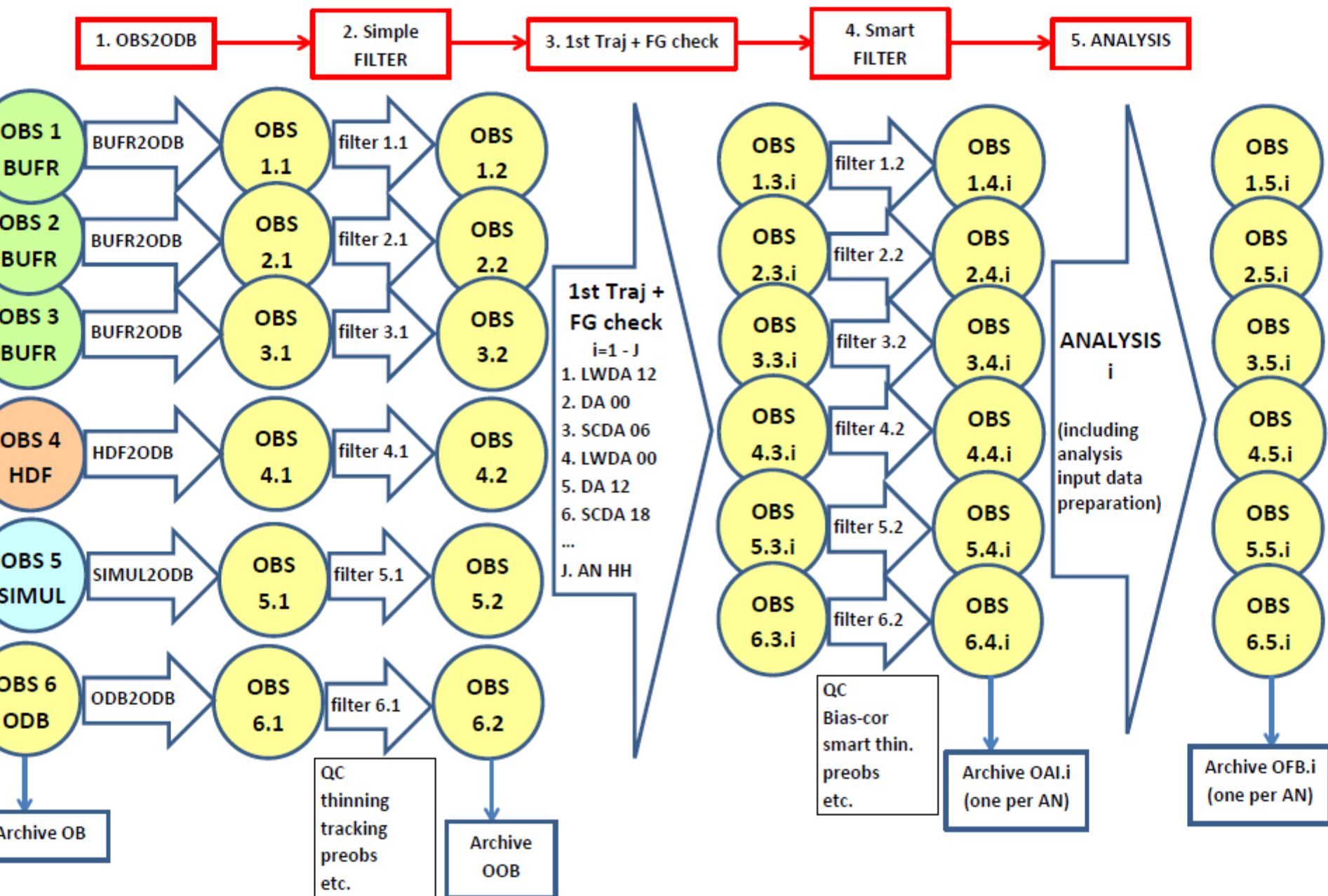
COPE Overview

- Components for a quasi-continuous obs processing
- More scalable and timely observation processing
- Currently QC in several places
 - pre-processing
 - external pre-screening
 - screening within assimilation
- Increasing risk of parallel developments or negative effects across these systems
- COPE will facilitate a more transparent framework for observation processing
- Allow external partners to collaborate and share observation processing components.

COPE



COPE Framework: Process Overview



COPE Principles



- Each ob type has exactly one pre-defined path
- Each ob will pass only once through
 1. OBS2ODB
 2. Simple Filter.
- Each ob will pass once for each DA cycle through
 3. 1st Traj + FG check
 4. Smart Filter
 5. Analysis

COPE Principles

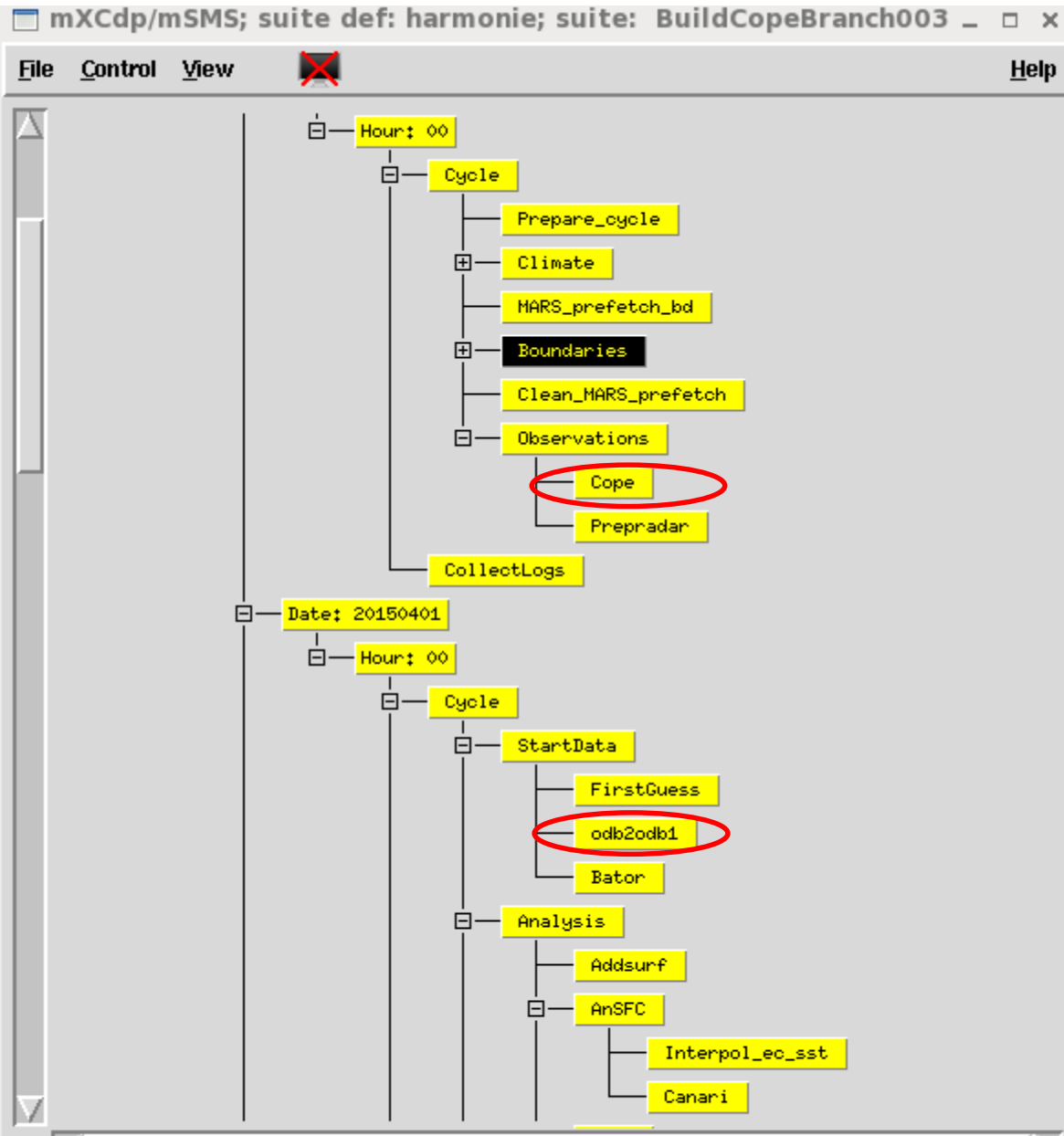


- Steps 3. and 4. do not yet exist
- Steps 1. to 4. will be performed incrementally
- Processing of active and passive obs should be separated
- Filters requiring information about previously processed observations will use externalised data repositories
 - e.g. tracking positions, bias correction history
 - no re-processing of already processed obs
- simple and generic interface routines in FORTRAN will be provided to develop new filters or work on existing filters without exposure to C++ or any other low-level aspect.

COPE in the AHNS: Filters

```
"filters": [  
  { "name": "LocationValidator" },  
  { "name": "DateTimeValidator" },  
  { "name": "InstrumentTypeAssigner" },  
  { "name": "MfVerticalCoordinateAssigner" },  
  { "name": "LandSynopVerticalCoordinateAssigner" },  
  { "name": "BiasCorrector" },  
  { "name": "WindComponentsAssigner" },  
  { "name": "PrescribedErrorAssigner",  
    "options": { "statistics_file": "error_statistics.csv" } },  
  { "name": "RelativeHumidityAssigner",  
    "options": { "apply_Td_gt_T_check": false, "svp": "buck" } },  
  { "name": "PrecipitationSplitter" },  
  { "name": "FinalErrorAssigner" },  
  { "name": "DegreesToRadiansConverter", "disabled": false },  
  { "name": "FinalChecker", "disabled": true }  
]
```

COPE in the AHNS



- **Cope** replaces **Oulan**
- **odb2odb1** converts COPE ODB2 data to ODB1 ECMAs for AnSFC & AnUA
- **Bator** continues to deal with non-conventional (non-Oulan data)
- ODB2 to ODB1 conversion is "messy" at the moment
- **USECOPE** in `sms/config_exp.h` controls use of Cope or Oulan

COPE in the AHNS: Status

- Still working as prototype in cy40h1 branch
- ODB splitting was an issue
- Splitting less of an issue with ODB-API and ECML
 - I think! – limited testing
 - “Don’t bother!” – ECMWF
 - IFS reading of observations to become more flexible
- SAPP implementation to be considered
- HDF5 (radar) developments have started
 - Dedicated b2o HDF5 branch not yet pushed
 - Plan to plug this in to COPE
- COPE has also been tested by Mohamed Anis Satouri & Alena Trojakova

Let's take a step back

- BDM at Météo France
- OPLACE
- Local pre-processing software
- Use raw GTS
- SAPP ...

SAPP web administration and monitoring

SAPP admin

Home » Acq » Deqcs

SAPP admin

Site admin

Acq

Datasources

Deqc routes

Deqcs

Extractions

Gts headings f

Ships

Stations

Auth

Groups

Users

Sites

Sites

Select deqc to change

Q |

Search

Action: -----

Go

0 of 100 selected

Name	Active	Verif	Bin
<input type="checkbox"/> AABN			(None)
<input type="checkbox"/> AAEN			mdb_aaen
<input type="checkbox"/> ABEN			mdb_aben
<input type="checkbox"/> ACMR			mdb_acar_mixing_ratio
<input type="checkbox"/> AEOL			mdb_aeol
<input type="checkbox"/> AHWS			mdb_ascatrl2_w_ssm
<input type="checkbox"/> AIRC			mdb_airep
<input type="checkbox"/> AIRS			mdb_airs
<input type="checkbox"/> ALTI			mdb_saral_altika
<input type="checkbox"/> ALWS			mdb_ascatrl2_w_ssm
<input type="checkbox"/> AMAP			mdb_amap
<input type="checkbox"/> ANDA			mdb_amdar
<input type="checkbox"/> AMS2			mdb_amsr2
<input type="checkbox"/> AMSA			mdb_amsa
<input type="checkbox"/> AMSB			mdb_amsb
<input type="checkbox"/> AMSE			mdb_amse
<input type="checkbox"/> AMSR			mdb_amsre
<input type="checkbox"/> AMSU			mdb_amsu
<input type="checkbox"/> AMV2			mdb_amv_msg2
<input type="checkbox"/> AMV3			mdb_amv_msg3
<input type="checkbox"/> AMVE			mdb_amve
<input type="checkbox"/> ASBH			mdb_ascat_metopb_hr_l1
<input type="checkbox"/> ASBL			mdb_ascat_metopb_lr_l1
<input type="checkbox"/> ASC2			mdb_ascatrl2
<input type="checkbox"/> ASCA			mdb_ascat
<input type="checkbox"/> ASCH			mdb_ascathr

SAPP admin

Home » Acq » Deqcs » AAEN

Change deqc

Names: AAEN

(unique) 4 CHAR code of decoder/converter

-17 11:04:00

☒ Active

set to enable processing

-17 11:04:00

☒ Verif

set to confirm config, is correct and binary is installed

-17 11:04:00

Type: 1

1: decoder, 2: converter (partial processing)

-17 11:04:00

Details

Pp: 2

HAPP package (1,2,3)

-12 12:39:26

Bin: mdb_aaen

name of the binary file, ie: mdb_syno

-17 11:04:00

Version: 1.0

for future use ...

-17 11:18:20

Timeout: 60

Job Processing Timeout (in secs)

-17 11:04:00

Agglimit: 10

N. of messages to be processed in a single job/workdir

-17 11:04:00

Mon: 1440:1440:80

list of deqc monitoring thresholds ing:rep:perc; set th to zero to disable check

-17 11:04:00

Options:

-17 11:04:00

Tables: pp2/000320/

BUFR tables subfolder (ie pp1/000320/)

-17 11:04:00

☐ Bufr out

Important ! Set if decoder/converter produces BUFR files

-17 11:04:00

Decom

Description: AMSU-A data -Satid 206, 207, 20

-17 11:04:00

SAPP web administration and monitoring

SAPP Data tracker

Status: completed Deqc: SYNO
Submit
deqc: ttaai sappa02

File Edit View
New
Documents
514
SMRS11 R
AAXX 120
27208 62
3 /// =

Line: 1 Col:
Terminal

Bufr Toolbox

File Options Help

message number 1 subset number 1 Go to msg/subset display bitmap

Section 0 Section 1 Section 2 Section 3 Data Data, bitmaps expanded

Index	Descriptor	Name	Value	Units
0001	001001	WMO BLOCK NUMBER	27	NUMERIC
0002	001002	WMO STATION NUMBER	208	NUMERIC
0003	002001	TYPE OF STATION	1	CODE TABLE 2001 ...
0004	004001	YEAR	2014	
0005	004002	MONTH	5	MON
0006	004003	DAY	12	D
0007	004004	HOUR	6	H
0008	004005	MINUTE	0	MIN
0009	005001	LATITUDE (HIGH ACCURACY)	57.8	DEG
0010	006001	LONGITUDE (HIGH ACCURACY)	35.9	DEG
0011	007001	HEIGHT OF STATION	1.42E2	M
0012	012013	GROUND MINIMUM TEMPERATURE, PAST 12 HOURS	...	K
0013	012015	MINIMUM TEMPERATURE AT 2 M, PAST 12 HOURS	2.78E2	K
0014	012016	MAXIMUM TEMPERATURE AT 2 M, PAST 24 HOURS	...	K
0015	013031	EVAPOTRANSPIRATION	...	KGM-2
0016	014015	NET RADIATION, INTEGRATED OVER 24 HOURS	...	J/M**2
0017	014031	TOTAL SUNSHINE	...	MIN
0018	020062	STATE OF THE GROUND (WITH OR WITHOUT SNOW)	...	CODE TABLE 2006...
0019	020192	SPECIAL PHENOMENA	...	CODE TABLE 2019...
0020	020192	SPECIAL PHENOMENA	...	CODE TABLE 2019...
0021	020192	SPECIAL PHENOMENA	...	CODE TABLE 2019...
0022	020192	SPECIAL PHENOMENA	...	CODE TABLE 2019...
0023	011233	HIGHEST GUST DURING THE 10 MINUTE PERIOD PRECEDING	M/S

next msg rewind file show all next subset

expanded file: /var/tmp/tmpdir/mac/jtmp.6823/741428554 message: 1 subset: 1 of 1 total msgs: 1 filtered: 1

SAPP monitoring

