EIOS
EPIDEMIC INTELLIGENCE FROM OPEN SOURCES

2024 EIOS GTM SENEGAL

Radio Mining for Public Health Intelligence in the African Region

-Enhancing Sources on the EIOS System

2024
EIOS GLOBAL TECHNICAL MEETING

10-12 DECEMBER 2024
The Future of
Public Health Intelligence

AGENDA

Radio Mining (Speech-to-Text)

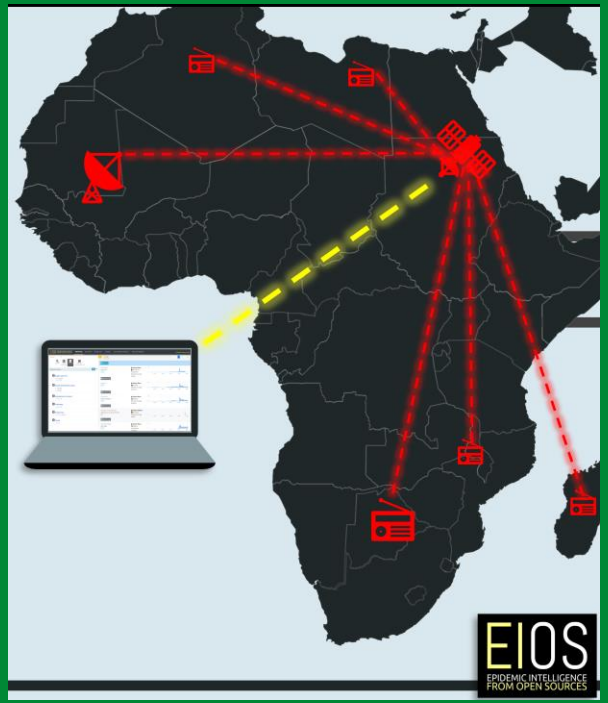
Reduce time-to-detection of potential signals by listening and mining radio broadcasts.

- Overview of EIOS Sources
  - Radio as a Source
  - The Pilot Project Overview
  - Key timelines and Responsibilities
  - Next Steps

Speech-to-Text Project: FM Radio Mining

Add radio stations (FM/AM digital and offline) as data sources on EIOS to increase media coverage and reduce time-to-detection

Text (News Articles) => EIOS
Audio (Radio Stations) => EIOS



Speech-to-Text: FM Radio Mining

Leveraging the OICT/UN Global Pulse system which listens to FM radio channels and transcribes the speech into text using OpenAI Whisper. The text is analyzed to detect potential signals. This platform will integrate seamlessly with EIOS, enabling Public Health Intelligence (PHI) teams across the African Region to monitor radio signals.

Multi-language

English, Swahili, Arabic, French, Portuguese, ...

Transcription

Speech recognition models adapted for African languages, and dialects.

Pilot

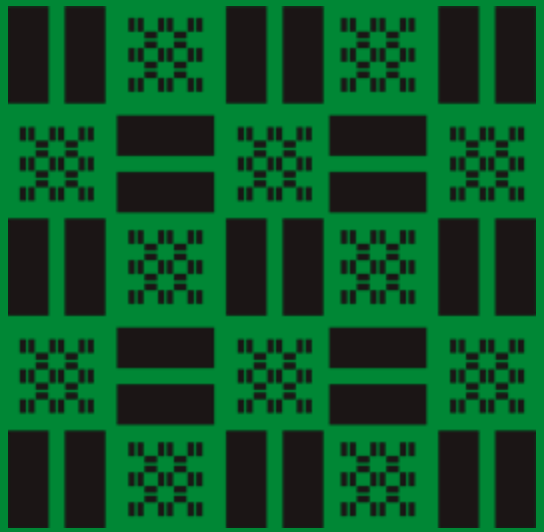
Few countries to participate in a pilot.

Period

September 2024 – February 2025

Features Considered

- Transcription into 5-minute segments
- Joint language detection
- Speaker diarization
- AI summarization
- Ads and music filtering
- EIOS Integration



BACKGROUND – EIOS INITIATIVE AND SYSTEM

EIOS IS A UNIQUE GLOBAL COLLABORATION WITH ONE GOAL:

TO SAVE LIVES AND MINIMISE THE IMPACT OF EMERGING THREATS TO HEALTH THROUGH

Quality and timely detection

Verification and analysis

Assessment and communication

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THE EIOS INITIATIVE IS BUILT ON THREE PILLARS

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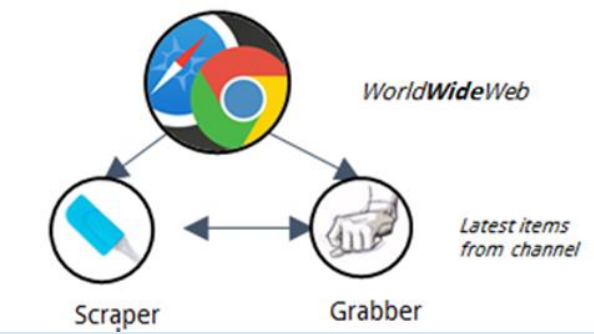
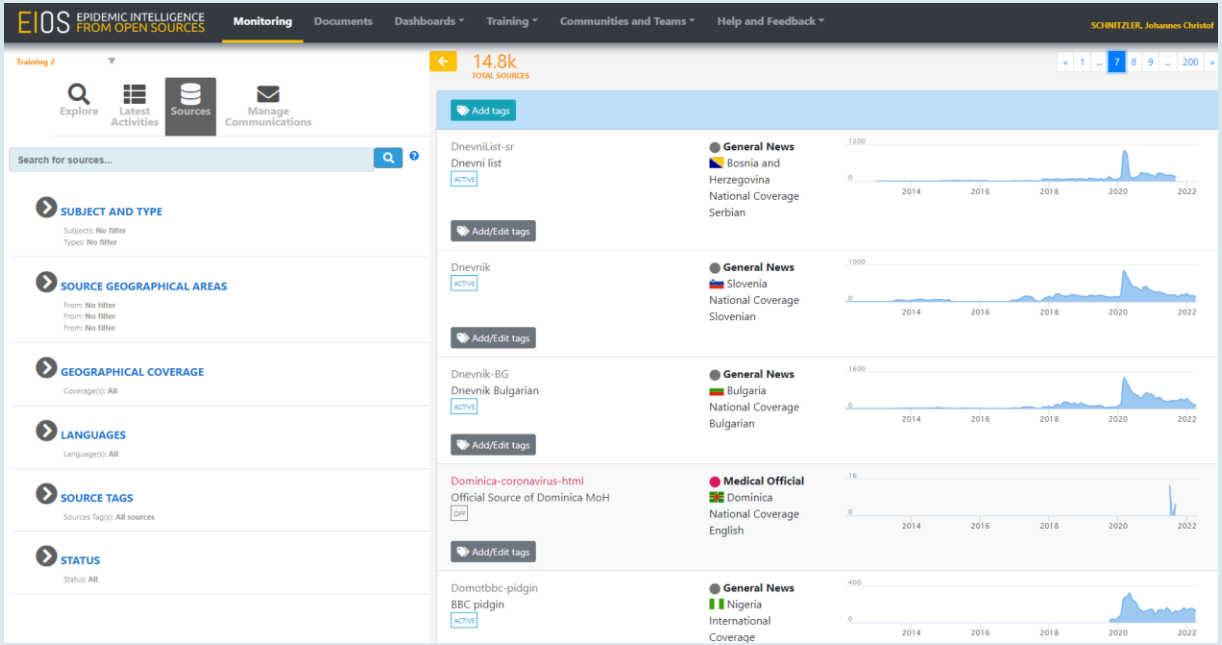
Sources in EIOS



- There are currently **>12,800 active sources** in EIOS based on **> 30,000 feeds**

- Broad range of sources
  - ✓ Online print media
  - ✓ News Aggregators
  - ✓ Expert networks
  - ✓ Social media (Twitter, Facebook, Blogs)
  - ✓ Emails form subscriptions
  - ✓ …



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WHY RADIO AS A SOURCE ON EIOS?

Dissemination of health-related information and collection of real-time reports from communities that otherwise have limited communication infrastructure.

Interactive radio programs can provide real-time information on emerging health threats, unusual disease symptoms, or local outbreaks.

Broadcast in local languages are trusted by local communities and can encourage people to share health concerns, report suspicious illnesses

Complement existing surveillance systems, offering an additional layer of intelligence through community reporting.

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Project/Timeline Overview

Weeks 1-2:
Engagement of Pilot Countries

Initial setup and collaboration with health ministries to secure participation and compliance.

Weeks 3-4:
Training and Capacity Building

Conduct training sessions for participants on radio mining and data collection.

Weeks 5-8:
Pilot Rollout and Data Collection

Begin capturing radio streams and integrating transcriptions with the EIOS platform.

Weeks 9-12:
System Evaluation and Optimization

Assess system performance, gather feedback, and refine for future phases.

- *Completed*
- *Ongoing*
- *Not Done*

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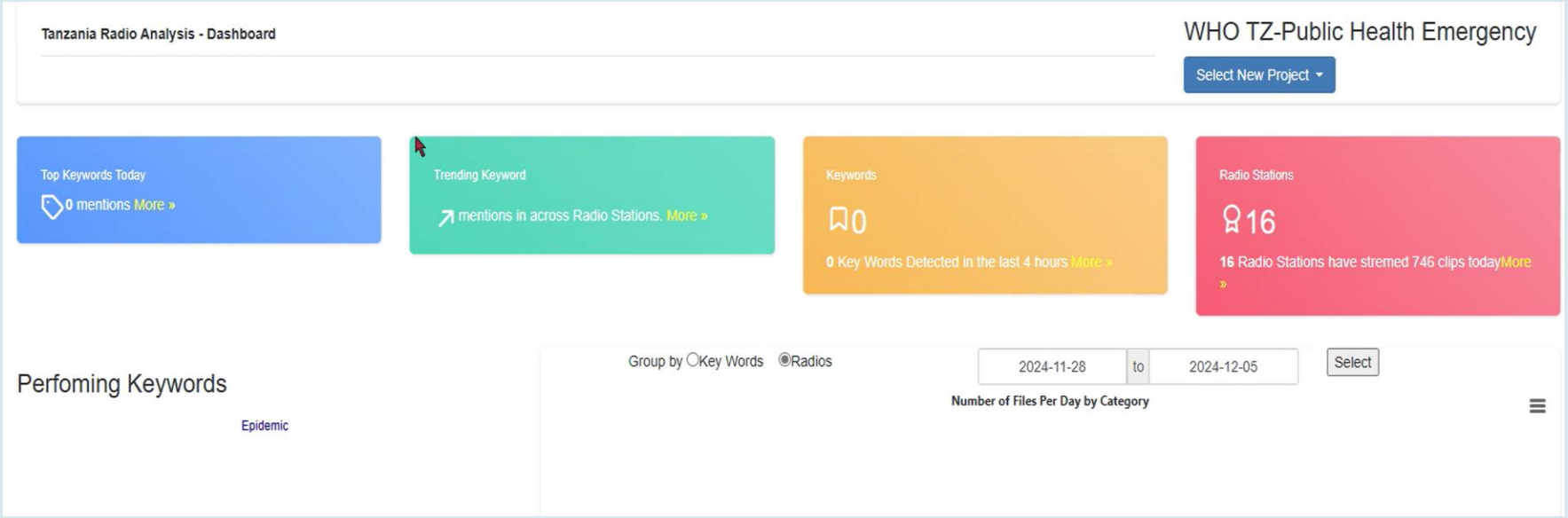
Preliminary dashboard



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KEY RESPONSIBILITIES

OICT

- ❑ Will provide technical support for system development and deployment

WCO(Tanzania and South Sudan)

- ❑ facilitate engagement with the Ministry of Health and other relevant stakeholders
- ❑ Support mapping of local radio stations
- ❑ Support identification of pilot sites
- ❑ Support training, monitoring, and evaluation

AFRO/Pandemic Hub in Berlin

- ❑ Provide operational and technical support for implementation
- ❑ Facilitate training of in-country teams
- ❑ Review technical requirements
- ❑ Provide guidance for monitoring and evaluation
- ❑ Report finding and plan for scale-up

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Next Steps and Conclusion

- **Continue System Optimization:** Refine the speech-to-text system based on feedback from pilot countries and improve key words and data collection.
- **Plan for Scale-up:** Prepare to expand the project to additional countries and languages based on initial outcomes.
- **Strengthen Collaboration:** Enhance partnerships with WHO and Ministries of Health for future phases of the project.

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THANK YOU!

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