STATUS OF –RARS Africa STATIONS Network

a contribution to :

The Community Satellite Processing Package (CSPP) Users' Group Meeting

19-21 May 2026

Darmstadt, Germany

by

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ACMAD,

4 RARS Stations installed /SAWIDRA

Kenya RARS station

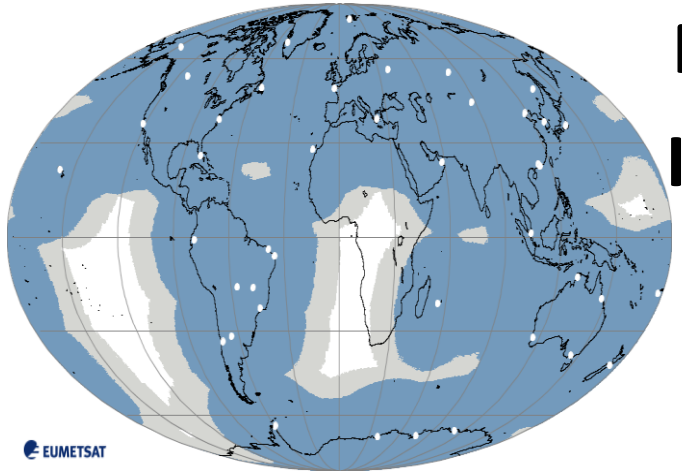
Gabon RARS station

SANSA RARS station

Niger RARS station

RARS Africa Network Impact

BEFORE



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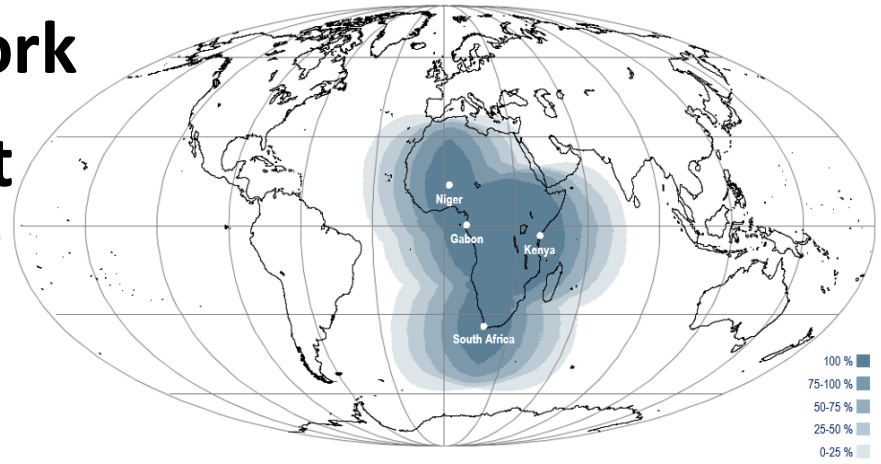
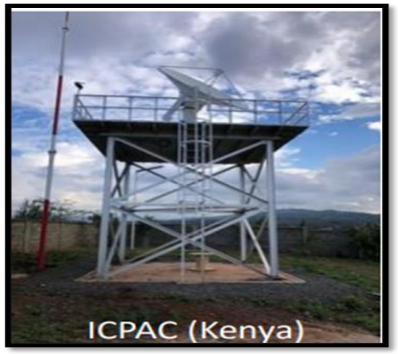




STATUS OF –RARS Africa STATIONS

Facilities /services

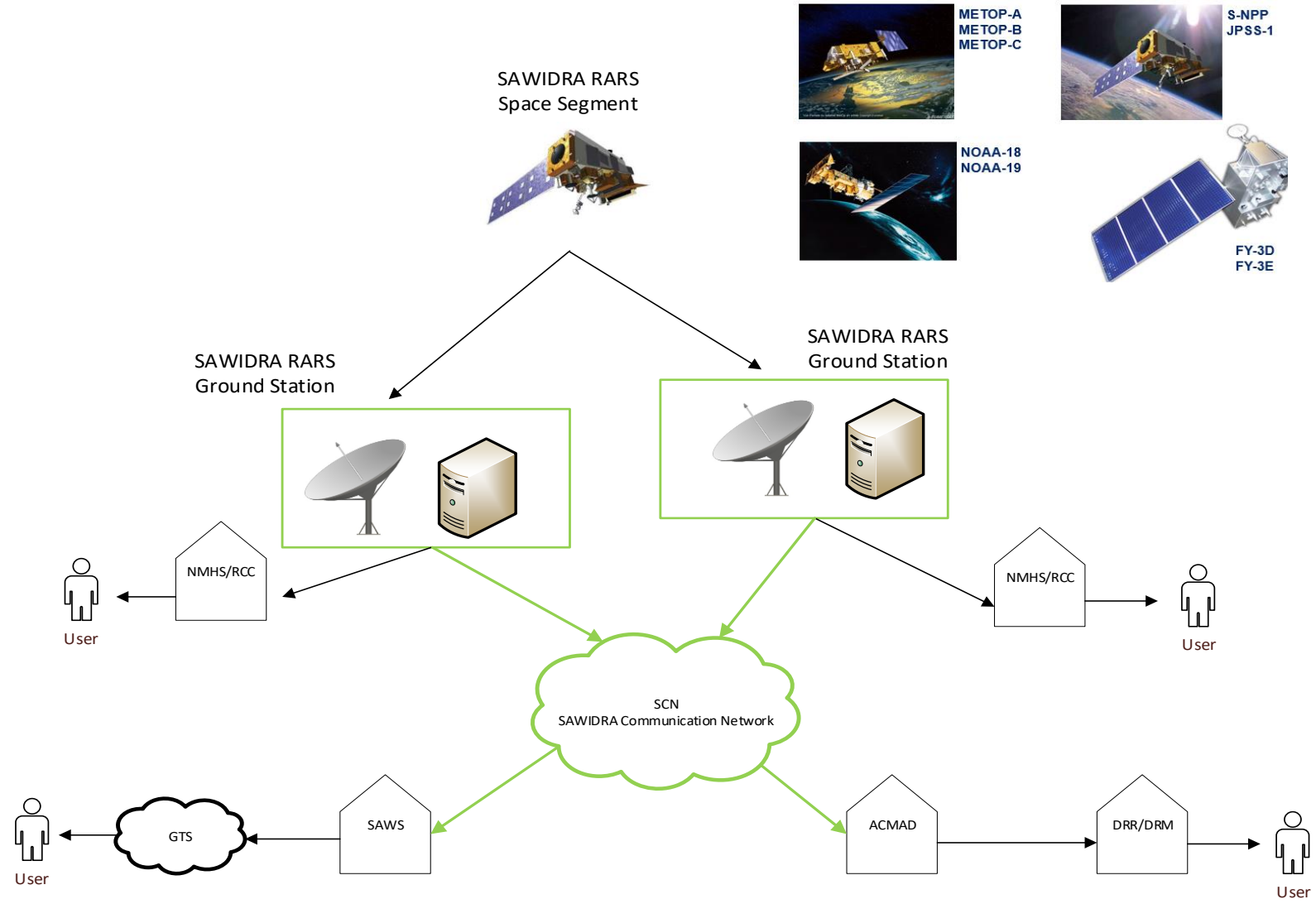


Figure 1 provides a system overview of SAWIDRA RARS (in green colour) ground segment and the external entities it is connected with.

Negociations and impacts on Design and schedule

Cost estimate:

- Cost :2 545 000 Euros
- **Acquisition method**: International Call for Bid (ICB)
- **General Procurement Notice**, Publication date: 09 November 2017
- **The Selected tenderer is**:

SOLETOP Co., Ltd
Expo-ro 409,
Munji-dong, Yuseong-gu, Daejon 34051,
Korea
Tel. : +82 42 867 7440 / +82 42 867 7445
Email: zip0704@soletop.com

- **Amount of the offer**: 2 990 000 Euros

Status (From SAWIDRA to SEWA):

1. 4 RARS antenna installed validated and are ready for operations
2. waranty maintenance period 3 years up to 2023
3. D300 instatalled but software testing will complete in 2021. D200 are still operational. Negociation will leave D200 to hosting sites even if D300 installed.
4. Sites Acceptance Tests validated by EUMETSAT and ACMAD in Dec 2020.
5. A dedicated internet connection of at least 512Kb/s is needed between ACMAD which is a GTS point connected to the RTH/Niamey and AGRHYMET, AGEOS and Libreville Airport, ICPAC and Nairobi Airport to facilitate Realtime or near real-time exchange for global NWP Centers. WIS2.0 is the current alternative,

Discussion points covered

1. Inclusion of RARS in WMO DBNet is finilized (ACMAD, EUMETSAT, WMO, ASECNA…)
2. Ensure maintenance and regular operation cost of the RARS stations (ACMAD, EUMETSAT, WMO, SOLETOP and partners)
3. Monitor RARS inputs and impacts on global and regional NWP (ECMWF, NCEP, DWD, UK Met, METEO France……)
4. Build capacity for African scientists on NWP with emphasis on satellite meteorology and advanced data assimilation systems for NWP
5. Build an african IT team on the maintenance of the stations
6. Develop the wide range of other applications meeting the required in hydrology, climatology, oceanography, disaster prevention….

Now, satellite data produce **more than 100 different parameters**. They range from **vertical humidity profiles** and **sea-surface temperatures**, to **cloud top heights**, **snow cover** and **ozone distribution**. They are today the most **significant input to numerical weather prediction models** and other applications. Total inputs for numerical models on a single **day exceed several million**. The overwhelming **improvement in numerical weather prediction models during the last 20 years is due to the input of satellite data**, notwithstanding advances in theoretical meteorology and computer technology.

SAWIDRA RARS integration into WMO DBNet

1. SAWIDRA RARS integration into WMO DBNet

The following table provides relevant information for the inclusion of the SAWIDRA Ground Station into the WMO Direct Broadcast Network.

-SAWIDRA Direct Broadcast Stations

Area	Regional DBNET Centre	HRPT Station Name	Lat.	Long.	Operator	DBNET Station Identifier	Processing centre ID Originating Centre (Code Tables C-1 and C-11)	Sub-centre ID Originating Sub-centre (Code Table C-12)	Location Indicator in GTS Bulletin (CCCC)	Status of operational or planned services as of January 2018 (PL: planned; RX: Receiving; TS: in test; OP: DBNet operational; OS: out of service; NC: No contact; blank if not planned)					
										NOAA/ ATOVS	Metop/ ATOVS	Metop/ IASI	SNPP/ CrIS	SNPP/ ATMS	FY3/ VASS
AFRICA DBRTN	South Africa SAWS	Niamey	21.30° N	15.86° W	ACMAD	nia	XXX	XXX	XXX	PL	PL	PL	PL	PL	PL
		Libreville	43.07° N	89.40° W	AGEOS	lib	XXX	XXX	XXX	PL	PL	PL	PL	PL	PL
		Nairobi	25.73° N	80.15° W	ICPAC	nai	XXX	XXX	XXX	PL	PL	PL	PL	PL	PL
		Pretoria	18.20° N	67.14° W	SANSA	pre	XXX	XXX	XXX	PL	PL	PL	PL	PL	PL

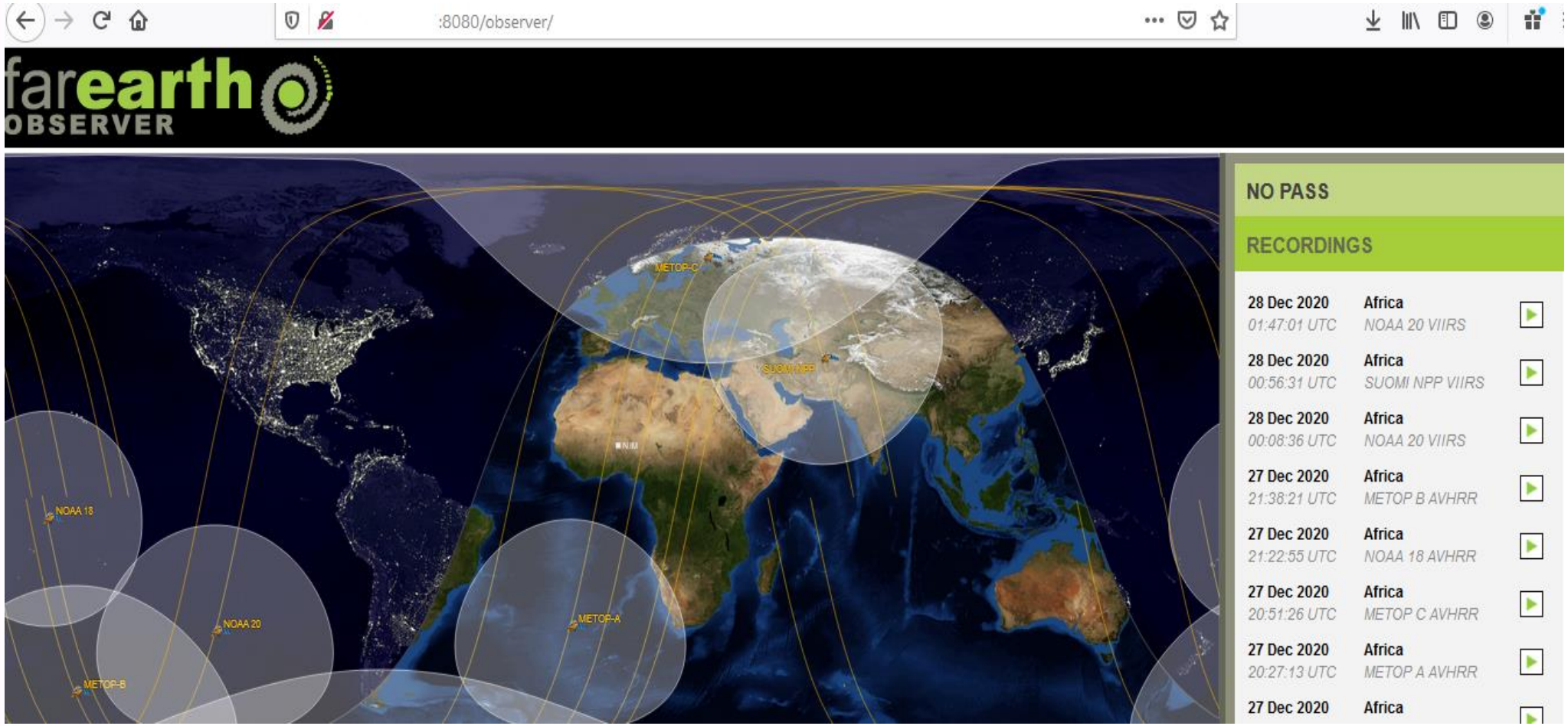
From SAWIDRA to SEWA

- Current status of outdoor and indoor infrastructure (together with photographs of both the indoor and outdoor equipment).

  - Outdoor unit were operational up till 2023, a site survey will confirm this status

  - Indoor infrastructure may be replaced as per age and evolving technology, Some hardware challenges observed in Gabon and all sites experienced UPS challenges.

FAREARTH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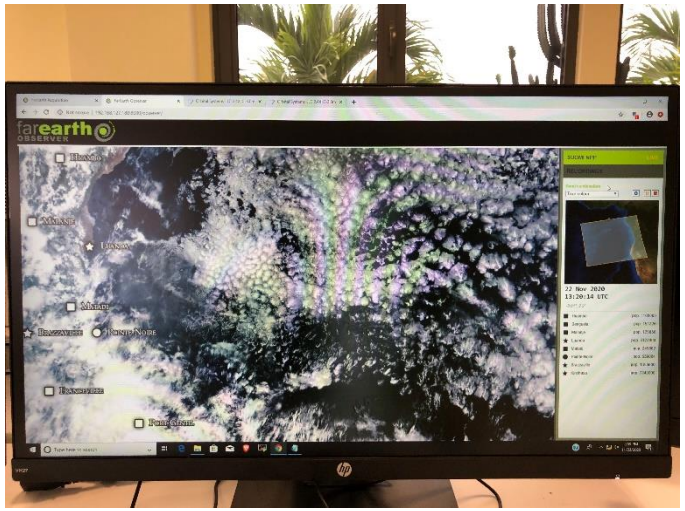
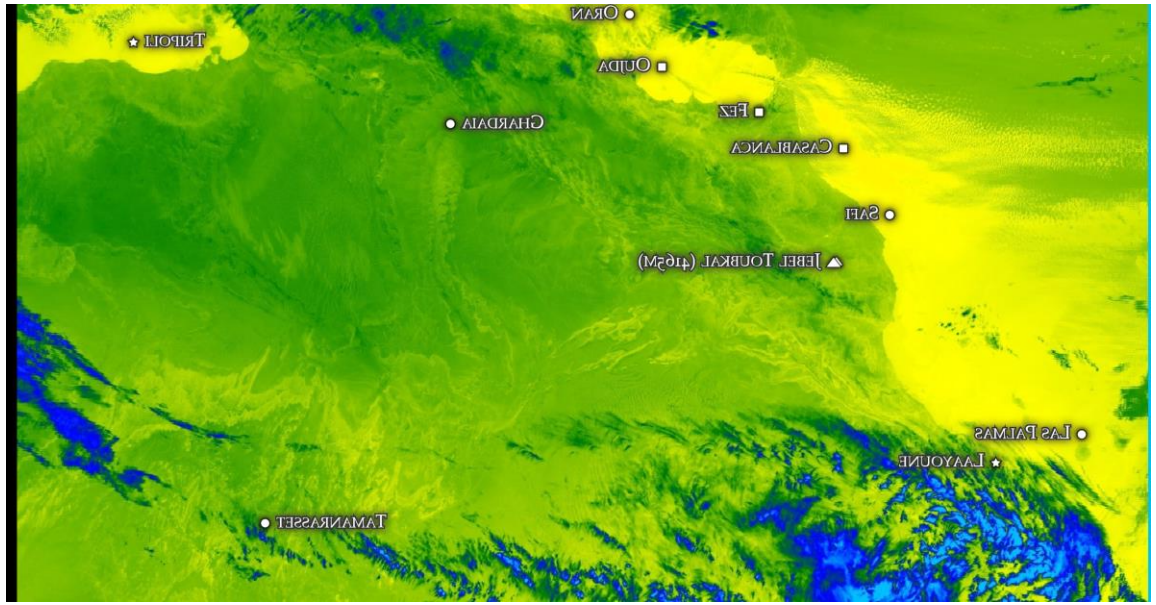
farearth
OBSERVER
METOP-C
SUOMI NPP
NOAA 18
NOAA 20
METOP-A
METOP-B
NO PASS
RECORDINGS
28 Dec 2020 01:47:01 UTC Africa NOAA 20 VIIRS
28 Dec 2020 00:56:31 UTC Africa SUOMI NPP VIIRS
28 Dec 2020 00:08:36 UTC Africa NOAA 20 VIIRS
27 Dec 2020 21:38:21 UTC Africa METOP B AVHRR
27 Dec 2020 21:22:55 UTC Africa NOAA 18 AVHRR
27 Dec 2020 20:51:26 UTC Africa METOP C AVHRR
27 Dec 2020 20:27:13 UTC Africa METOP A AVHRR
27 Dec 2020 Africa

Products received quasi-realtime





NOAA 20 VIIRS

RARS status and Callenges at end of SAWIDRA

- 4 RARS stations installed and contribued to WMO-Dbnet until 2023
- Maintenance Contract of SOLETOP ended in 2023.
- The maintenance contact of SOLETOP.
- New MoUs with hosting sites are necessary
- New maintenance and upgrade contract is needed,

STATUS OF –RARS Africa STATIONS

From SAWIDRA to SEWA

- Operational status of the antennas – are they functioning and acquiring satellite data? If not, please indicate the reasons.

  - antenna are good from last report in 2023

  - FAREEARTH software needs upgrade and regular update

From SAWIDRA to SEWA

- Whether they are currently receiving data, and if so, what data.

  - Stations have received data up to 2023 when FAREARTH software needed update and there was no maintenance contract,

Satellites and Instruments Supported by SAWIDRA RARS- 1

SAWIDRA RARS service	Satellite Series and Instruments			
	POES NOAA18, 19	EPS Metop-A, B, C	JPSS SNPP, JPSS-1	FY-3 FY-3D, FY-3E
SAWIDRA-ATOVS	HIRS/4 AMSU-A MHS	HIRS/4 AMSU-A MHS	-	
SAWIDRA-AVHRR	AVHRR/3	AVHRR/3	-	
SAWIDRA-IASI	-	IASI	-	
SAWIDRA-ATMS	-	-	ATMS	

Satellites and Instruments Supported by SAWIDRA RARS - 2

SAWIDRA-ATMS	-	-	ATMS	
SAWIDRA-CrIS	-	-	CrIS	
SAWIDRA-VIIRS	-	-	VIIRS	
SAWIDRA-VASS	-	-		MWHS-II MWTS-II

SEWA-RARS

- **The Strengthening Early Warning in Africa (SEWA) project forms part of the Africa–EU Space Partnership Programme (AESPP). Its aim is to strengthen the use of space-based information and services to support sustainable development and resilience in Africa.**
- SEWA is implemented under the EU's Global Gateway strategy and led by the European Commission's Directorate-General for International Partnerships (DG INTPA). It is a major collaborative effort between EUMETSAT, the European Centre for Medium-Range Weather Forecasts (ECMWF), and the African Union Commission (AUC).
- Launched in January 2025, SEWA will run for four and a half years and focuses on enhancing Africa's capacity to produce and deliver space-based data, applications, and services for early warning systems related to hazardous weather and climate events.

SEWA-RARS

- Within SEWA, EUMETSAT leads the delivery of Output 2.2 – the establishment and operationalization of the African Meteorological Satellite Application Facility (AMSAF). It also contributes to Output 2.1 - improved access to and use of satellite data and Output 2.5 – strengthened human capacities, knowledge and community-shaping.
- EUMETSAT's focus is on two major technical tracks that together underpin Africa's enhanced capability to use satellite data for early warning:
- AMSAF – developing Africa's first continental nowcasting hub.
- **The Regional ATOVS Retransmission Services (RARS) upgrade** – modernising and sustaining polar-orbiting data reception for regional and global forecasting systems.

Current Status –SEWA-RARS

- SEWA Project lunched in January 2025
- New MoU between ACMAD and hosting sites are under development on new basis.
- ACMAD Owns the RARS stations Network
- Hosting sites (GABON, KENYA, South Africa and Niger) host physically the RARS stations respectively.
- EUMETSAT is covering the upgrade of the RARS stations

under SEWA project (Funding during project life time)

Current Status SEWA-RARS

- 4 RARS stations will become futur WMO WIS -DCPC
- Long term sustainability should be well planned
- Post SEWA project - ownership versus maintenance and operation cost must bewell strategised
- RARS Africa Network Funding Strategy/Mechanism for its sustainable operation and contribution to WMO DBNet and WIS program as network of 4 WIS – DCPCs.

THANKS for your Attention !

- https://acmad.org
- https://new-rcc.acmad.org/
- https://rcc.acmad.org/