1.12 Status and Evolution of the RARS SEWA Project

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Agenda

Status and Evolution of the RARS SEWA project (20'):

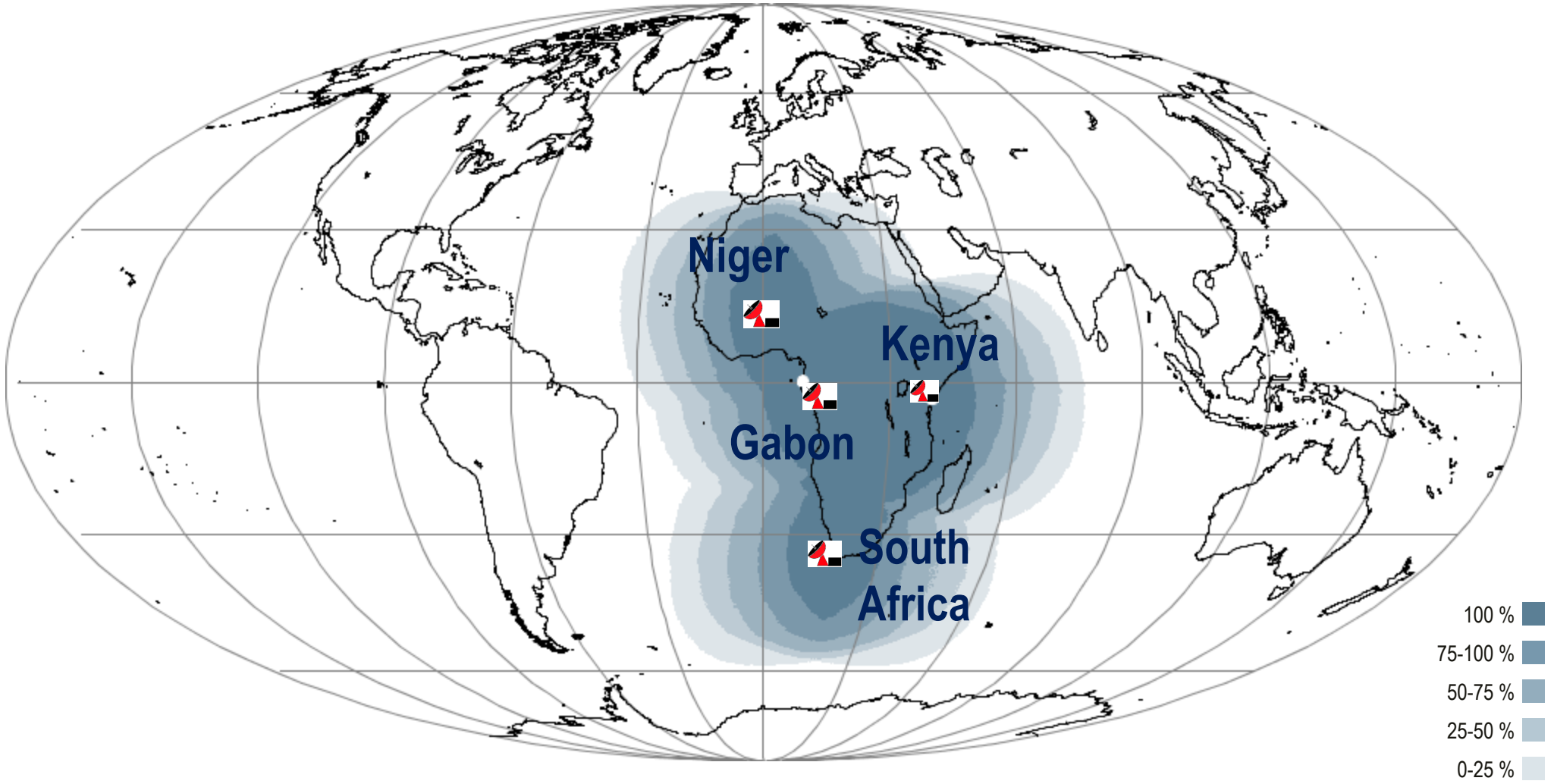
- Before SEWA, SAWIDRA
- SEWA Scope
- SEWA Phases
- Technical Approach for Upgrade of RARS Stations
- SEWA Regional Services

Before SEWA, SAWIDRA

- The European Commission approved in 2013 the ACP-EU SAWIDRA (Satellite and Weather Information for Disaster Resilience in Africa) project.
- The SAWIDRA project had a strict deadline, it was completed in Q2/2022 with no further budget available.
- Since 2023, maintenance has stopped and the stations have become non-functional.
- As a result, satellite observations from the RARS sites are no longer feeding the National Meteorological and Hydrological Services (NMHSs) and Regional Climate Centres (RCCs) for the issuance of early warnings. This undermines the overall objective of SAWIDRA, which was to support disaster risk reduction (DRR) and disaster risk management (DRM) frameworks.

RARS Ground Stations

The 4 stations built during SAWIDRA composing the Africa Regional Advanced Retransmission Services (RARS) are Gabon, Kenya, Niger and South Africa.



SEWA Scope for RARS stations

- "Space for Early Warning in Africa" – EU-funded programme helping African institutions use satellite data for early warnings.
- Scope:
  - Upgrade the four RARS stations.
  - Strengthen capacity in Africa.
  - Share RARS regional services with National Meteorological and Hydrological Services (NMHSs) and Regional Climate Centres (RCCs) to support the issuance of early warnings.
  - Support the implementation of a comprehensive African disaster risk reduction (DRR) and disaster risk management (DRM) framework.

RARS Upgrades: Three-Phase Delivery Structure

Phase I (2025–2026): Foundations

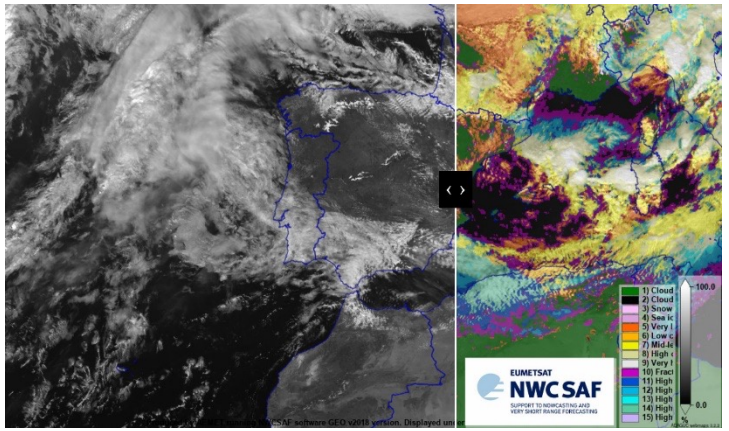
Governance, baselines, training framework

Phase II (2026–2028): Implementation

RARS upgrades, regional training, testbeds, early operational demonstrations

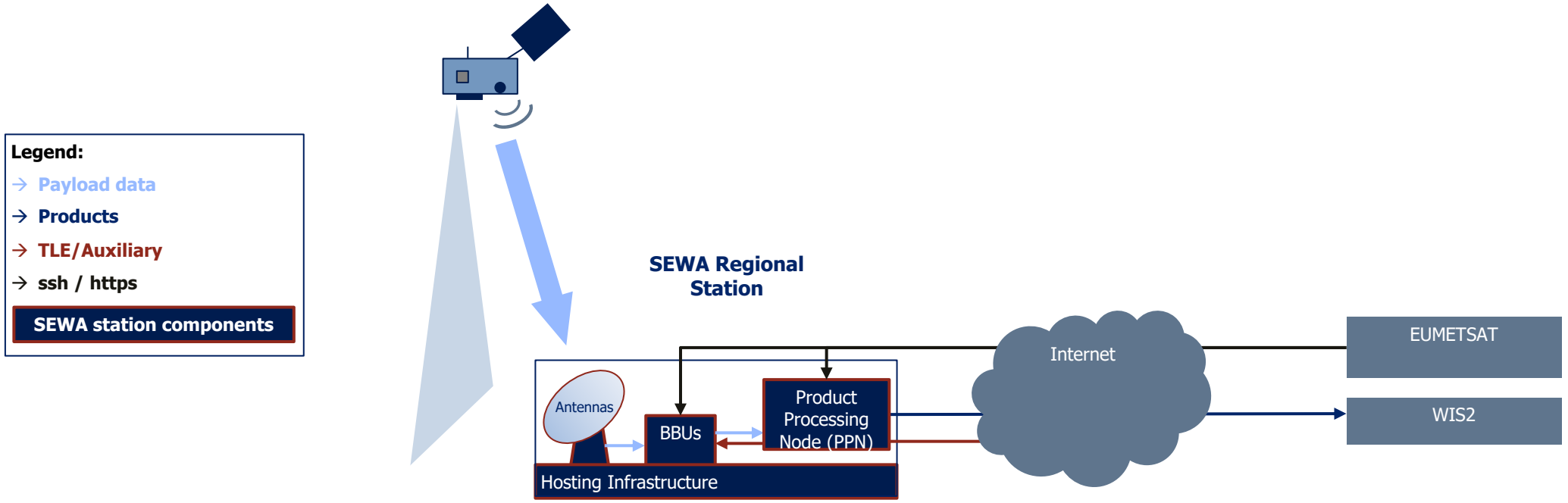
Phase III (2028–2029): Closure & Transfer

Consolidation, feedback loops, long-term operations, asset transfer



SEWA is completing Phase I and entering full implementation.

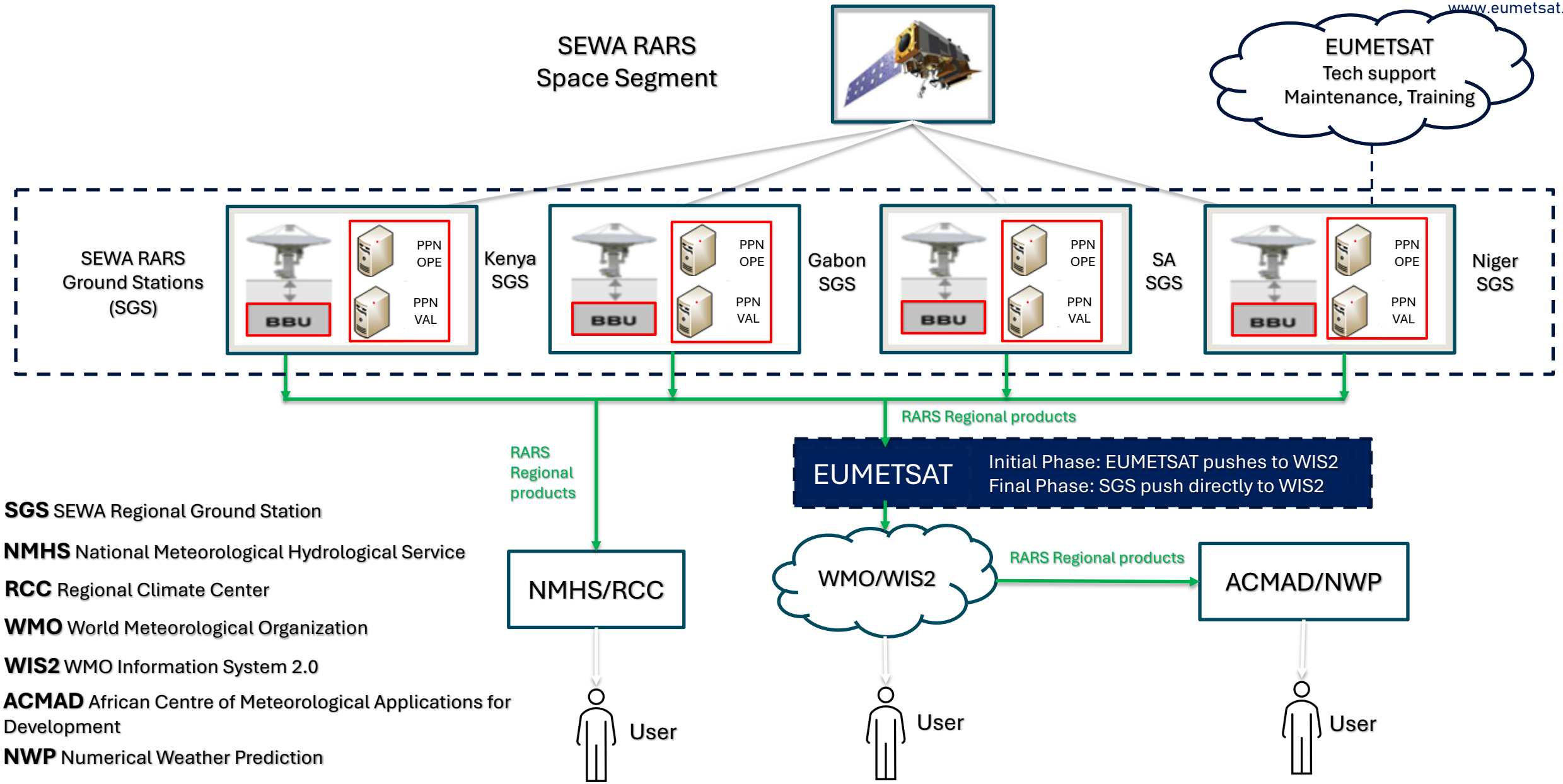
Technical Approach for RARS Upgrades



The technical approach used for the RARS stations upgrade is to re-use EUMETSAT design when possible:

- BBU: Based Band Unit for payload data acquisition.
- PPN (Product Processing Nodes): 2 new servers to be procured and shipped to the SEWA station, using the same software as EUMETSAT PPN.
- Dissemination: locally and WIS2 (DBNET)
- Remote maintenance and support by EUMETSAT

Elements to be Upgraded as part of SEWA



SGS SEWA Regional Ground Station

NMHS National Meteorological Hydrological Service

RCC Regional Climate Center

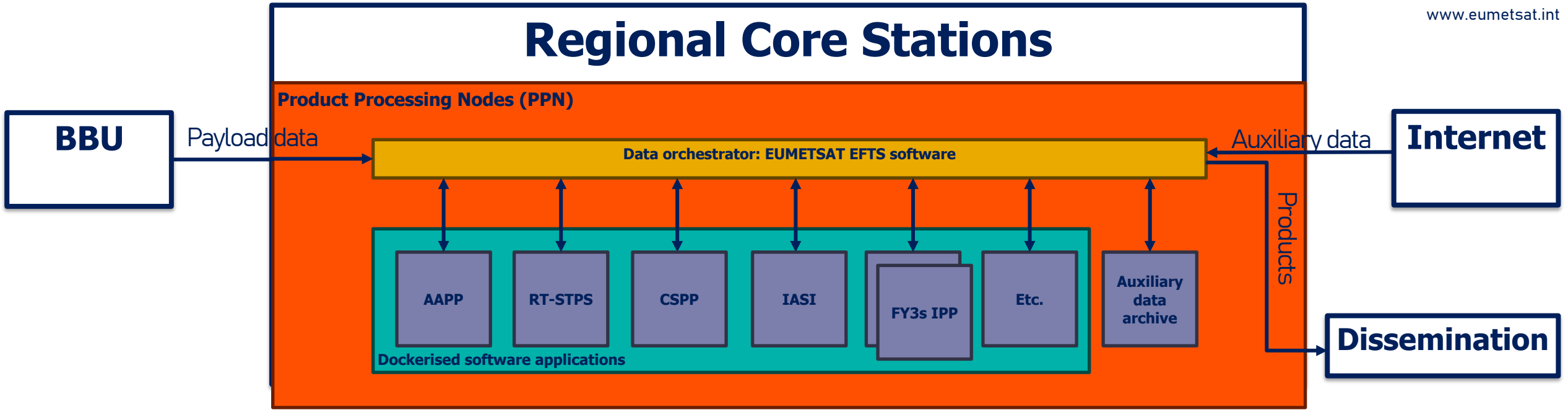
WMO World Meteorological Organization

WIS2 WMO Information System 2.0

ACMAD African Centre of Meteorological Applications for Development

NWP Numerical Weather Prediction

Product Processing Nodes (PPN)



The Product Processing Nodes functions are:

- Data Processing: Generate products for the FY3, METOP and NOAA satellites families.
- Orchestration: Orchestrate generation of products via docker containers, auxiliary data, and products dissemination to EUMETCast.
- Software applications to run in docker

Hardware and Software Provision Strategy

Phase II (2026–2028): Implementation

- EUMETSAT to conduct BBU and PPN hardware procurement, that will be shipped and installed in SEWA stations.
- BBU: software maintenance externalised, under EUMETSAT.
- PPN: EUMETSAT to provide software layer.
- Trainings organised for knowledge transfer.

Phase III (2028–2029): Closure & Transfer

- Ownership and operations to be handed from EUMETSAT to SEWA beneficiaries.
- SEWA beneficiaries to take over hardware and software maintenance.

SEWA Regional Services

SERVICE/ DB STATION	ATOVS	AVHRR	IASI L1/L2	ATMS	CrIS	VIIRS	VASS	MERSI	MWRI
Gabon, Libreville	MetB MetC	MetB MetC	MetB MetC	SNPP N20 N21	N20 N21	SNPP N20 N21	FY-3D FY-3E	FY-3D	FY-3D
Kenya, Nairobi	MetB MetC	MetB MetC	MetB MetC	SNPP N20 N21	N20 N21	SNPP N20 N21	FY-3D FY-3E	FY-3D	FY-3D
Niger, Niamey	MetB MetC	MetB MetC	MetB MetC	SNPP N20 N21	N20 N21	SNPP N20 N21	FY-3D FY-3E	FY-3D	FY-3D
South Africa, Hartebeesthoek	MetB MetC	MetB MetC	MetB MetC	SNPP N20 N21	N20 N21	SNPP N20 N21	FY-3D FY-3E	FY-3D	FY-3D

Thank you!

Questions are welcome.