



WIGOS WORKSHOP 2019

Session 3.2

Introduction of RWC mandatory functions

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RWC mandatory functions

1. **Regional WIGOS metadata management** (work with data providers to facilitate collecting, updating and providing quality control of WIGOS metadata in **OSCAR/Surface**)
2. **Regional WIGOS performance monitoring and incident management** (WIGOS Data Quality Monitoring System; **WDQMS**) and follow-up with data providers in case of data availability or data quality issues

Ref. Annex to Decision 30 (EC-68) CONCEPT NOTE ON ESTABLISHMENT OF REGIONAL
WMO INTEGRATED GLOBAL OBSERVING SYSTEM CENTRES

OSCAR/Surface

Members shall share metadata ...

- WIGOS Manual


2.5.3 Global compilation of observational metadata

2.5.3.1 Members shall make available to WMO for global compilation those components of the WIGOS metadata that are specified as mandatory or conditional (whenever the condition is met).

Note: Global compilations of WIGOS metadata are held in several databases. The database of the Observing Systems Capability Analysis and Review tool (OSCAR) of the WIGOS Information Resource (WIR) is the key source of information for WIGOS metadata. Other global compilations of specific components of WIGOS metadata include elements of the GAW Station Information System (GAWSIS), the database of the JCOMM In Situ Observations Programme Support Centre (JCOMMOPS) and others. Purpose and management of WIR and OSCAR are described in Attachment 2.2.


WIGOS metadata model is fairly comprehensive, lots of elements to report

Why OSCAR/Surface?



World Meteorological Organization
Weather · Climate · Water

About | News | Glossary | FAQ | Links | Support | Feedback | Login



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Federal Department of Home Affairs FDHA
Federal Office of Meteorology and Climatology MeteoSwiss

OSCAR Observing Systems
Capability Analysis
and Review Tool

Home | Search | Critical review

Search

Quick access

Generate station report by:

Station name

WIGOS Station Identifier

Generate station lists by:

Country

Type

Observed variable

Find people by:

Contact name

Filter map

By program / network:

☒ WIGOS components

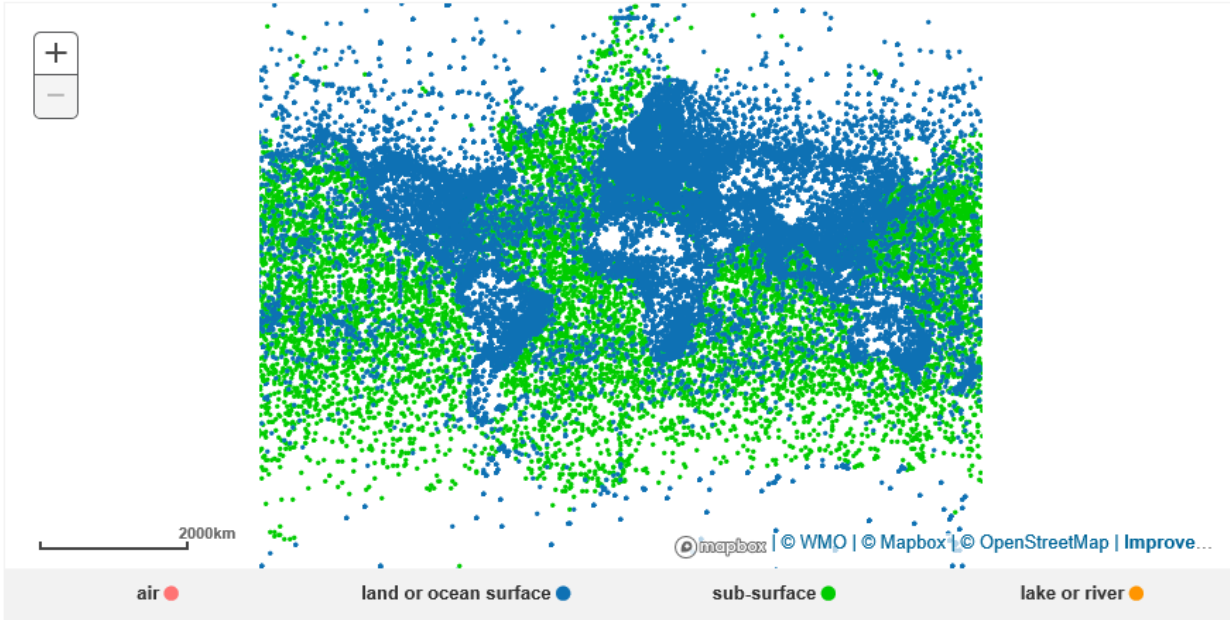
☒ GOS

☒ GAW

☒ WHOS

Welcome to OSCAR/Surface

OSCAR/Surface is the World Meteorological Organization's official repository of WIGOS metadata for all surface-based observing stations and platforms. For more details on OSCAR, please visit the [About](#) section. For additional information about WIGOS, visit the [WIGOS Homepage](#).



Example:Tokyo



[About](#) | [News](#) | [Glossary](#) | [FAQ](#) | [Links](#) | [Support](#) | [Feedback](#) | [Login](#)

TOKYO (Japan) in WMO Region II - Asia

meteoSwiss

Atmosphere > Pressure

Programs / network affiliation

Program / network affiliation
GOS
CLIMAT(C)
RBCN
RBSN(S)

Atmospheric pressure - [Geometry: Point]

Variable: Atmospheric pressure
Geometry: Point
Programs / network affiliations: GOS
RBSN(S)

Deployments

From 2016-04-29

Near Real Time: No

Instrument characteristics

Manufacturer: (unknown)
Model: unknown
Observing method: (unknown / unspecified)

Coordinates

Latitude	Longitude	Elevation	Geopositioning method	From
35.6916666667°N	139.7511111111°E	24.2m		

WMO region: II - Asia
Country / Territory: > Japan
Coordinates: > 35.6916666667°N, 139.7511111111°E, 25.2m

WIGOS Metadata Standard



CHAPTER 2.

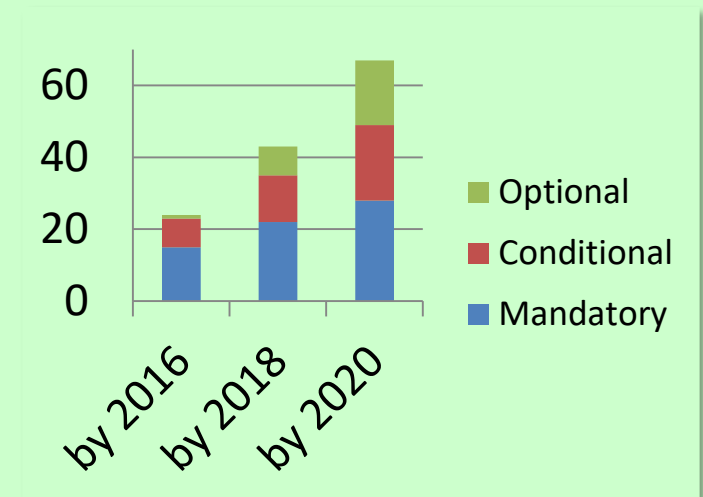
WIGOS METADATA CATEGORIES

- 10 categories of WIGOS metadata have been identified.
- They define the WIGOS Metadata Standard, each category consisting of one or more metadata elements.
- Each element is classified as mandatory (M), conditional (C) or optional (O).

<https://wis.wmo.int/WIGOS-MD>

Implementation of WMDS

- Reporting obligations
 - Mandatory items (28)
 - Conditional items (21)
 - Optional items (18)
- Adoption in 3 phases
 - Phase I 2016 (24)
 - Phase II 2017-2018 (19)
 - Phase III 2019-2020 (24)



Implementation of WMDS

Category	ID	Name	Phase I	Phase II	Phase III
			2016	2018	2020
<i>1.Observed variable</i>	1-01	<i>Observed variable – measurand</i>	M		
	1-02	<i>Measurement unit</i>	C		
	1-03	<i>Temporal extent</i>	M		
	1-04	<i>Spatial extent</i>	M		
	1-05	<i>Representativeness</i>		O	

Category	ID	Name	Phase I	Phase II	Phase III
			2016	2018	2020
<i>4.Environment</i>	4-01	<i>Surface cover</i>			C
	4-02	<i>Surface cover classification scheme</i>			C
	4-03	<i>Topography or bathymetry</i>			C
	4-04	<i>Events at observing facility</i>		O	
	4-05	<i>Site information</i>		O	
	4-06	<i>Surface roughness</i>			O
	4-07	<i>Climate zone</i>			O

mandatory (M) conditional (C) optional (O)

10 WIGOS metadata categories

WMDS vs OSCAR/Surface

1. Observed variable

2. Purpose of observation

3. Station/ platform

4. Environment

5. Instruments & methods of observation

6. Sampling

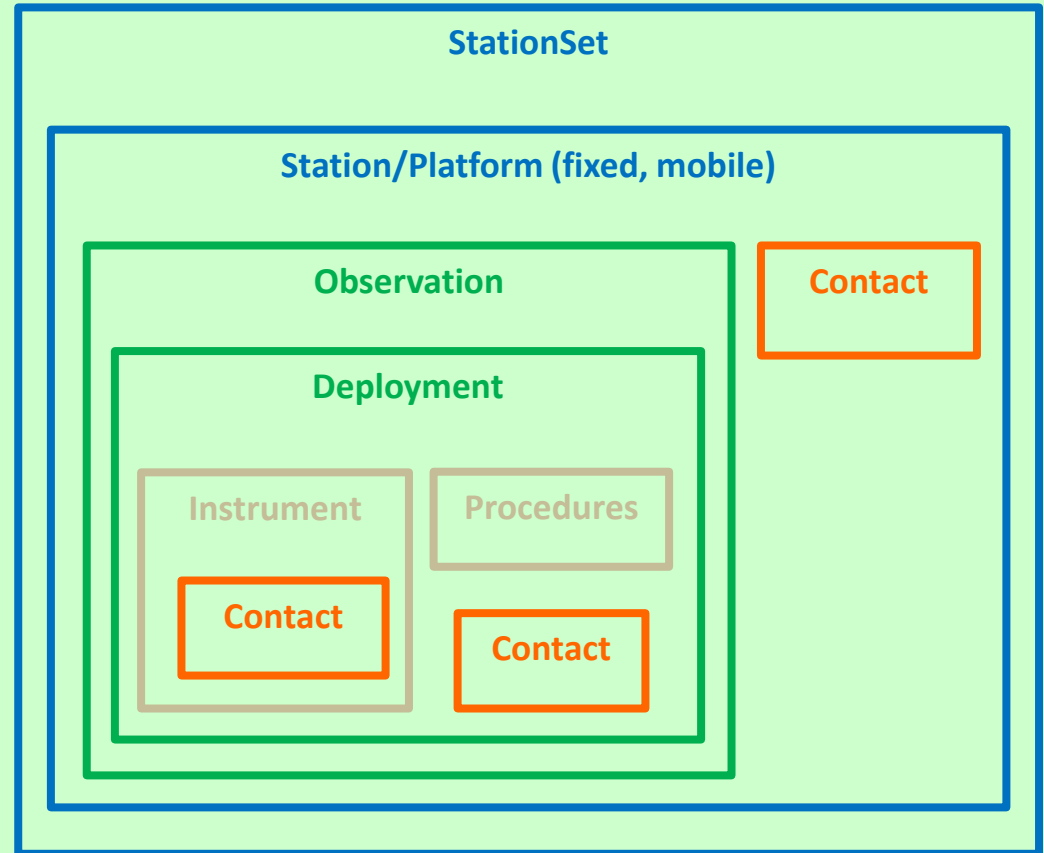
7. Data processing and reporting

8. Data Quality

9. Ownership and Data Policy

10. Contact

→ Defines categories and elements
→ **flat**

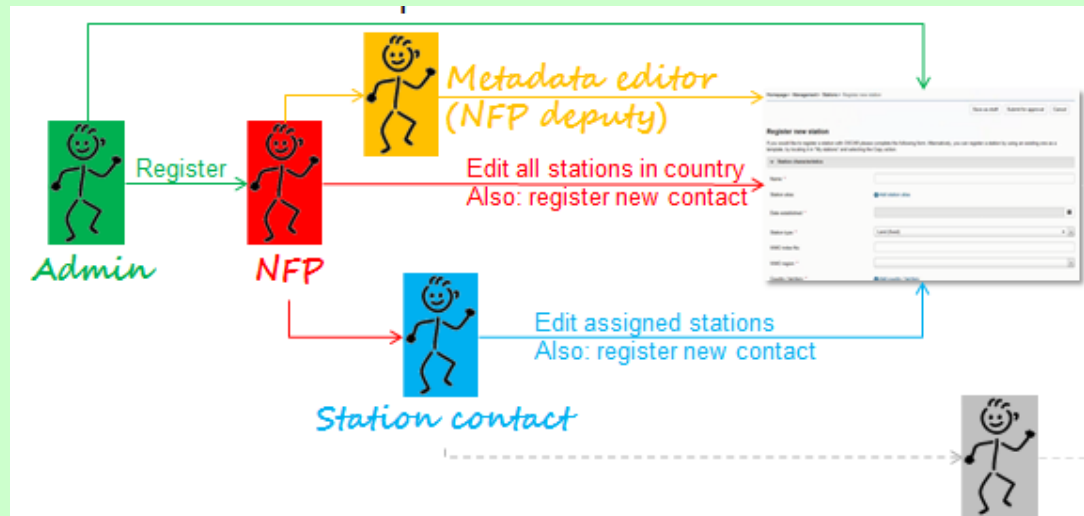


→ Reference implementation of WMDS
→ **Hierarchical structure**

How to get an account?

There are two ways to get an account

1. Designation as National Focal Point (NFP) for OSCAR/Surface by Permanent Representative
2. NFP, or other delegee, creates a user in OSCAR/Surface



How to create a new station?

2. Management console

1. Login

The screenshot shows the OSCAR (Observing Systems Capability Analysis and Review Tool) interface. The top navigation bar includes links for About, News, Glossary, FAQ, Links, Support, Feedback, and a user profile for Timo Pröscholdt. The 'Management' menu item is circled in red, with a callout pointing to it. The 'Login' button is also circled in red, with a callout pointing to it. The 'Register new station' form is highlighted with a black border.

Quick access

Generate station report by:

Station name

WMO ID

Generate station lists by:

Country

Type

Find people by:

Contact name

Filter map

By program / network:

- ☒ WIGOS components
 - ☒ GOS
 - ☒ GAW
 - ☒ WHOS
 - ☒ GCW
- ☒ Co-sponsored components
 - ☒ GCOS
 - ☒ GOOS
 - ☒ GTOS
- ☒ Other components
 - ☒ Non affiliated

Stations

- Register new station
- Pending approvals
- My stations
- View linked stations

Contacts

- Register new contact
- My contacts

Reference data

- Instruments

Register new station

If you would like to register a station with OSCAR please complete the following form. Alternatively, you can register a station by using an existing one as a template, by locating it in "My stations" and selecting the Copy action.

Station characteristics

Name: *

Station alias: + Add station alias

Save as draft Submit Cancel

3. To create a completely new station, use the *Register new station* form in the management menu

2016-11-30

Scheduled maintenance, 13 December 2016
Both GAWSIS and OSCAR will be temporary unavailable on 13 December 2016 between 14.00 and 15.00 UTC due to scheduled maintenance.
We apologise for any inconvenience.

2016-10-31

GAWSIS-OSCAR has been updated and new features are now available
Station photos can now be downloaded in original resolution
It is now possible to add more than one instrument with unknown specification per station

How to close a station?

① Close Data Series

Put End-Date on
Deployments
Data-Series

▼ Air temperature (at specified distance from reference surface) - [Geometry: Point]

[Edit data series information](#) [Delete data series information](#)

Variable: Air temperature (at specified distance from reference surface)
Geometry: Point
Programs / network affiliation: GOS
RBSN(S)
RBCN

Last updated: On 2016-05-31

▼ Deployments

+ Add deployment ?

> From 2016-04-29 to 2017-01-01 ←

② Put Deployment End-Date

Set End-Date on **Data-Generations** under the
Deployment (deployment End-date will be set
automatically)

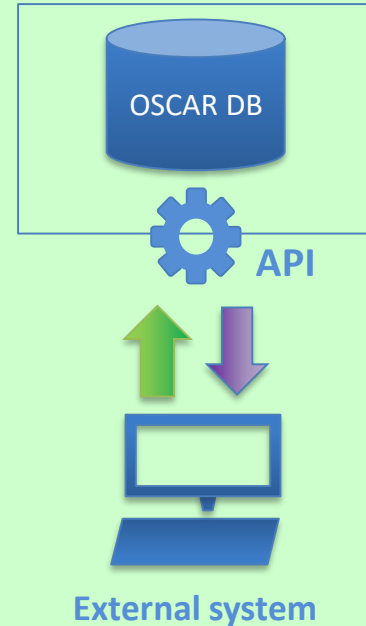
Data Generation

+ Add data generation

> Period covered: 2016-04-29 to 2017-01-01 ←

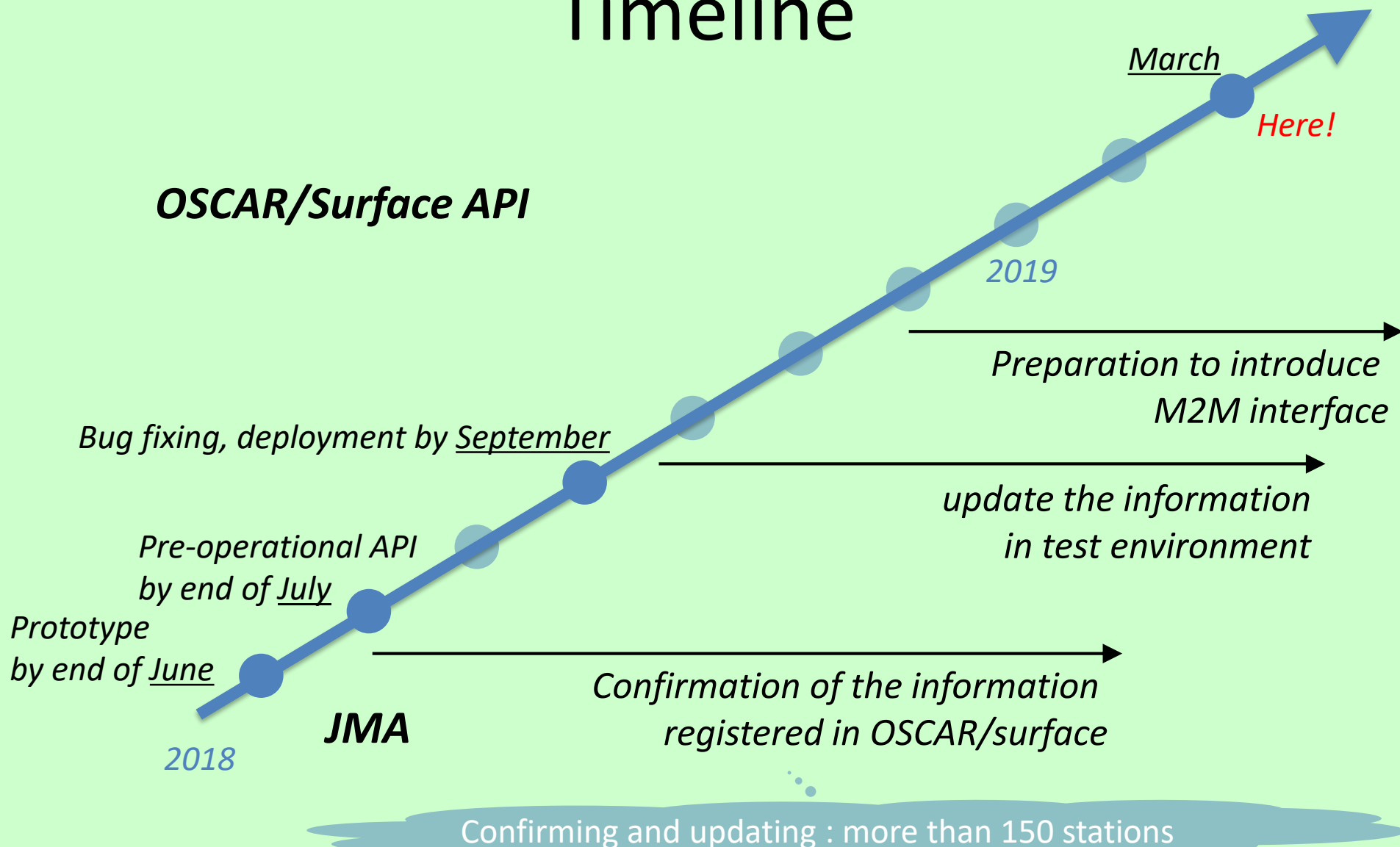
> Period covered: 2016-04-29 to 2017-01-01 ←

The OSCAR/Surface API



- Send and retrieve information from/to OSCAR/Surface in JSON/XML
 - Search stations: `/rest/api/search/station`
 - Download results: `/rest/search/download/stationSRs`
 - Download WMD XML representation of station
- An **API (Application Programming Interface)** allows **machine-to-machine interaction**, intended to support bulk operations or repeated updates

Timeline



OSCAR/Surface TEST environment

The screenshot shows the OSCAR/Surface TEST environment web interface. The header includes navigation links (About, News, Glossary, FAQ, Links, Support, Feedback) and a user profile for Yoshihiko Tahara. The main content area is titled "OSCAR Observing Systems Capability Analysis and Review Tool". A red banner at the top states: "Note: This is a test environment, use OS environment." The left sidebar contains a "Quick access" section with buttons for "Generate station report", "Generate station lists", and "Find people by:". The "Management" tab is selected, showing a list of stations, contacts, reference data, and organizations. The "XML submission" link is highlighted. The main content area displays the "WMDR" page, which includes a form for submitting XML data. The XML data is pre-filled with the following content:

```
<wmdr:WIGOSMetadataRecord gml:id="id1" xsi:schemaLocation="http://def.wmo.int/
<wmdr:headerInformation owns="false">
  <wmdr:Header />
</wmdr:headerInformation>
<wmdr:facility>
  <wmdr:ObservingFacility gml:id="_0-854-0-1">
    <gml:identifier codeSpace="http://wigos.wmo.int">0-854-0-1</gml:identifier>
    <gml:name>Timo API I</gml:name>
    <wmdr:responsibleParty>
      <wmdr:ResponsibleParty>
        <wmdr:responsibleParty>
          <gmd:CI_ResponsibleParty>
            <gmd:role>
              <gmd:CI_RoleCode>
```

The interface also includes a "Submit XML" button and a "Get IC" link. The bottom of the page features a legend for station types: air, land or ocean surface, sub-surface, and lake or river.

2. Management console

1. Login

3. XML submission

4. To update the information of observation station, paste your XML

Summary

- OSCAR/Surface manages metadata comprehensively based on WIGOS Metadata Standard
 - 10 categories, reporting obligations, 3phase
- In OSCAR/Surface, the procedure of registration and the update of metadata is simple



- Make plans for registration of metadata and keep the data up-to-date
- The final goal is to manage all metadata in OSCAR/Surface

WDQMS

What is WDQMS?

- **W**IGOS **D**ata **Q**uality **M**onitoring **S**ystem
 - Addressed by the two **WIGOS Workshops on Quality Monitoring and Incident Management** held in December 2014 and December 2015
 - Based on the request to review and modernize **the Numerical Weather Prediction(NWP)-based monitoring** of the conventional components of the GOS.

WDQMS components

- WDQMS consists of:
 - the WIGOS **Monitoring** Function,
 - the WIGOS **Evaluation** Function and
 - the WIGOS **Incident Management** Function.



Monitoring



Evaluation

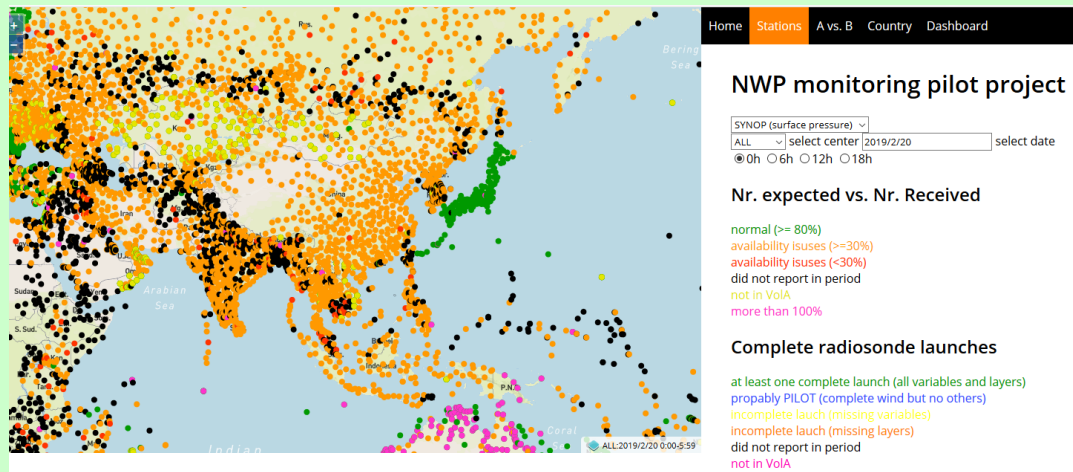


**Incident
Management**

Monitoring



- Essentially undertaken by **WIGOS Monitoring Centers** (e.g. Global NWP Centers)
- Monitoring reports for each station of the GOS should be generated and made available by the **WIGOS Monitoring Centers** on a daily basis





Evaluation

- To take the Monitoring outputs from **all the contributing WIGOS Monitoring Centers** taking into account all relevant information
- To generate **routine daily performance reports** based on at least two performance indicators:
 - a comparison with the **availability** to the expected number of observations as described in **OSCAR/Surface**
 - Trends in **network performance**
- Should be undertaken by **Regional WIGOS Centers**

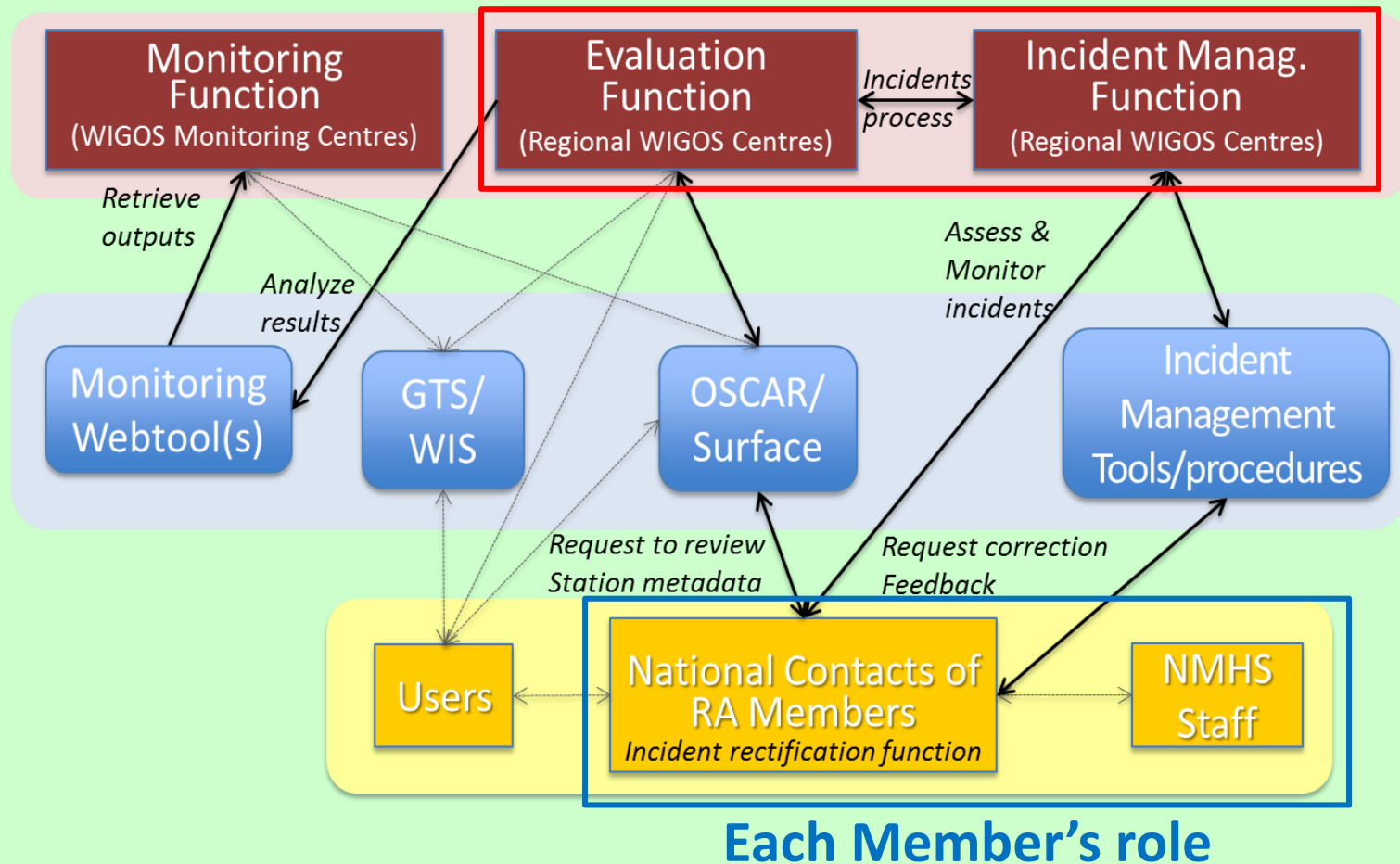
Incident Management



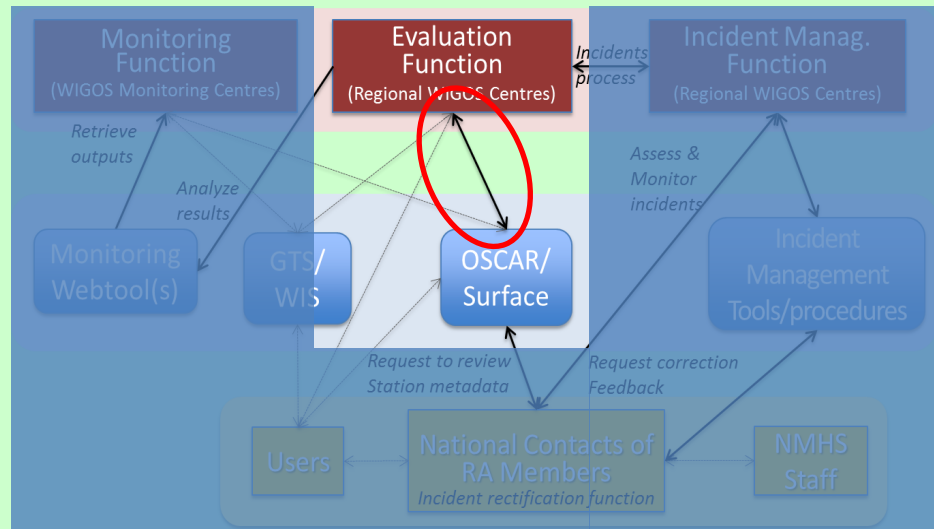
- To undertake the incidents raised by the Evaluation function
- Should be undertaken by **Regional WIGOS Centers**
- Key to success of this function is clear **communication** of the incident with the supplier
- Such communication is assumed to be realized by the **web-based issue tracking tools**
- In most cases, the task to correct the incident will be the responsibility of the suppliers / **Members**

The process of the WDQMS

RWC's role



Relation to the OSCAR/Surface



- Evaluation function should evaluate **availability**, **timeliness** and **accuracy** from monitoring outputs.
- Evaluation of **availability** requires the **expected number of observations** which should be referred to the OSCAR/Surface metadata.
- Evaluation of **accuracy** sometimes needs the information such as **barometer** or **station heights** and **station positions** in the OSCAR/Surface metadata.

Reference

TECHNICAL GUIDELINES FOR REGIONAL WIGOS CENTRES (RWCS) ON THE WIGOS DATA QUALITY MONITORING SYSTEM (WDQMS) FOR SURFACE-BASED STATIONS OF THE GOS (Technical Guidance)

http://www.wmo.int/pages/prog/www/wigos/documents/Tools/WDQMS-RWC_en.docx

Summary

- WDQMS composed of Monitoring, Evaluation and Incident Management functions.
- Clear communication is key to success.
- WDQMS refers to OSCAR/Surface as “correct” information, thus management of its metadata is fundamental.



Each Member should understand how
WDQMS works.

Thank you for your attention.