OPERATIONAL IMPLEMENTATION OF SUOMI NPP REGIONAL SERVICES AT EUMETSAT
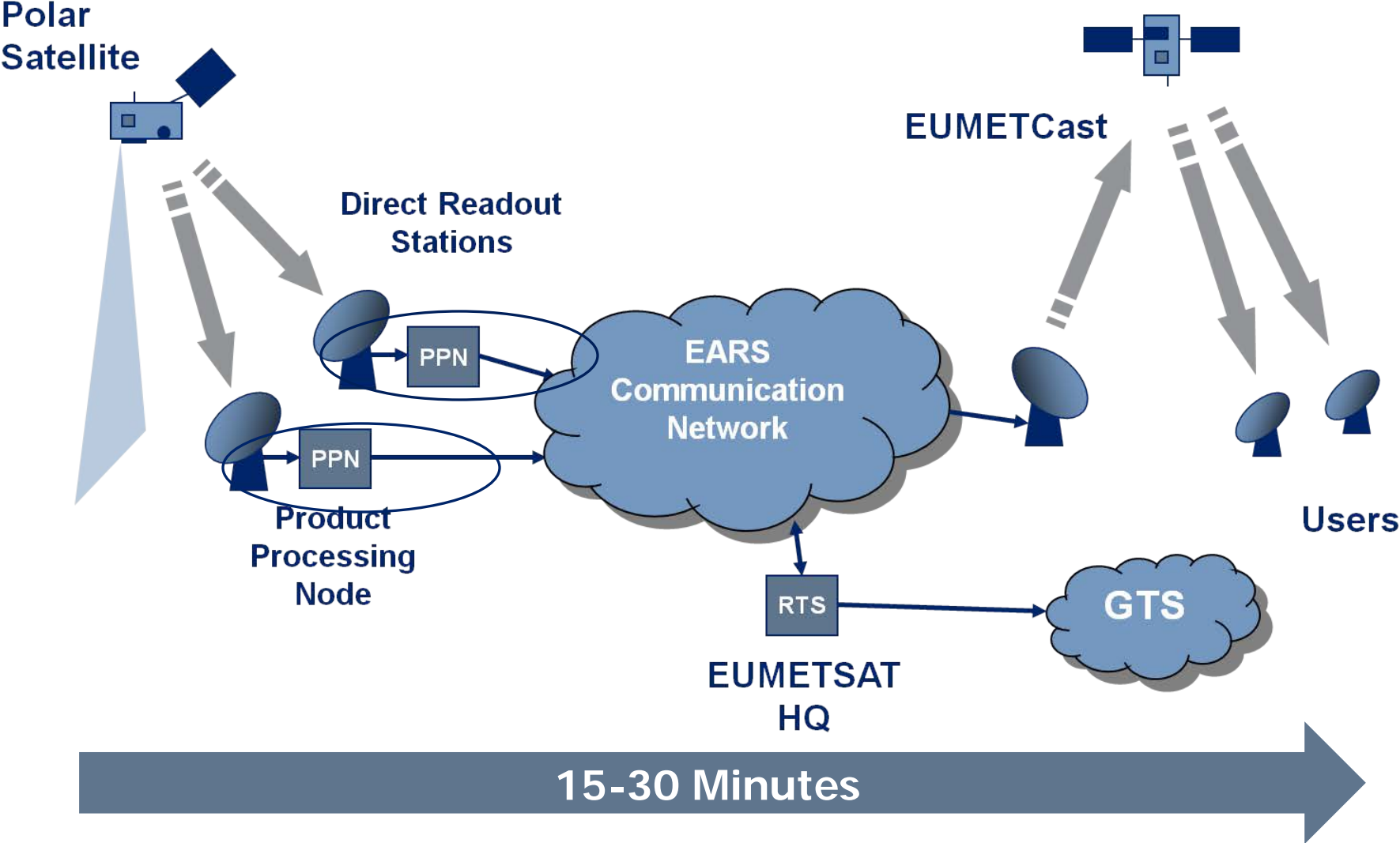
ESTER ROJO

EUMETSAT

CSPP / IMAPP
Users' Group Meeting
14-16 April 2015 | EUMETSAT
Darmstadt, Germany

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EARS – System Overview

Product Processing Nodes

- Inclusion of S-NPP,IASI,NWC ➡ Move from Solaris to Linux in 2012.

- IBM x3690 X5
  - RHEL 6.0, 64 bit
  - 20 cores (2x Intel Xeon e7-4870 @2.4 GHz 10 cores each with 2 threads each)
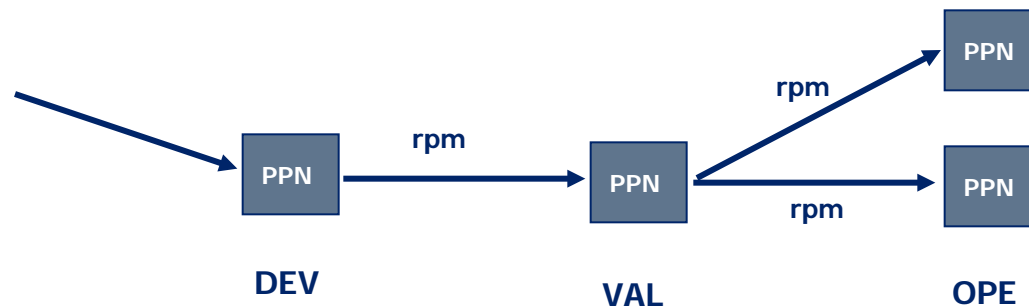 - 64 GB RAM

Product Processing Nodes

- ## Software running on PPNs:

  - CSPP (CIMSS/SSEC)

  - RT-STPS (NASA DRL)

  - AAPP, OPS-LRS (NWP-SAF)

  - PPS (NWC-SAF)

  - FY3CL0pp + FY3CL1pp (CMA)

  - CVIIRS, EFTS agents, GEMS, CODEM, HRES, KAI (EUMETSAT)

- ## Installation process:

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Product Processing Nodes

- Important features of SW packages:
  - RHEL compatible
  - Self contained or no particular lib version required
  - Simple, well documented installation and configuration
  - Responsive user support
  - Robust for operational use
  - Efficient resource utilization (RAM, CPU)
  - Processing time (multithread preferred)

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CSPP implementation

- ATMS, CrIS operational since May 2013, VIIRS since October 2014

- Currently running CSPP SDR 2.1

- Installation as per release package, no compilation needed, all scripts unchanged.

- No Internet connection on PPNs: not possible to retrieve ancillary data with scripts provided.

  Ftp server set up by CIMSS. Ancillary data automatically retrieved via gateway server at EUMETSAT.

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CSPP implementation

- ATMS/CrIS processing based on full station pass
- VIIRS processing based on 6 minutes segments

	Processing Time	#cores	Required RAM
ATMS (15-20min)	1-2 min	1	16 GB
CrIS (15-20min)	5-6 min	8	16 GB
VIIRS (6 min)	3-4 min	4-6	48-64 GB

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ATMS/CrIS processing

Raw station segments (3 min)

CAT

Concatenated station pass (CADU)

RT-STPS

ATMS RDR — CrIS RDR

CSPP — CSPP

ATMS SDR — CrIS SDR

AAPP — AAPP

ATMS SDR BUFR — CrIS SDR BUFR 399channels

CAT — CAT

EARS -ATMS — EARS -CrIS

EUMETCast/GTS

Timeliness 30 minutes

EUMETCast/GTS

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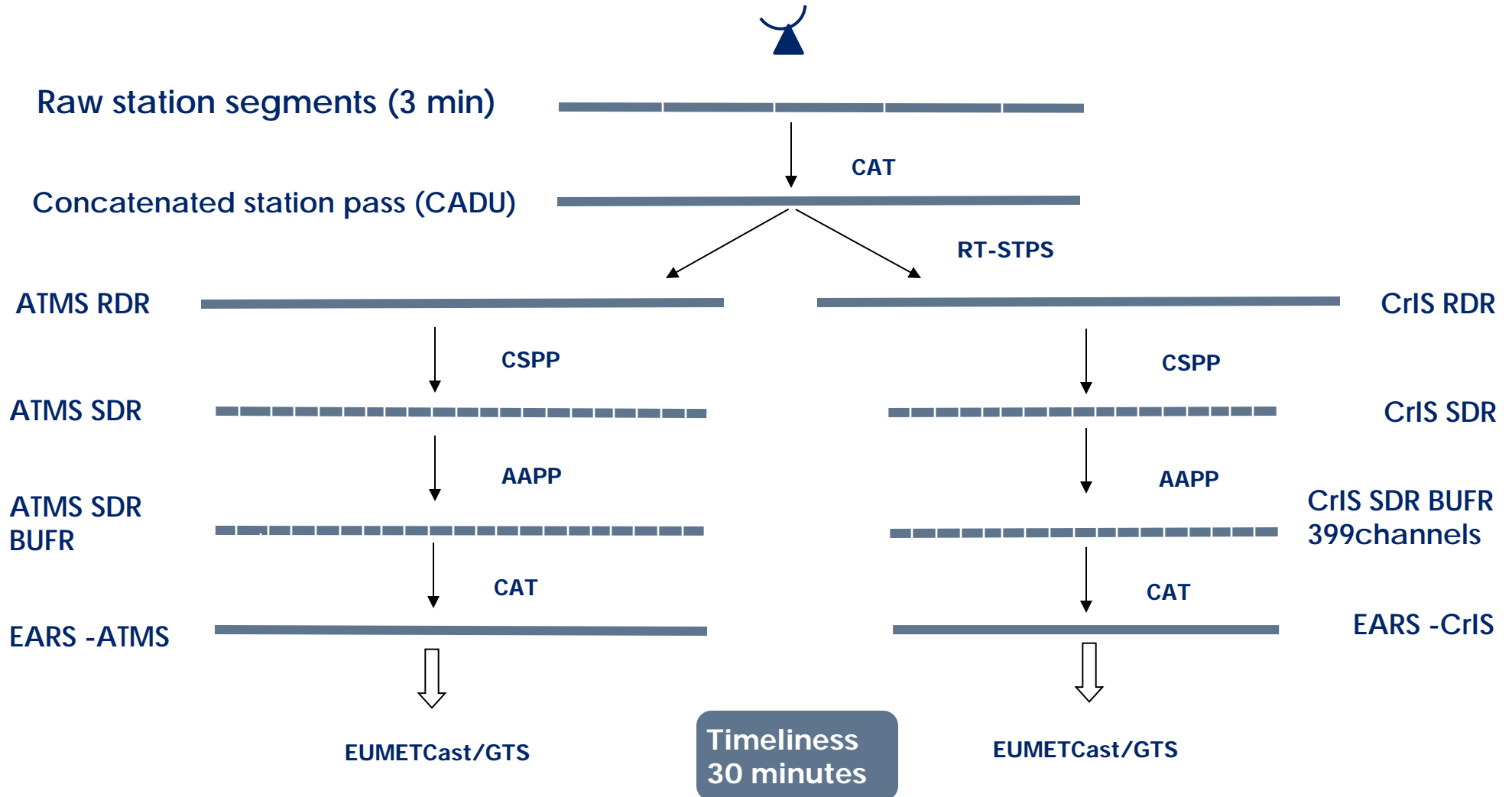
VIIRS processing

- Original VIIRS SDR HDF5 too large for dissemination (limited bandwidth in EUMETCast)

- New Compact VIIRS SDR format developed (see Stephan Zinke's talk)

- Removal of duplicate granules

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VIIRS SDR Granule Selection

Svalbard

Lannion

Maspalomas

**EUMETCast
User Station**

VIIRS processing

Raw station segments (3 min)

CAT

Concatenated segments (CADU)

RT-STPS +CSPP + CVIIRS

Compact VIIRS SDR granules

CODEM +bzip2

EARS VIIRS

EUMETCast

15 minutes

1- 15 min
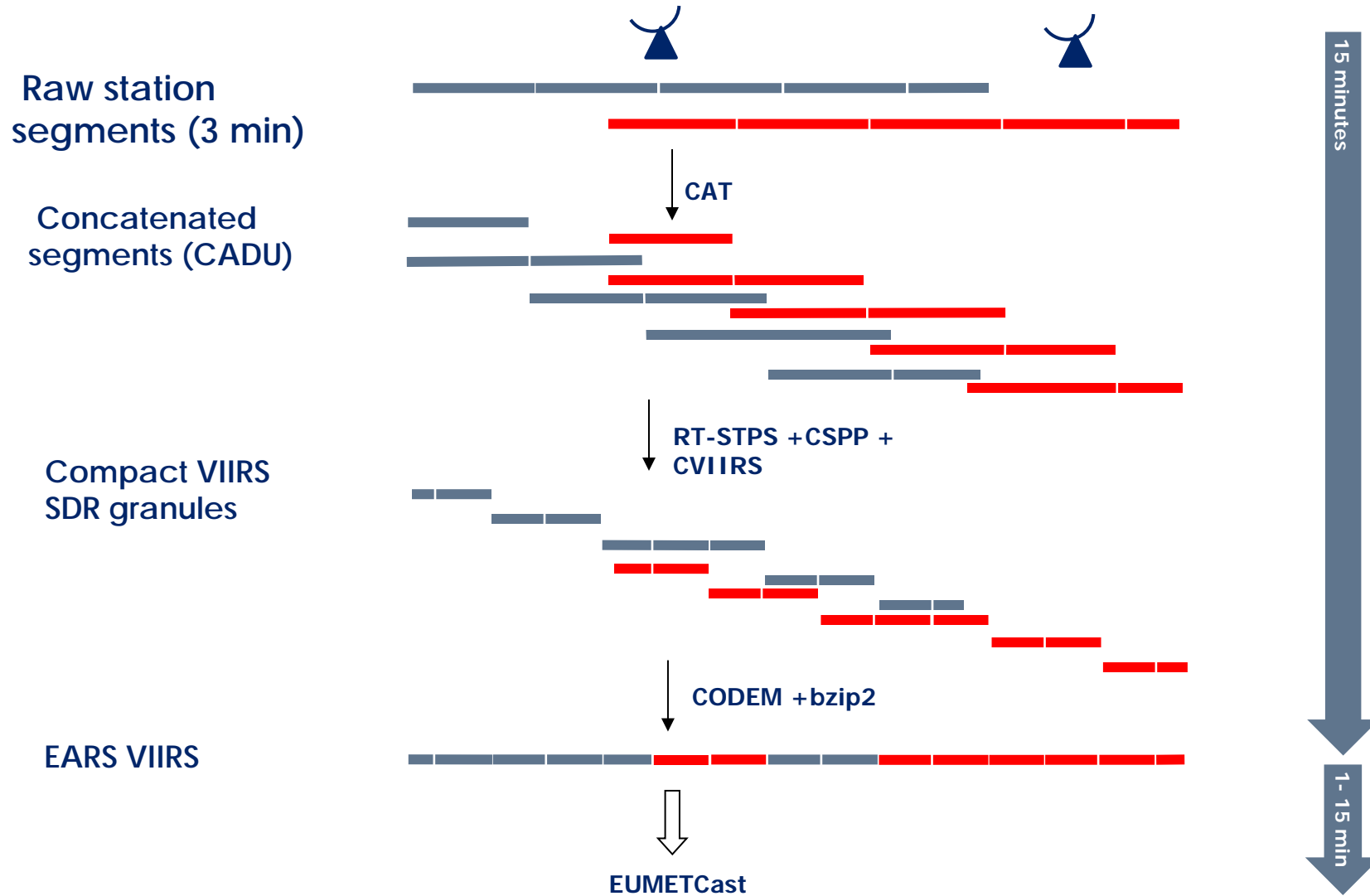
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Operational Monitoring

- Monitoring done at EUMETSAT HQ.
- Expectations based on schedule files received from stations.
- Parsing log files to track processing sequence.
- Alarms raised in Control Room when
  - Expectations not met
  - Link outage
  - HW problem
  - SW problem

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GEMS monitoring

SMART monitoring

Central Operations Report

- The Central Operations Reports are issued half-yearly. They provide summary performance information about the main operational data services we provide to the user community.
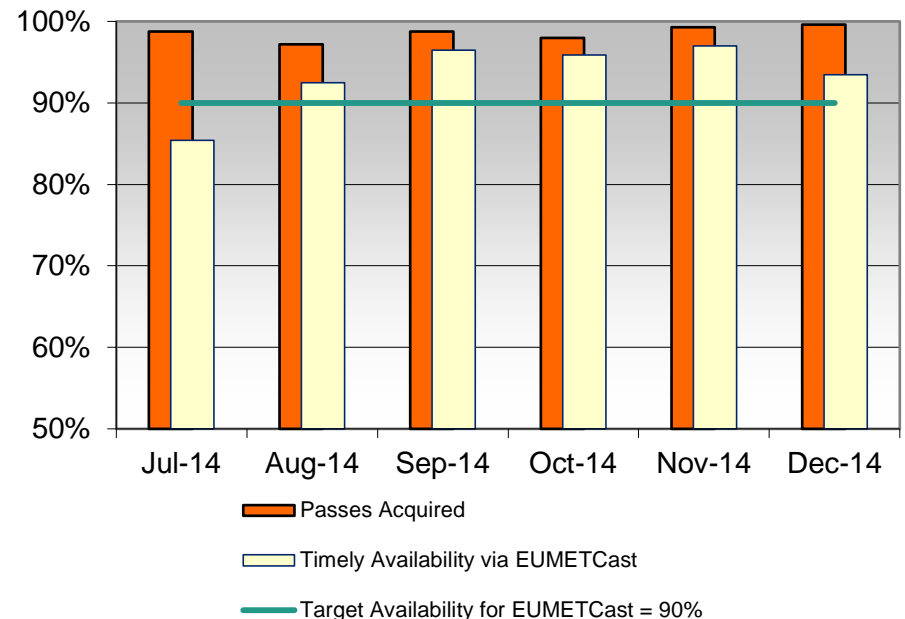
Regional Data Service → EARS-ATMS

This service provides SDRs derived from the data produced by the ATMS (Advanced Technology Microwave Sounder) instrument onboard NASA-NOAA's Suomi NPP satellite.

Availability shown on the chart is that of the BUFR-formatted SDRs received by users (relative to scheduled passes).

Events which impacted availability:

July :   The added VIIRS dataflow (reported in the previous issue) continued to impact the timeliness of ATMS data until the problem was resolved in July by improved network load-balancing.

Legend:
- Passes Acquired
- Timely Availability via EUMETCast
- Target Availability for EUMETCast = 90%

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Questions

Questions?

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