



EARS-IASI and EARS-NPP concept

RARS Implementation Group – Sixth Meeting
Exeter – 2012





EARS-IASI



EARS-IASI

Design:

- Decentralised processing. Channel selection and data compression using Principal Component Scores to reduce data volume.
- Processor: AAPP (v7.3) and OPS-LRS (v6.0p12) as delivered by NWP SAF.
- Distribution via EUMETCast Ku-Band and GTS.
- Satellites: Metop-A (Metop-B, Metop-C).
- Number of stations: 4 (more planned for Metop-B).

Products, formats:

- **One Level 1c product per pass:**
 - calibrated and navigated IASI observations,
 - combined product containing both Principal Component scores and 366 original IASI Channels,
 - cloud/scene analysis information,
 - BUFR format.

Timeliness:

- 30 minutes (HRPT).
- 60 minutes (FDES).



EARS-IASI (2/2)

Number of Users on EUMETCast:

- **> 100 registered Users.**

Number of products per day:

- **~ 25 files, corresponding to 500 MB.**

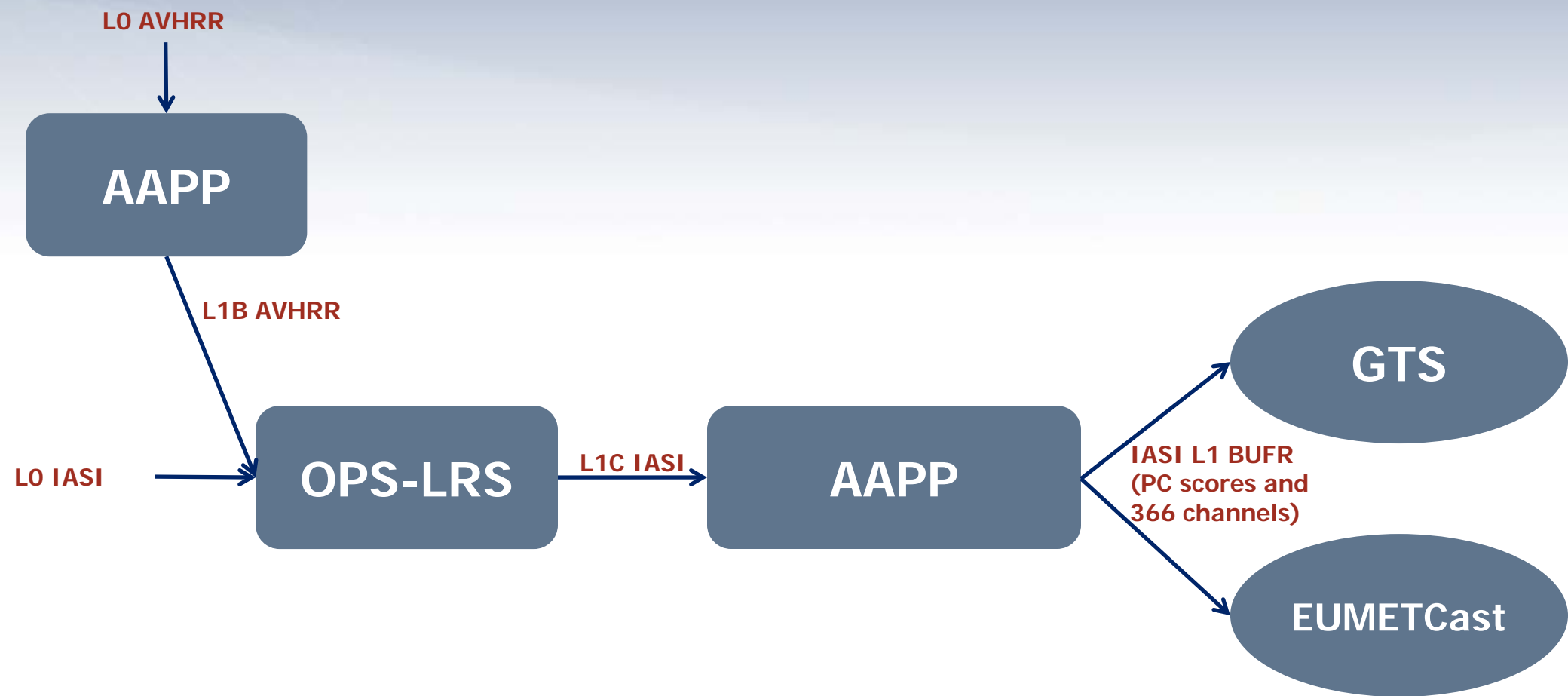
System evolutions in the near future:

- **GTS dissemination to start in November 2012.**
- **Metop-B.**

Product quality monitoring (under development):

- **NWP-SAF product monitoring (comparison with global data and local products, warning messages, etc.). Details to be agreed.**
- **Statistics + inter-comparisons at EUMETSAT.**

Product Processing



Daily Data Volume per Service (EUMETCast Ku-Band - October 2012)

Service	Number of stations	Number of satellites	Total number of passes	Daily volume (MB)
EARS-ATOVS	15	6	420	625
EARS-AVHRR	7	2	28 (630 segments)	1400
EARS-ASCAT	7	1	37	76
EARS-IASI	4	1	25	500
EARS-NWC	7	2	28 (630 segments)	800

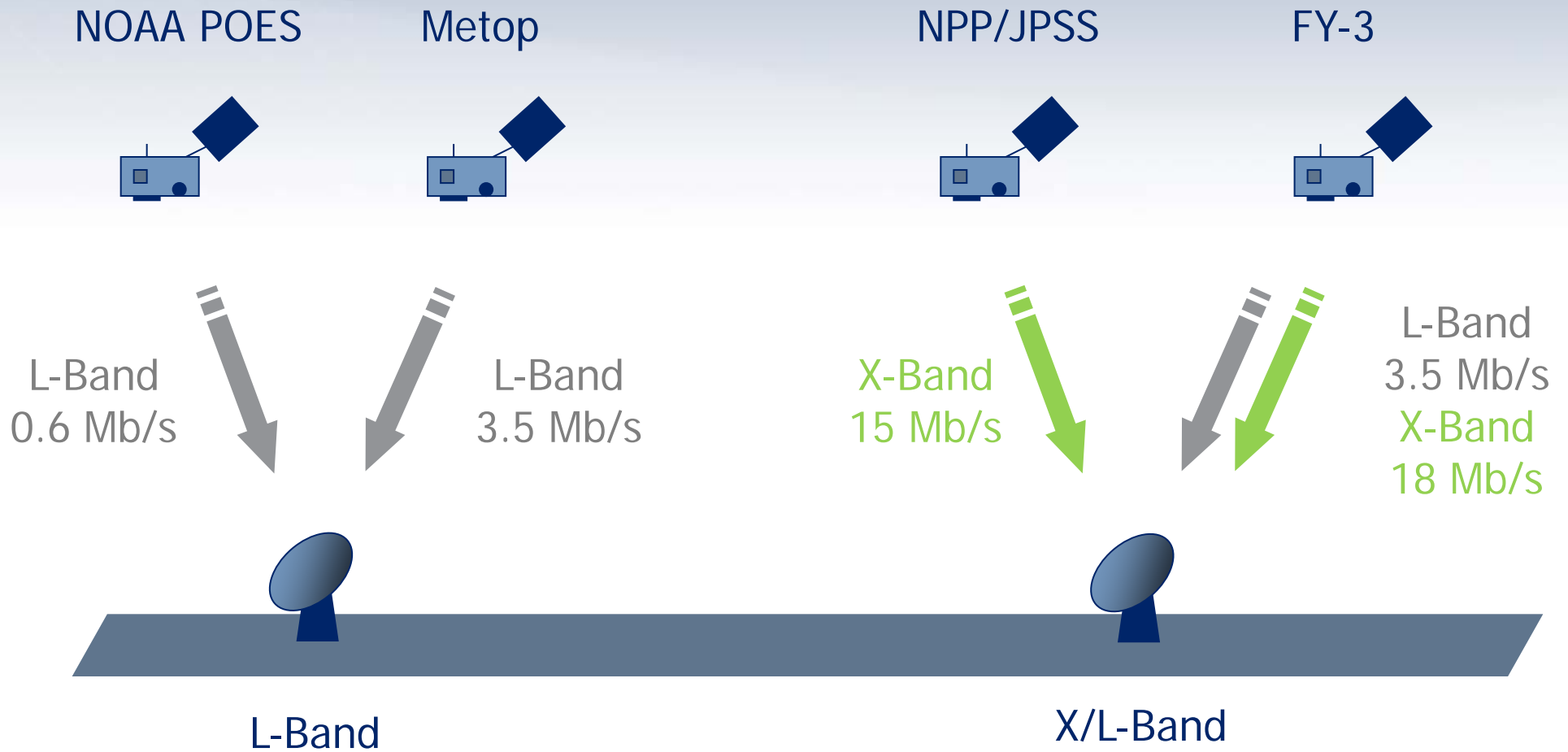


EARS-NPP



Direct Readout Reception

Supporting NOAA POES, Metop, NPP/JPSS, FY3

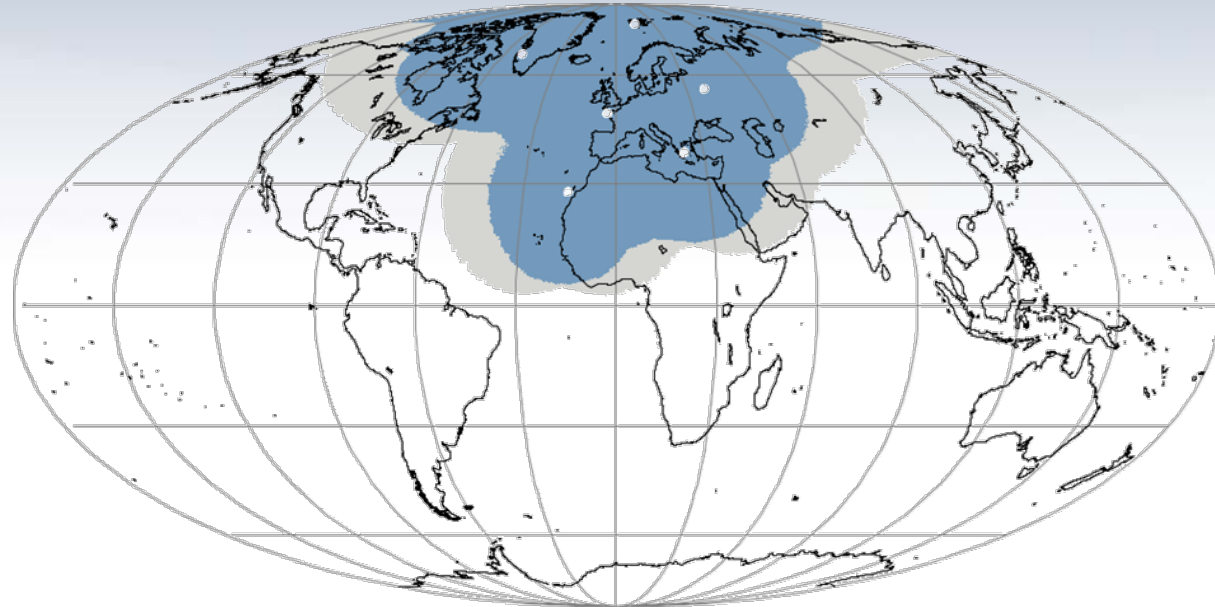




EARS – New Regional Suomi NPP Services

Services	
EARS-ATOVS	L1A/C/D
EARS-ASCAT	L2 Winds
EARS-AVHRR	L0
EARS-IASI	L1C + PCS
EARS-NWC	L2 Clouds
EARS-ATMS	SDR (L1C)
EARS-CrIS	SDR (L1C)
EARS-VIIRS	SDR (L1C)

Initial Suomi NPP Coverage



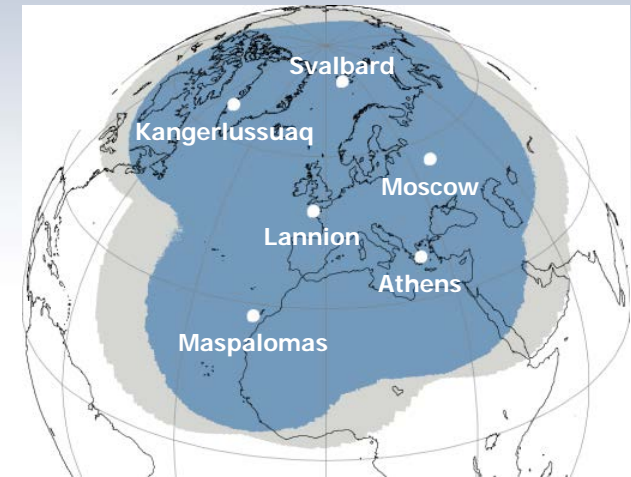
Satellites: NOAA POES
Metop
Suomi NPP



EARS-NPP

Common part

- Geographical coverage:
 - 6 core European stations initially.Other EARS stations to be added if and when NPP data become available.
- Product processing:
 - CSPP/AAPP, as provided by the CIMSS/NWP-SAF, configured and run by EUMETSAT.



EARS-NPP

EARS-ATMS

- Product Segmentation: one file per station pass.
- Products via EUMETCast (Ku-Band Europe):
 - SDR (Level 1),
 - all 22 channels,
 - all FOV,
 - data on original instrument grid,
 - BUFR format.
- Timeliness via EUMETCast: 30 minutes.
- Products via GTS/RMDCN: As for EUMETCast.

EARS-NPP

EARS-CrIS

- Product Segmentation: one file per station pass.
- Products via EUMETCast (Ku-Band Europe):
 - SDR (Level 1),
 - 399 channels out of 1305,
 - all FOV,
 - data on original instrument grid,
 - BUFR format.
- Timeliness via EUMETCast: 30 minutes.
- Products via GTS/RMDCN: As for EUMETCast.

EARS-NPP

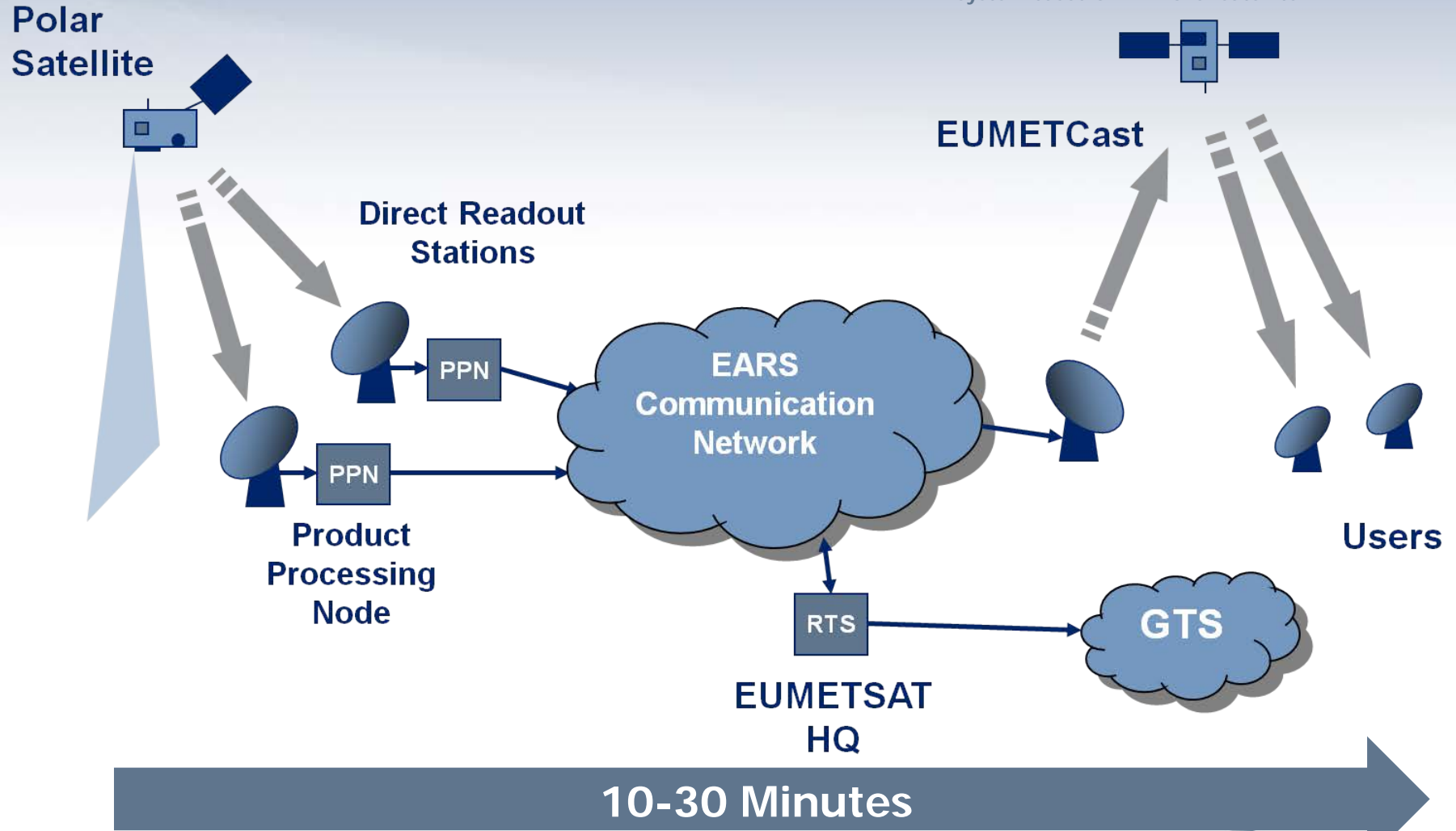
EARS-VIIRS

- Product Segmentation: segmented. Duplicates removed.
- Products via EUMETCast (Ku-Band Europe):
 - SDR (Level 1), geolocation on tie-points,
 - all 16 M-Band channels,
 - HDF5 format,
 - bzip2 compressed.
- Timeliness via EUMETCast: 15 minutes.
- Products via GTS/RMDCN: None.

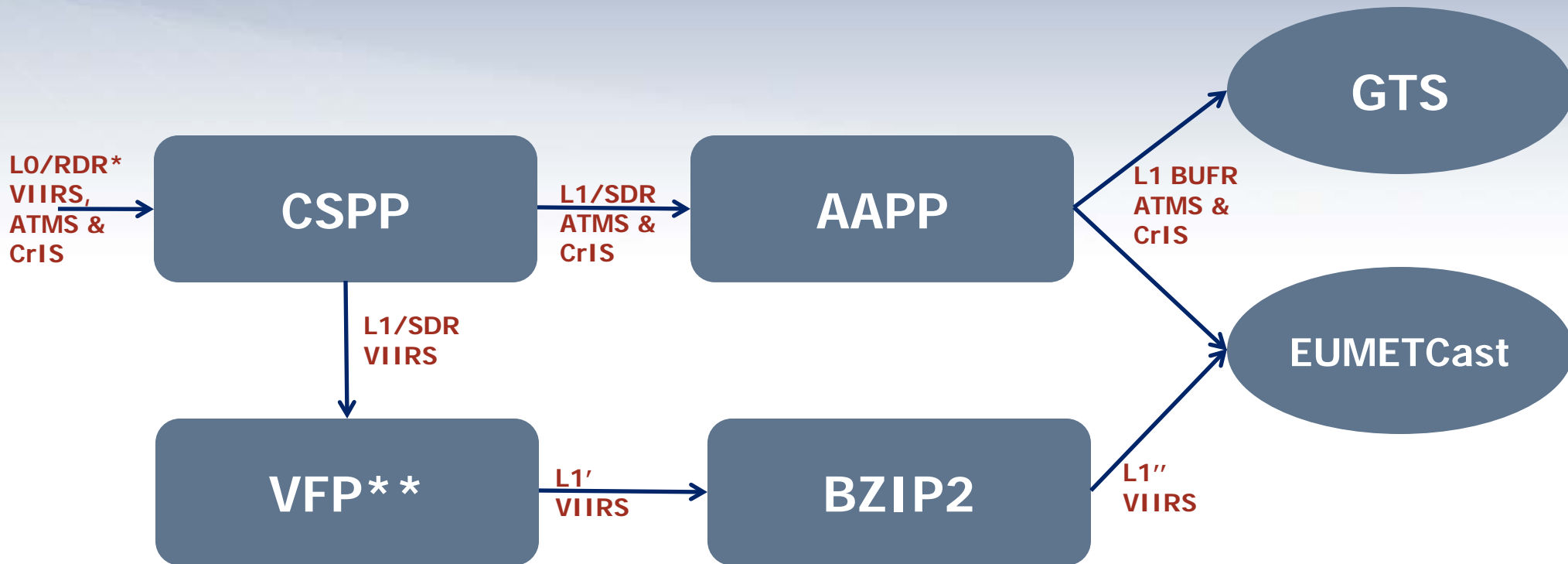


Building on EARS infrastructure

EUMETCast is EUMETSAT's data dissemination system based on DVB over satellite



Product Processing



*: using RT-STPS to produce RDR per instrument from CADU file containing all instruments.

**VFP: VIIRS Formatting Package (computes geolocation on tie-points, scale radiances and segments data)



Product Quality Monitoring Planned for EAR-NPP

EARS-ATMS and EARS-CrIS:

- Product quality indicator collected during the processing and recorded (statistics, time series...).
- Comparison with global data and independent local products (offline).

EARS-VIIRS:

- As for EARS-ATMS and EARS-CrIS plus:
- VIIRS tie-point and interpolation: geolocation errors to be recorded.

Involvement of the SAFs (TBC):

- NWP-SAF for EARS-ATMS and EARS-CrIS.
- NWC-SAF for EARS-VIIRS.



Daily Data Volume per Service (October 2012)

Estimates for ATMS, CrIS and VIIRS

Service	Number of stations	Number of satellites	Total number of passes	Daily volume
EARS-ATOVS	15	6	420	625
EARS-AVHRR	7	2	28 (630 segments)	1400
EARS-ASCAT	7	1	37	76
EARS-IASI	4	1	25	500
EARS-NWC	7	2	28 (630 segments)	800
EARS-ATMS	6	1	30	45 MB
EARS-CrIS	6	1	30	300 MB
EARS-VIIRS	6	1	14 (300 segments)	> 11GB



Early Access to Regional NPP Services

- Early access to the three Regional NPP Services is expected as follows:
 - EARS-ATMS starting in Q4 2012
 - EARS-CrIS starting in Q4 2012, initially without VIIRS Cloud information
 - EARS-VIIRS starting in Q1 2013