

Transformative Environmental Monitoring to Boost Observations in Africa

X-Band radar for spatial rainfall estimates



Overview

TEMBO Africa X-Band radar is a small radar for spatial rainfall estimates, which scans its environment, using X-band rays with a frequency of 9410 MHz up to a distance of 200 km. It detects precipitation as low as 10 dBZ, reconstructing the wind field, and providing real-time insight into the weather.

Where?

The system can be applied all over Sub-Saharan Africa, while a pilot is being implemented in Ghana.

For whom?

Ideal for stakeholders interested in providing flood early warnings, dam reservoir managers, crop insurance providers, meteorological agencies, aviation, and farming and fishing sectors.

Small, smart and simple

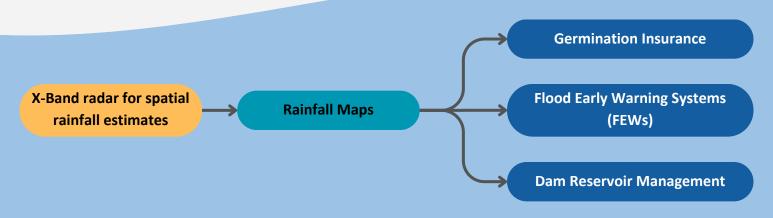
- 💸 5 times cheaper than the traditional C-band radar.
- **40 times lower consumption** in contrast to C-band radar, being ideal for areas with limited power infrastructure.
 - Reduced installation and maintenance costs compared to standard large meteorological radars, thanks to its smaller size and simpler construction.
- Can be supported and maintained by local technicians, reducing dependency on specialised external support.
- ☐ Faster data update rates, achieving a full 3D scan in 1 minute versus 5 minutes of the C-band, enhancing real-time weather monitoring and nowcasting.
 - 💡 Additional uses in FFG, aviation, fishing, and farming.





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A sensor that can be used for one of the **TEMBO** products, while it can be leveraged by all services in the context of a "Lego®-ised" approach, which enables flexible integration with other systems!



How it works

Scanning of the atmosphere

The radar scans the surrounding atmosphere by emitting X-band microwave pulses (9410 MHz) up to a 200 km range.

Precipitation and wind detection

The radar identifies rainfall intensities as low as 10 dBZ and reconstructs wind movements in real time.

3D Data Generation

A full atmospheric scan is performed every minute, much faster than traditional systems.

Edge data processing and transmission

The data of the scans are processed locally through edge computing and can be transmitted to external platforms at 2-3 Mbit/s.

Data integration

Transmitted data are integrated with other platforms for real time monitoring and decision support.

Responsible partner for the X-Band radar

MicroStep - MIS

Contact us and learn more!

