



# Quality monitoring of observation data in NWP Centre and overview of the WDQMS

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JMA/WMO Workshop on Quality Management  
of Surface Observations – RA II WIGOS Project

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# OUTLINE

- Current Monitoring
  - CBS Lead Centre for monitoring the quality of land surface observations in Region II
- WDQMS Pilot Project
  - The NWP Quality Monitoring Pilot Project on WIGOS Data Quality Monitoring System (WDQMS)



# **REPORT ON THE QUALITY OF LAND SURFACE OBSERVATIONS IN REGION II**

a consolidated list of stations suspected of reporting low-quality observation data of station level pressure, mean sea level pressure and geopotential height

# Report on the Quality of Land Surface Observations in Region II

- JMA publishes reports on the land surface observation quality monitoring
  - share to all RA II members, WMO and NWP Centres
  - a consolidated list of stations suspected of reporting low-quality observation data
  - every 6 months since 1991
  - as CBS Lead Centre responsible for monitoring the quality of land surface observations in Region II
- <http://qc.kishou.go.jp/>

## Consolidated lists of suspect stations in Region II (Asia)

### Introduction

Pursuant to Paragraph 22 of Attachment II.7 of the Manual on the Global Data Processing and Forecasting System (WMO No. 485), the Regional Specialized Meteorological Center (RSMC) Tokyo was designated by the President of the Commission for Basic Systems (CBS) as a Lead Center for monitoring the quality of land surface observations (i.e., SYNOP) in Region II in March 1991. The Center is responsible for monitoring the quality of land surface observations and maintaining consolidated lists of stations suspected of reporting low-quality observation data together with adequate evidence. The lists are to be passed on to the WMO Secretariat and monitoring centers participating in this activity as well as to Members of Regional Association (RA) II for their reference.

#### • Monitoring Results

|                    |                      |                     |
|--------------------|----------------------|---------------------|
| January-June 2017  | <a href="#">html</a> | <a href="#">pdf</a> |
| July-December 2016 | <a href="#">html</a> | <a href="#">pdf</a> |
| January-June 2016  | <a href="#">html</a> | <a href="#">pdf</a> |
| July-December 2015 | <a href="#">html</a> | <a href="#">pdf</a> |
| January-June 2015  | <a href="#">html</a> | <a href="#">pdf</a> |
| July-December 2014 | <a href="#">html</a> | <a href="#">pdf</a> |
| January-June 2014  | <a href="#">html</a> | <a href="#">pdf</a> |

## Report on the Quality of Land Surface Observations in Region II (Asia)

January – June 2017

No. 53

September 2017

RSMC Tokyo  
Lead Center for Monitoring Quality of Land Surface Observations

Japan Meteorological Agency  
1-3-4 Otemachi, Chiyoda-ku, Tokyo 100-8122  
Japan

# Most typical error and improvement

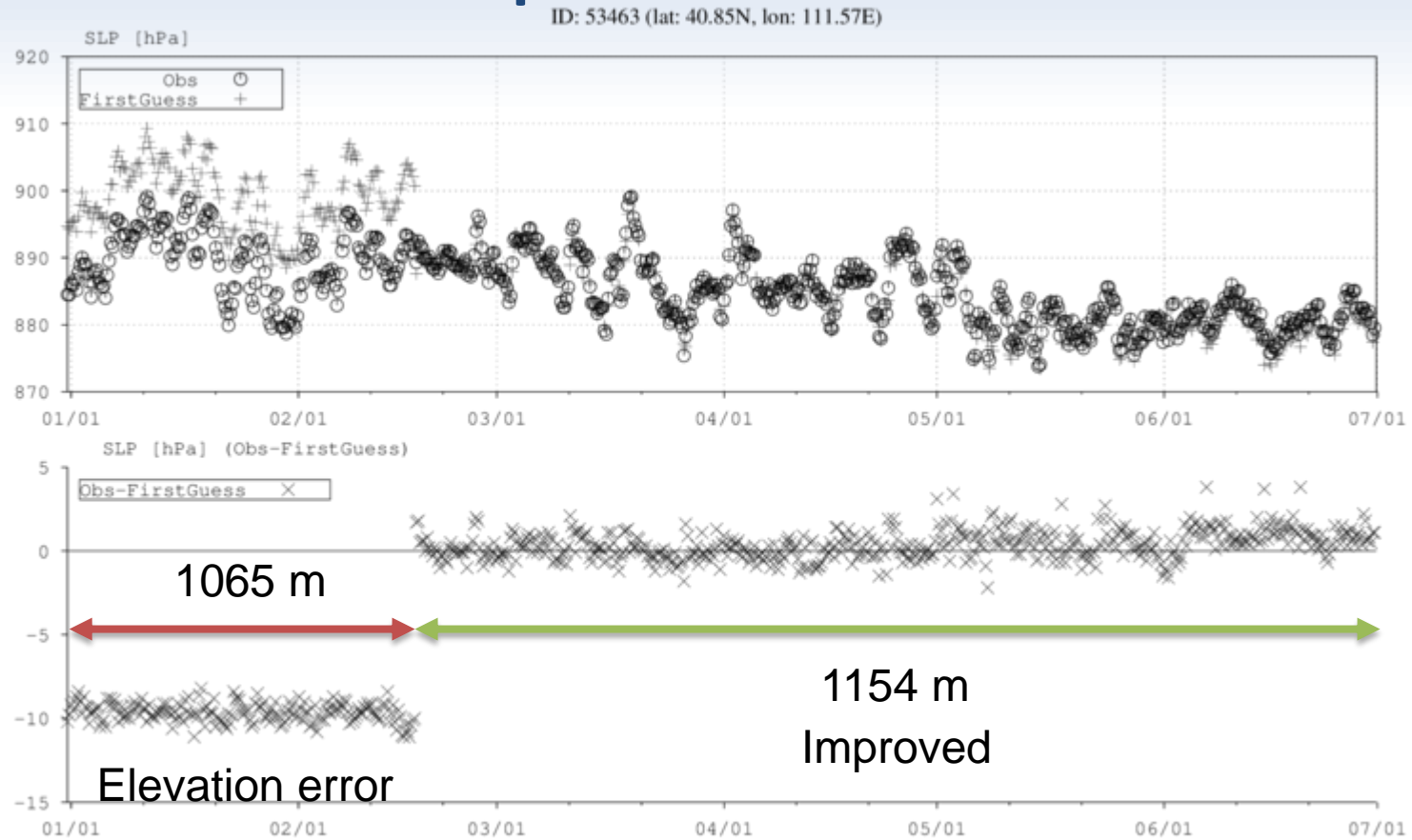
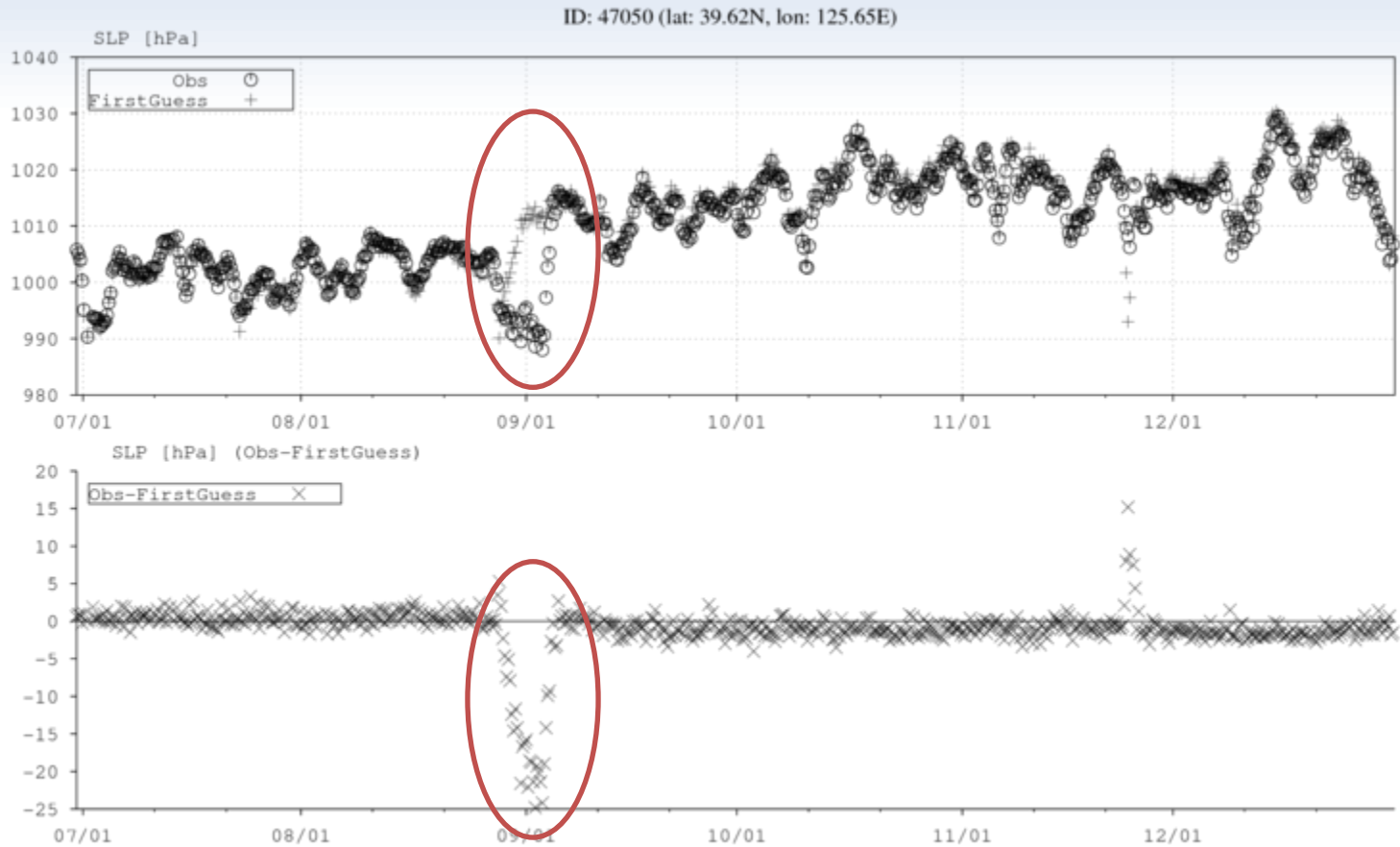


Figure 53 Time-series representation of SLP Obs minus FirstGuess for station 53463

# Short-term error



This station was NOT listed in the suspect lists

# Response of the improvement from NMHSs

| Report                                     | Country    | Date             | Comment  |
|--|------------|------------------|--|
| No32 July to December 2006 (March 2007)    | Nepal      | 27 June 2007     | 44146 elevation change   |
| No33 January to June 2007 (September 2007) | Kyrgyzstan | 26 October 2007  | 36985 location and elevation change  |
|  | China      | December 2007    | 59758 new location   |
|  | Kazakhstan | 10 December 2007 | 35416 elevation change   |
|  | Laos       | 14 December 2007 | 48921, 48924, 48925, 48927, 48935, 48938, 48952, 48957 elevation change and installment new mercury barometers |

Some Members took actions to remedy issues of their surface observations responding to the Reports.





# **THE NWP QUALITY MONITORING PILOT PROJECT ON WIGOS DATA QUALITY MONITORING SYSTEM (WDQMS)**

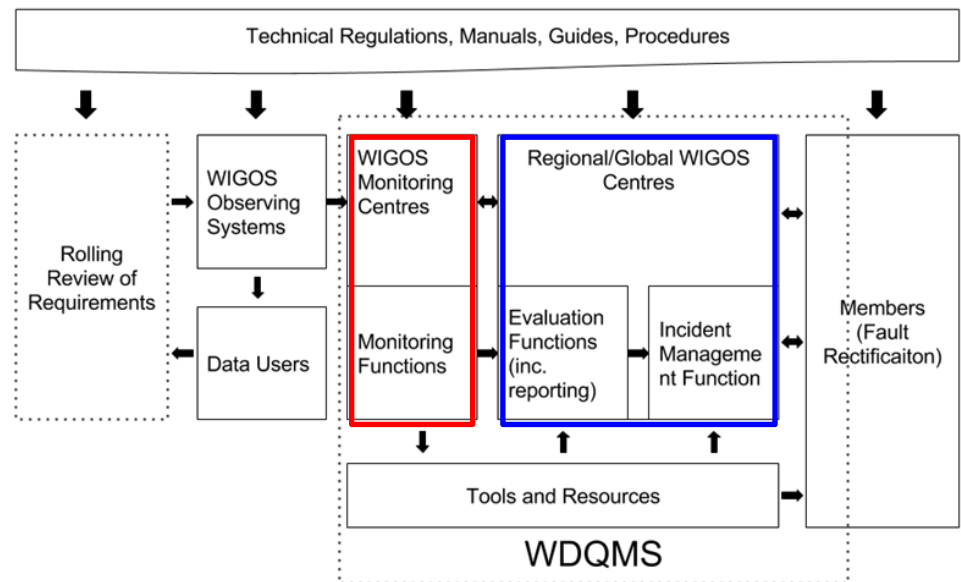


# WIGOS Data Quality Monitoring System

- To modernise the current monitoring
  - near-real-time monitoring of all WIGOS components
  - incident management with issue tracking system
  - link to OSCAR/Surface
- WDQMS Quality Monitoring Main Categories
  - data availability
  - timeliness
  - accuracy

# WDQMS Overview

- Three basic functional components
  - The WIGOS Monitoring Function
  - The WIGOS Evaluation Function
  - The WIGOS Incident Management Function

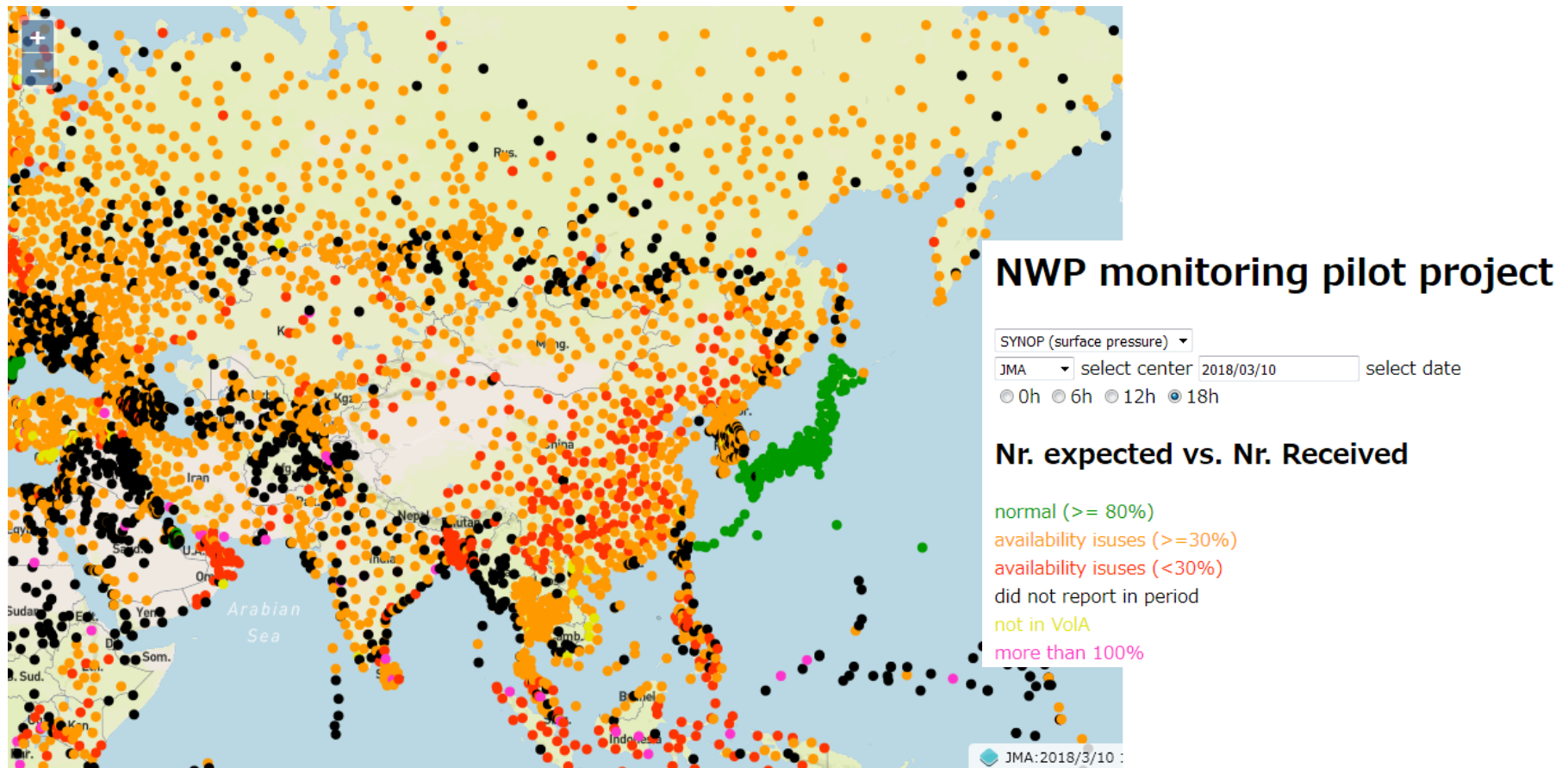


# The NWP Quality Monitoring Pilot Project on WDQMS

- Participating NWP Centres
  - ECMWF & NCEP (since 2015)
  - JMA & DWD (since 2016)
- Provide monitoring reports daily basis for each individual observing station, as a by-product of their data assimilation process

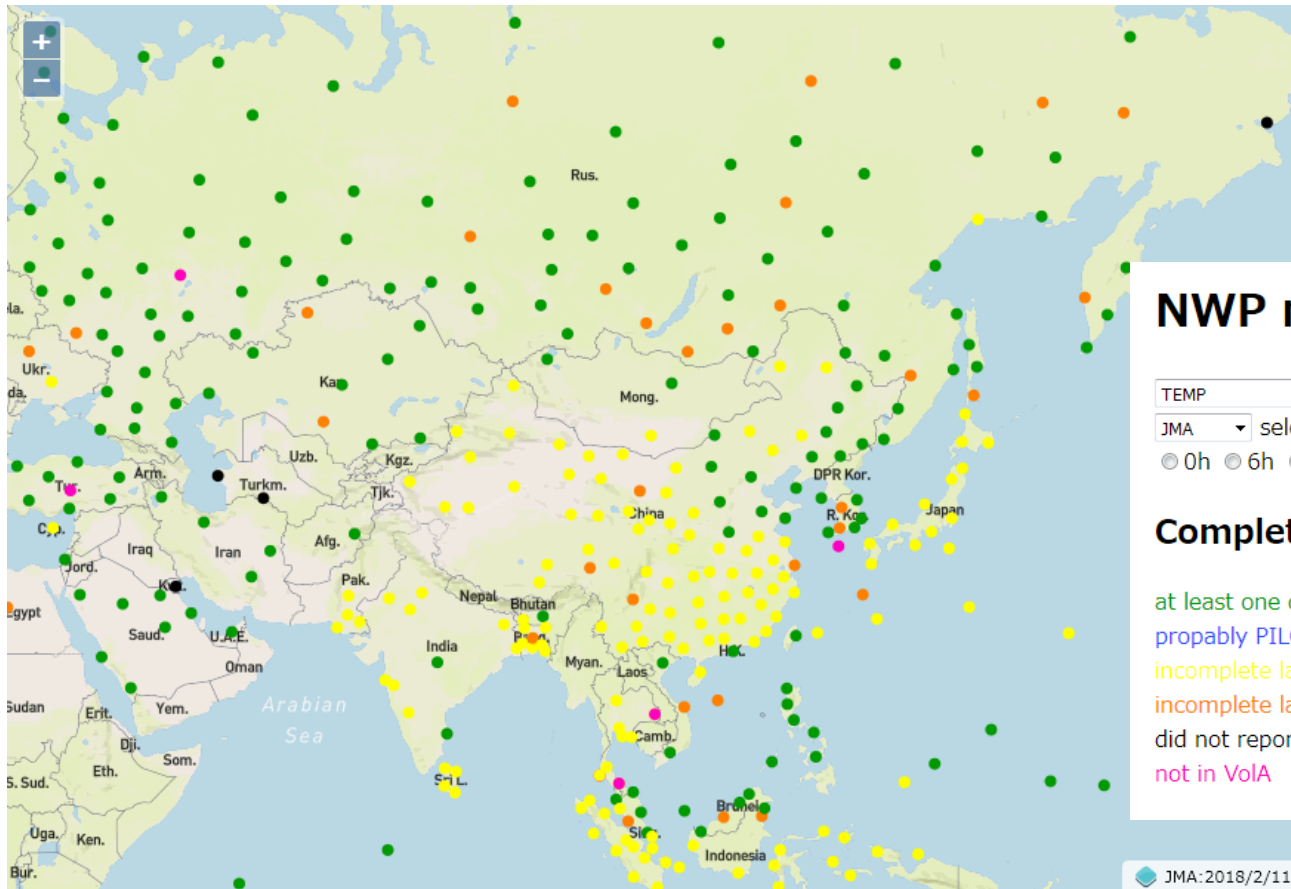
# WDQMS Monitoring Tools

- Surface pressure observation availability map developed by WIGOS Project Office



# WDQMS Monitoring Tools

- Upper air observation availability map developed by WIGOS Project Office



## NWP monitoring pilot project

TEMP   
JMA  select center 2018/02/11 select date  
☐ 0h ☐ 6h ☒ 12h ☐ 18h

## Complete radiosonde launches

at least one complete launch (all variables and layers)  
probably PILOT (complete wind but no others)  
incomplete launch (missing variables)  
incomplete launch (missing layers)  
did not report in period  
not in VoLA

JMA:2018/2/11

# WDQMS Evaluation & Incident Management Function

- Evaluation Function
  - Analyse Monitoring Function outputs
  - Take other information into consideration
  - Produce automatic reports with the issues raised as incidents
- Incident Management Function
  - Raise incidents with Members
  - Support Members in the resolution of Incidents
- Regional WIGOS Centre (RWC) will implement both functions



# Incident Management System

- Use online tracking issue system
- RWC raise incident ticket and contact to national focal points
- Record all feedback to the tickets

Incidents >  
Kenya

To get instructions how to create a new ticket or update an existing ticket proceed to [Instructions](#).

## Summary of Tickets

Please make sure to name the ticket file: Country-YYYYMMDD-HHMM-WMO ID (e.g. KMD-20160629-1000-63624). The 'Raise Date' and 'Raise Time' shouldn't be changed during the issue/incident correction process. To document the date of the status update please change 'Update Date' and 'Update Time' with each update.

Showing 33 items

| Ticket ID                      | Issue/ Incident | Incident Ticket No. | Raise Date     | Raise Time | WMO ID | Station name                            | Network | Priority  | Category            | Update Date        | Update Time | Ticket Status | Part of IMS | Completed |
|--------------------------------|-----------------|---------------------|----------------|------------|--------|---|---------|-----------|---------------------|--------------------|-------------|---------------|-------------|-----------|
| Sort                           | Sort            | Sort                | Sort           | Sort       | Sort   | Sort                                    | Sort    | Sort      | Sort                | Sort               | Sort        | Sort          | Sort        | Sort      |
| KMD-2016-0621-1000-6-60000-DUH | Incident        | 000                 | June 21, 2016  | 10:00      | 60000  | ABCOE                                   | Surface | Very High | Data availability Y | June 29, 2016      | 11:22       | Closed        | F           | ✓         |
| KMD-2016-0729-030-6-63740      | Incident        | 015                 | July 22, 2016  | 03:04 UTC  | 63740  | Jomo Kenyatta International NAI Airport | Surface | Low       | Data availability Y | October 24, 2016   | 09:25 UTC   | Closed        | F           | ✓         |
| KMA-2016-0712-133-5-63688      | Incident        | 005                 | July 12, 2016  | 13:35 UTC  | 63688  | ELOORET INTERNATIONAL AIRPORT           | Surface | Very High | Data availability Y | September 9, 2016  | 11:00 UTC   | Closed        | F           | ✓         |
| KMD-2016-0712-132-6-63766      | Incident        | 004                 | July 12, 2016  | 13:26 UTC  | 63766  | MAKINDU                                 | Surface | Very High | Data availability Y | November 16, 2016  | 08:49 UTC   | Open          | E           |           |
| KMD-2017-0314-061-1-63612      | Incident        | 28                  | March 14, 2017 | 06:11      | 63612  | Lodwar                                  | Surface | Very High | Data availability Y | March 14, 2017     | 06:18       | Open          | B           |           |
| KMD-2016-0802-055-0-63695      | Incident        | 017                 | August 2, 2016 | 05:50 UTC  | 63695  | Meru                                    | Surface | Very High | Data availability Y | November 16, 2016  | 06:00 UTC   | Open          | E           |           |
| KMD-2016-18-0704-6-3737        | Incident        | 011                 | July 18, 2016  | 07:04 UTC  | 63737  | NAROK                                   | Surface | Very High | Data availability Y | September 16, 2016 | 08:49 UTC   | Open          | C           |           |
| KMD-2017-0315-0517-63793       | Incident        | 30                  | March 15, 2017 | 05:17      | 63793  | Vul                                     | Surface | Very High | Accuracy            | May 8, 2017        | 07:54 UTC   | Open          | B           |           |

KMA-20160712-1335-63688

WDQMS Demonstration Project - RA I

## INCIDENT MANAGEMENT TICKET

### PART A: ISSUE IDENTIFICATION (Completed by issue reporter)

#### Reporters Details

|              |                      |       |  |
|--------------|----------------------|-------|--|
| Date/Time    | 12/07/2016 13:36 UTC | Name  |  |
| Organization | KMD                  | Email |  |

#### Station Details

|              |             |              |                               |
|--------------|-------------|--------------|-------------------------------|
| Network Type | Land(Fixed) | WMO ID       | 63688                         |
| Country      | Kenya       | Station name | Eldoret International Airport |

#### Issue Description

The SYNOP data from station 63688 has been missing in all the DA NWP centres

### PART B: ISSUE RAISED AS INCIDENT (PROCESSED INITIATION) (Completed by KMD)

|   |  |      |  |
|---|--|------|--|
| Date/Time                                 | 12/07/2016 13:39 UTC   | Name |  |
| Evaluation Results                        | Confirmed that the data from station 63688 is missing from ECMWF, NCEP and JMA |      |  |
| No Incident process required (Insert 'X') | Incident Ticket Number   | 005  | Priority (low, medium, high, very high) <b>very high</b> |

### PART C: RECEIPT CONFIRMATION (Completed by national contact)

|           |  |      |  |
|-----------|--|------|--|
| Date/Time | 13/9/2016  | Name |  |
| Comments  | Confirmed that SYNOP data is measured at the station and sent to the RTH Nairobi |      |  |

### PART D: ACTION PROPOSAL (Completed by national contact)

|   |           |      |  |
|---|-----------|------|--|
| Date/Time   | 13/9/2016 | Name |  |
| Details of Proposed Action/TimeLine to solve the Incident/Comments                                      |           |      |  |
| Follow up with the RTH to confirm why the SYNOP data is not available on the QTS by 16th September 2016 |           |      |  |

<https://sites.google.com/a/wmo.int/wdqms-demo-ra-i/home>



気象庁 Japan Meteorological Agency

# Summary

- JMA is a Lead Centre for monitoring the quality of land surface observations and responsible for monitoring the quality of land surface observations in Region II.
- Monitoring Reports are available at <http://qc.kishou.go.jp/> .
- JMA is participating in the NWP Quality Monitoring Pilot Project on WDQMS with ECMWF, NCEP and DWD.
- WDQMS monitoring tools and guidance for the procedures are being developed in Task Team on WDQMS.