



World Meteorological Organization

Weather • Climate • Water

WIGOS Implementation in Region I

3^eme Groupe de Travail ASECNA-OMM
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Outline

- What is WIGOS
- WIGOS Framework & Implementation:
 - Regional level
- The WIGOS Pre-Operational Phase
- Priorities for WIGOS in Region I
- ASECNA and WIGOS



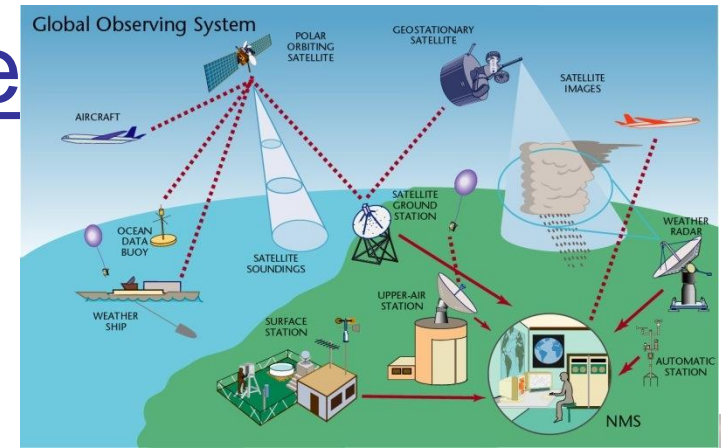
What is WIGOS?

- The WMO Foundation for Meeting the Observing Needs of its Weather, Climate, Water and Environmental Services
- A framework for integrating all WMO observing systems and WMO contributions to co-sponsored observing systems.
- A WMO Strategic Priority Area
- Together with the WMO Information System (WIS), WIGOS is a WMO contribution to GEOSS.
- WIGOS is not:
 - Replacing or taking over existing observing systems, which will continue to be 'owned' and operated by a diverse array of organizations and programmes, national as well as international.



WIGOS Component System

- Global Observing System (WWW/GOS)
- Observing component of Global Atmospheric Watch (GAW)
- WMO Hydrological Observations (including WHYCOS)
- Observing component of Global Cryosphere Watch (GCW)



WIGOS Implementation Phase

- WMO 16th Congress (2011): Implementation of WIGOS
- Key deliverables for the 17th Congress (May/June 2015):
 - Draft Technical Regulations on WIGOS; [link here](#)
 - Draft Manual on WIGOS; [link here](#)
 - Metadata Standards
 - Draft WIGOS Metadata Standard; [link here](#)
 - Regional Implementation Plans
 - Proposal for the Pre-Operational Phase of WIGOS (2016-19)
- Many elements will follow later
 - Guidance material
 - Quality management
 - National Implementation Plans
 - (Actual implementations)



WIGOS Framework Implementation Plan (WIP; live link)

CONTENTS

1. Introduction and Background
 2. **Key Activity Areas for WIGOS Implementation**
 3. Project Management
 4. Implementation
 5. Resources
 6. Risk Assessment / Management
 7. Outlook
- Annexes

KEY ACTIVITY AREAS

- 1) Management of WIGOS implementation
- 2) **Collaboration with WMO co-sponsored observing systems and national and international partners**
- 3) Design, planning and optimized evolution
- 4) Observing System operation and maintenance
- 5) Quality Management
- 6) Standardization, system interoperability and data compatibility
- 7) The WIGOS Operational Information Resource
- 8) Data and metadata management, delivery and archival
- 9) Capacity development
- 10) Communications and outreach



Regional WIGOS Implementation Plans

- Draft R-WIPs developed for all WMO Regions by Regional WIGOS Task Teams of WGs, typically helped along by dedicated regional (or sub-regional) WIGOS Workshops
- **All WMO Regional Associations have approved their R-WIPs**
 - Analogous to WIP, the key section is Section II, listing the same ten KAA also found in the R-WIPs
 - **Important now to align national priorities, VCP request and donor-funded projects with respective R-WIP**
- Regional Working Structures to oversee and coordinate implementation are still developing, and differ from Region to Region



The WIGOS Pre-Operational Phase (2016-2019)

- Increased emphasis on regional and national activities
- Five main priority areas:
 1. WIGOS Regulatory Material, supplemented with necessary guidance material
 2. WIGOS Information Resource, especially the Observing Systems Capabilities analysis and Review tool (OSCAR), especially OSCAR/Surface
 3. WIGOS Data Quality Monitoring System (WDQMS)
 4. Regional Structure; Regional WIGOS Centers
 5. National WIGOS Implementation, coordination and governance mechanisms



I. Regulatory Material and Guidance Material

- The “*Guide to WIGOS*” will include material on (as matters of priority):
 - WIGOS Information Resource (WIR), ***including OSCAR/Surface***
 - WIGOS Data Quality Monitoring System (**also data availability**)
 - **WIGOS Regional Centres**; roles and responsibilities, establishment, partners, review and accreditation process ..
 - **Development of National Partnerships**, with both public and private entities, integration of third-party data
 - Development of a National Observing Strategy
 - Design, procurement and operation of observational networks, **especially AWS**
 - Integration of space-based observations
 - ...



II. WIR (OSCAR/Surface)

- Modern, electronic, searchable inventory of all observational assets (stations/platform)s under the WIGOS umbrella
 - Developed jointly by WMO and MeteoSwiss, with MeteoSwiss providing the major part of the funding
 - Will be presented during WMO Congress later this month
 - This **will replace Volume A** and will include information from similar inventories for other (non-GOS) components of WIGOS
 - Education and training Members in populating, editing and using OSCAR/Surface is a major focus area for 2016-2019
- Will require full implementation of
 - Metadata standards
 - WIGOS Station Identifiers





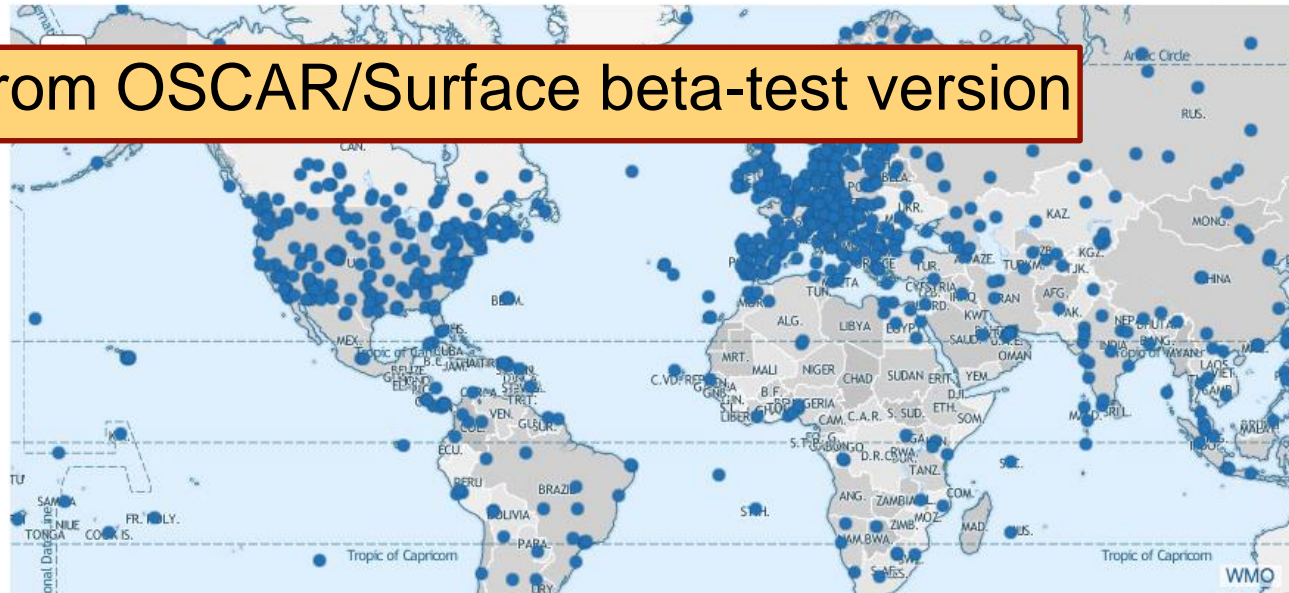
Filter map

Welcome to OSCAR

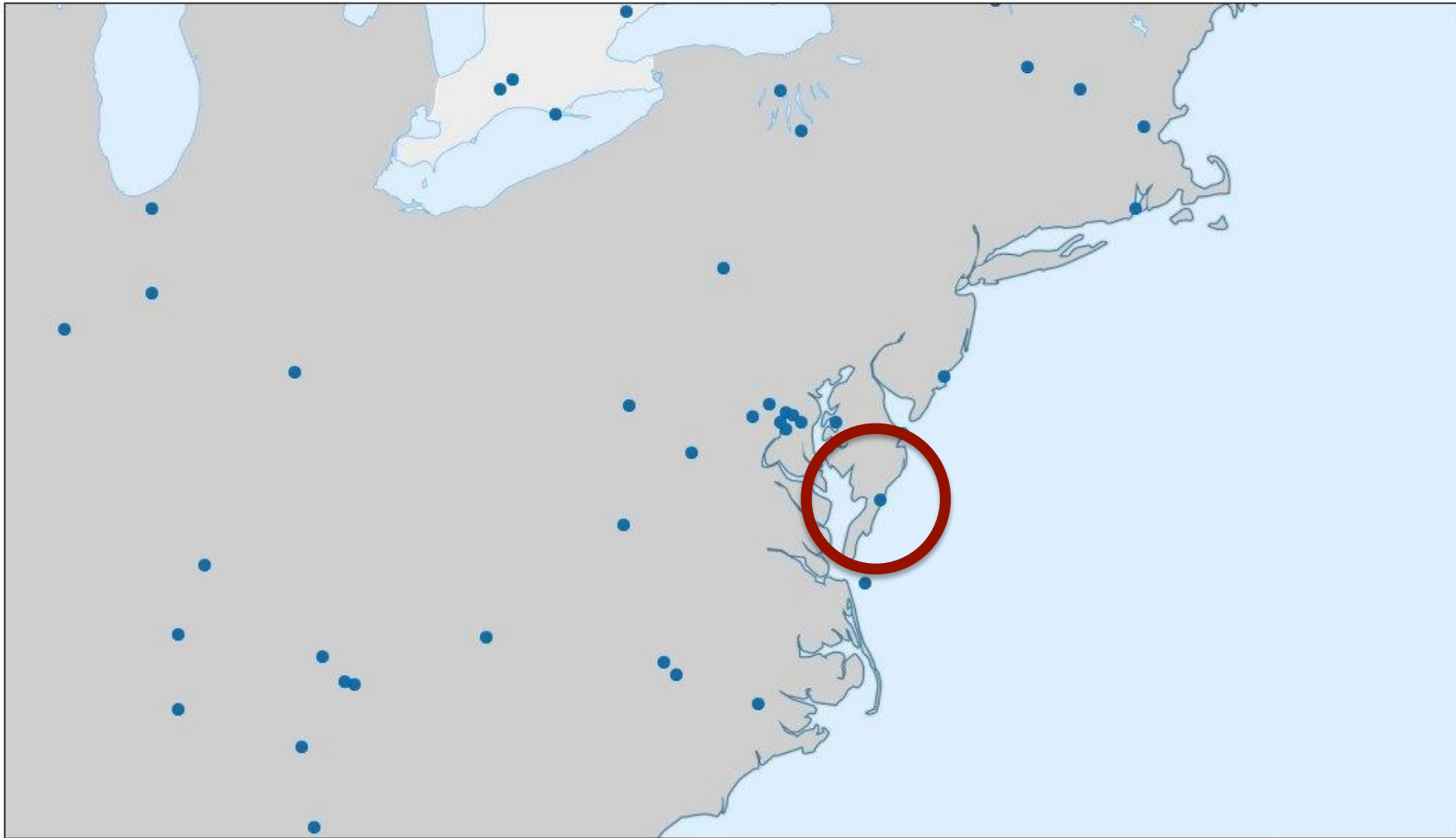
By program:

-
- GOS
- GCW
- GOS
- Lidar

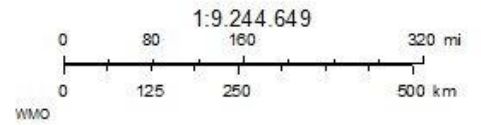
Screenshot from OSCAR/Surface beta-test version



Latest news



Μαρτίου 17, 2015



Wallops Island (VA) (United States (the))

Last updated: 2011-11-25

in WMO RA IV - North America, Central America and the Caribbean

Station characteristics

Station name: Wallops Island (VA)
 Station alias:
 Date established: 2011-11-25
 Station type: Land (fixed)
 WMO index No: 72402-0
 WMO region: IV - North America, Central America and the Caribbean
 Country / Territory: United States (the)



Coordinates: 37.9399986267°N, 75.4599990845°W, 13m
 Time zone: UTC-5
 Climate zone: Steppe climate, hot arid
 Station URL: <http://www.esrl.noaa.gov/gmd/dv/site/WAI.html>
 Other link (URL):
 Predominant surface cover:
 Surface roughness:
 Topography or bathymetry:
 Population in 10km / 50km (in thousands):
 Supervising organization:
 Site information:

GMD Projects at Wallops Island, Virginia: Surface Ozone, Dobson Ozone NDACC station: o3sonde, dobson



WIGOS Metadata

(loosely defined as “ancillary information that is necessary for optimally using the observation”; more stringent definition can be found in WIGOS Metadata Standard)

#	Category	Description
1	observed quantity	Specifies the basic characteristics of the observation and the resulting data sets.
2	purpose of observation	Specifies the main application area(s) of the observation and the observing program(s) the observation is affiliated to.
3	data quality	Specifies the data quality and traceability of the observation.
4	environment	Describes the geographical environment within which the observation is made. It also provides an unstructured element for additional meta-information that is considered relevant for adequate use of the data and that is not captured anywhere else in this standard.
5	data processing and reporting	Specifies how raw data are transferred into the reported physical quantities and reported to the users.
6	sampling and analysis	Specifies how sampling and/or analysis are used to derive the reported observation or how a specimen was collected
7	station/platform	Specifies the environmental monitoring facility, including fixed station, moving equipment or remote sensing platform, at which the observation was made.
8	method of observation	Specifies the method of observation and describes characteristics of the instrument(s) used to make the observation. If multiple instruments used to generate the observation, then this category should be repeated.
9	ownership and data policy	Specifies who is responsible for the observation and owns it.
10	contact	Specifies where information about the observation or dataset can be obtained.

10 categories,
90 elements



III. WIGOS Data Quality Monitoring System (WDQMS)

- Real-time monitoring of performance (data availability and data quality) of all WIGOS components, searchable by region, country, station type, period, updated regularly (e.g. GOS every 6 hours)
 - This will allow us to monitor regional and national (actually station-level) performance of all WIGOS components, and analyse trends over time
 - Pilot project with ECMWF and NCEP is underway
- Delayed mode monitoring of data quality as measured against reference sources of information.
 - Fault management system for tracking and mitigation of performance issues.



IV. Regional WIGOS Centers

- Members already now requesting guidance and support from the WIGOS PO; some of this could be provided more efficiently and effectively by a regional entity, e.g. WIGOS Regional Centers
- General role of WRC would be to monitor, coordinate and support the implementation activities in the Region (or sub-Region)
- Specific areas of responsibility may be any or all of the following:
 - Regional performance monitoring of WIGOS networks (data availability).
 - Regional monitoring of observational data quality, especially for observations not used for global NWP (climate, atmospheric composition, hydrology, etc.)
 - Fault management, i.e. follow-up with data providers in case of data availability or data quality problems.
 - Regional network design.
 - Regional coordination of WIGOS implementation activities and projects.
 - Coordination of regional calibration activities.
 - Training.



V. National Implementation, Coordination and Governance Mechanisms

- Members requesting guidance on
 - Development of National Partnership agreements
 - Integration of third-party data from government partners
 - Integration of third-party data from research/academia
 - Integration of third-party data from the commercial sector
 - Quality Management approaches
 - Data policy issues,
 - ...



Priorities for WIGOS in Region I

(TT-WIGOS, Harare, November 2014)

- Guidance on implementing WIGOS at national level
- Guidance on AWS networks
- WIGOS/WIS interaction and collaboration
- Regional WIGOS Centers
- Partnering with existing technical and economic groupings (e.g. ASECNA, SADC, CEMAC, ECOWAS, IGAD and MAGREB)
- RA-I representation on WIGOS Task Teams and TC Expert Teams
- Resourcing WIGOS is primarily a national responsibility; NMHSs to make the necessary resources available, including training
- Educating PRs on benefits brought by WIGOS in terms of national visibility, improved service delivery and economic efficiencies



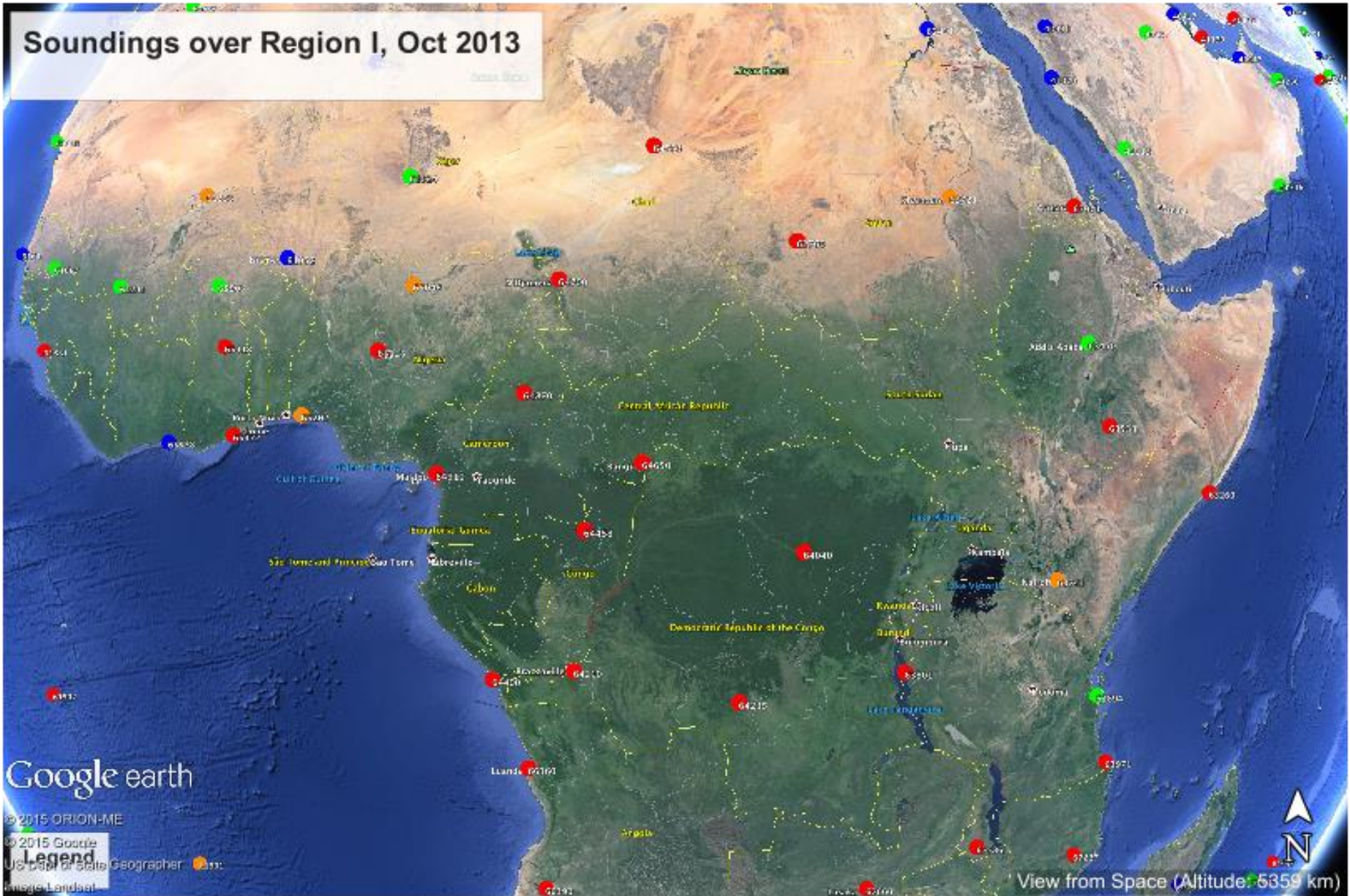
ASECNA and WIGOS

- What can WIGOS do for ASECNA?
 - Contribute to improved aviation safety in Region I (and elsewhere)
 - Provide visibility of ASECNA contribution to WIGOS/GOS
- What can ASECNA do for WIGOS?
 - Establish/rehabilitate/improve stations, especially upper air
 - All stations in its region of interest are relevant to ASECNA mandate, not just those operated by ASECNA itself.
 - Calibration; Education and training; Telecommunication (WIS)
 - Regional WIGOS Center?



Soundings over Region I, Oct 2013

2013-10-31 00:00



Google earth

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U.S. Dept. of State Geographer

Amesje Landaat

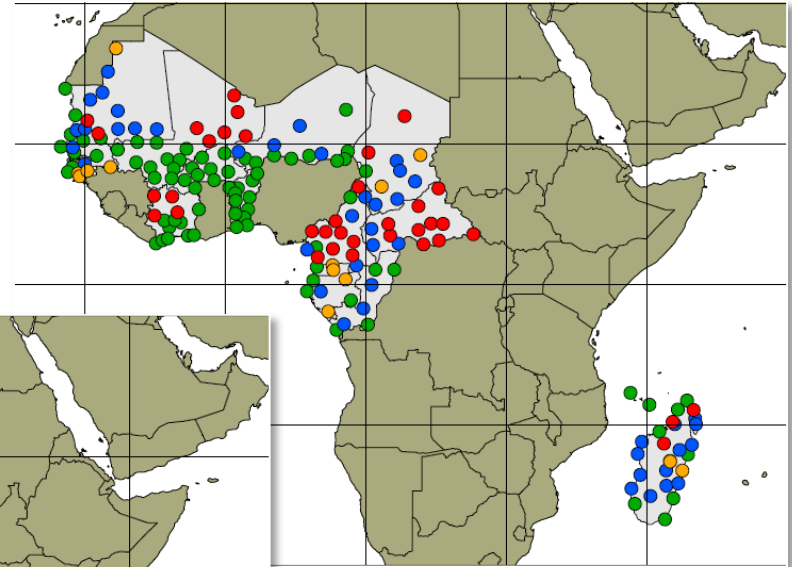


View from Space (Altitude: 5359 km)

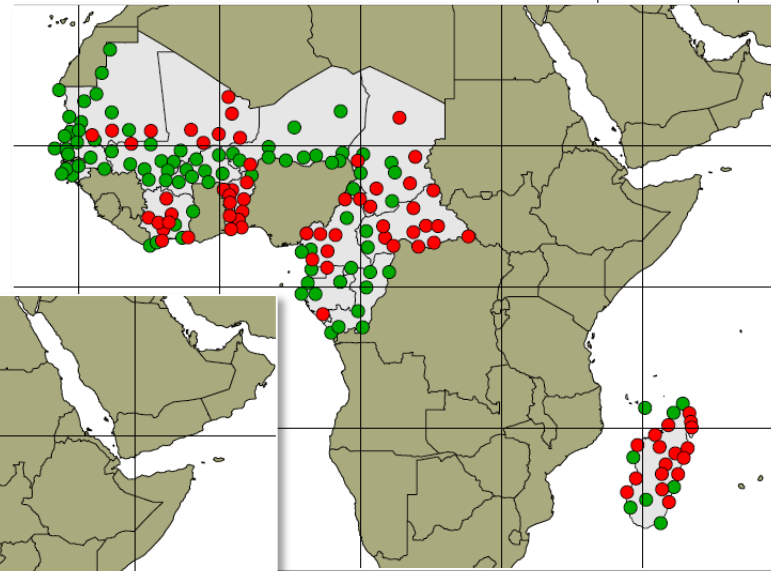


Octobre 2014

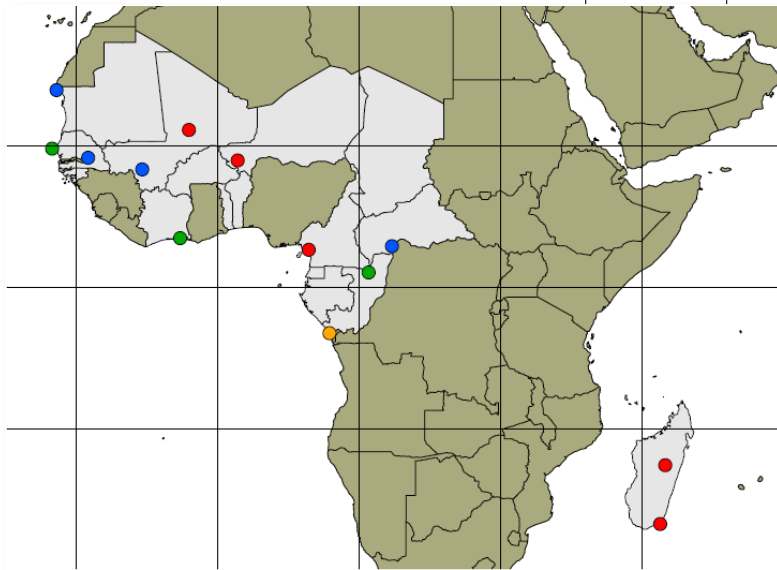
SYNOP



CLIMAT



TEMP



Percent Received

- 0%
- ≤ 45%
- 45% - 90%
- 90% to 100%



Summary

- The WIGOS Implementation Phase will end this year
- The WIGOS Pre-Operational Phase (2016-2019) will bring increased focus on regional and national activities, also in Region I
 - Regional WIGOS Centers
 - New station inventory
 - New monitoring tools
 - Guidance material on AWS, ...
 -
- Many opportunities for increased collaboration between ASECNA and WMO

