Activities of Regional WIGOS Centre(Beijing)
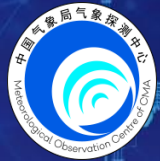
(RWC-Beijing)

LIN Xuejiao

Meteorological Observation Centre of
China Meteorological Administration

Outline

I. Background

II. Activities of RWC-Beijing (2018-2020)

III. Capabilities for initial operational phase (2020-2023)

IV. Ending & Future plan

二区协WIGOS区域中心-北京
Regional WIGOS Center in RA II (RWC-Beijing)

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Functions

Regional coordination, guidance, oversight and support of WIGOS implementation and operational activities at the regional and national levels (day-to-day level of activities).

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) and follow-up with data providers in case of data availability or data quality issues.

Optional Functions
(a) assistance with the coordination of regional/sub-regional and national WIGOS projects;
(b) assistance with regional and national observing network management;
(c) support for regional capacity development activities.

RWC-Beijing cover both mandatory and optional functions

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Regional WIGOS Center in RA II (RWC-Beijing)

Milestones of RWC-Beijing

2021 Initial operational phase...

2020 Transition from project to operational phase.

2019 RWC-Beijing pilot phase.

2018 Designed and developed WIGOS metadata management and WIGOS performance monitoring tools.

2017 Applied to establish RWC of RA II.

二区协WIGOS区域中心-北京
Regional WIGOS Center in RA II (RWC-Beijing)

Outline

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二区协WIGOS区域中心-北京
Regional WIGOS Center in RA II (RWC-Beijing)

Mandatory Functions

1. Regional WIGOS Performance Monitoring and Incident Management

Workflow

Land Surface Report

Radiosonde Report

Real-time Monitoring — 2018

Evaluation Report — 2019

Email the RA II National Focal Points
rwc-bj@cma.gov.cn
Website
http://www.wmcbj.net/publish/cms/documents/index.html) — 2020

RA II National Focal Points
RWC-Beijing, WMC-Beijing, RIC-Beijing

Follow-up → **Closed**

Identify low-quality stations regularly — 2021

Document Archiving

7
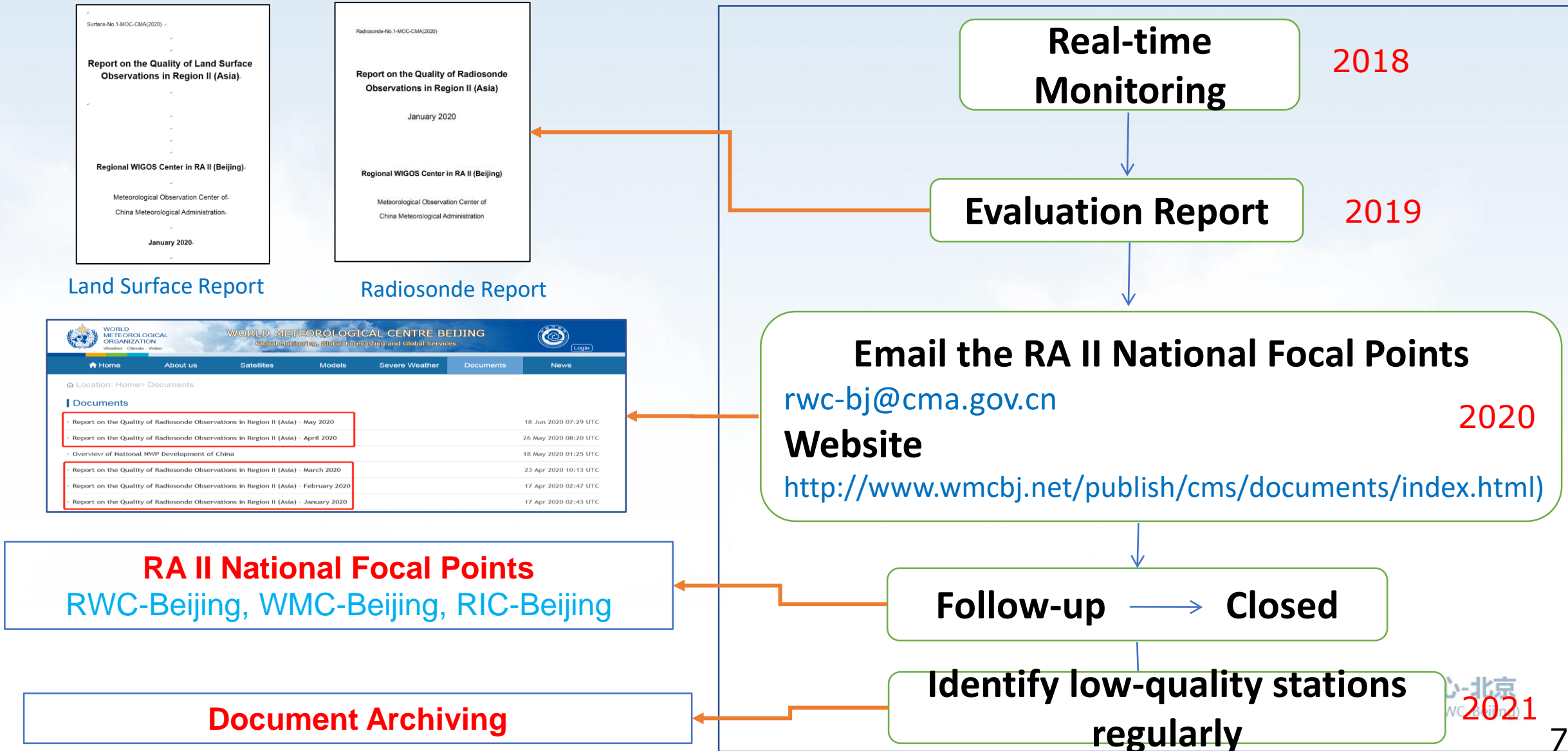
Data Quality Monitoring and Evaluation Technology

GRAPES numerical weather forecast

Land Surface

Station number： 1605

Times： 00、06、12、18

Elements： Mean sea level pressure、Geopotential height

Radiosonde

Station number： 289

Times： 00、12（UTC）

Elements & levels： Geopotential height 14 levels
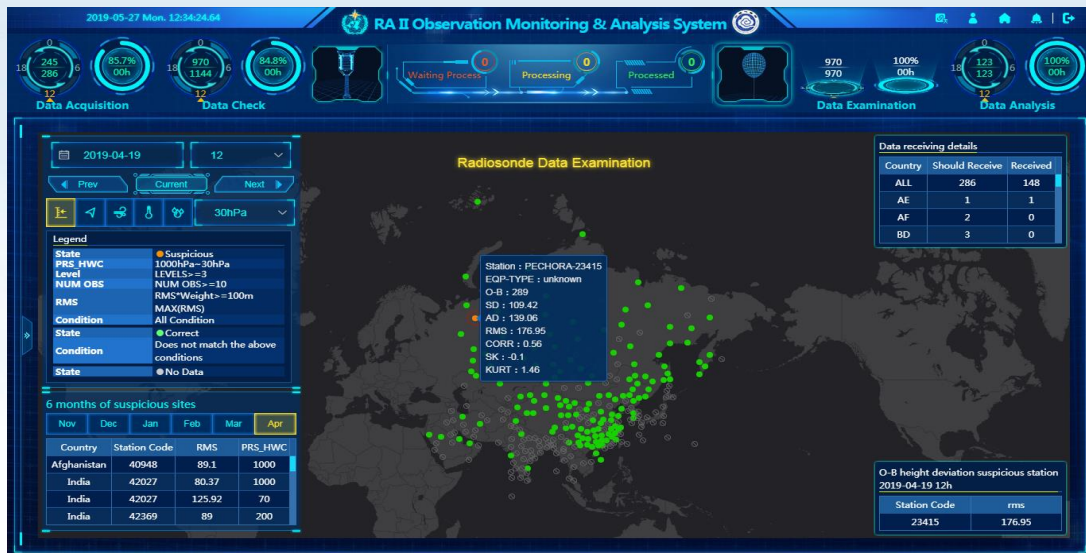Wind direction 6 levels
Vector wind 11 levels
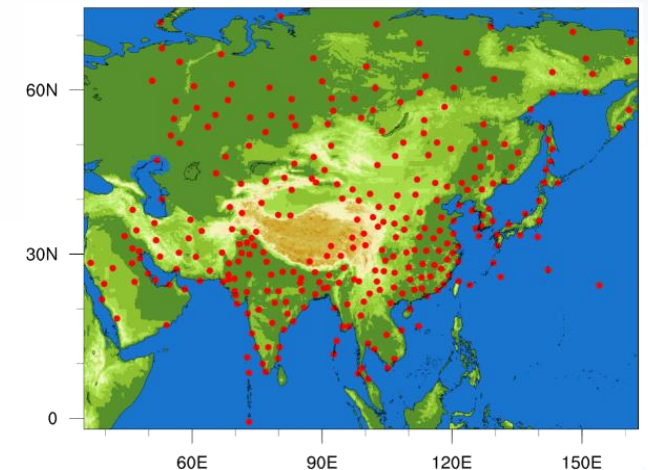
Combined with results from https://wdqms.wmo.int/

Land Surface stations

Radiosonde stations

RA II Monitoring & Analysis System
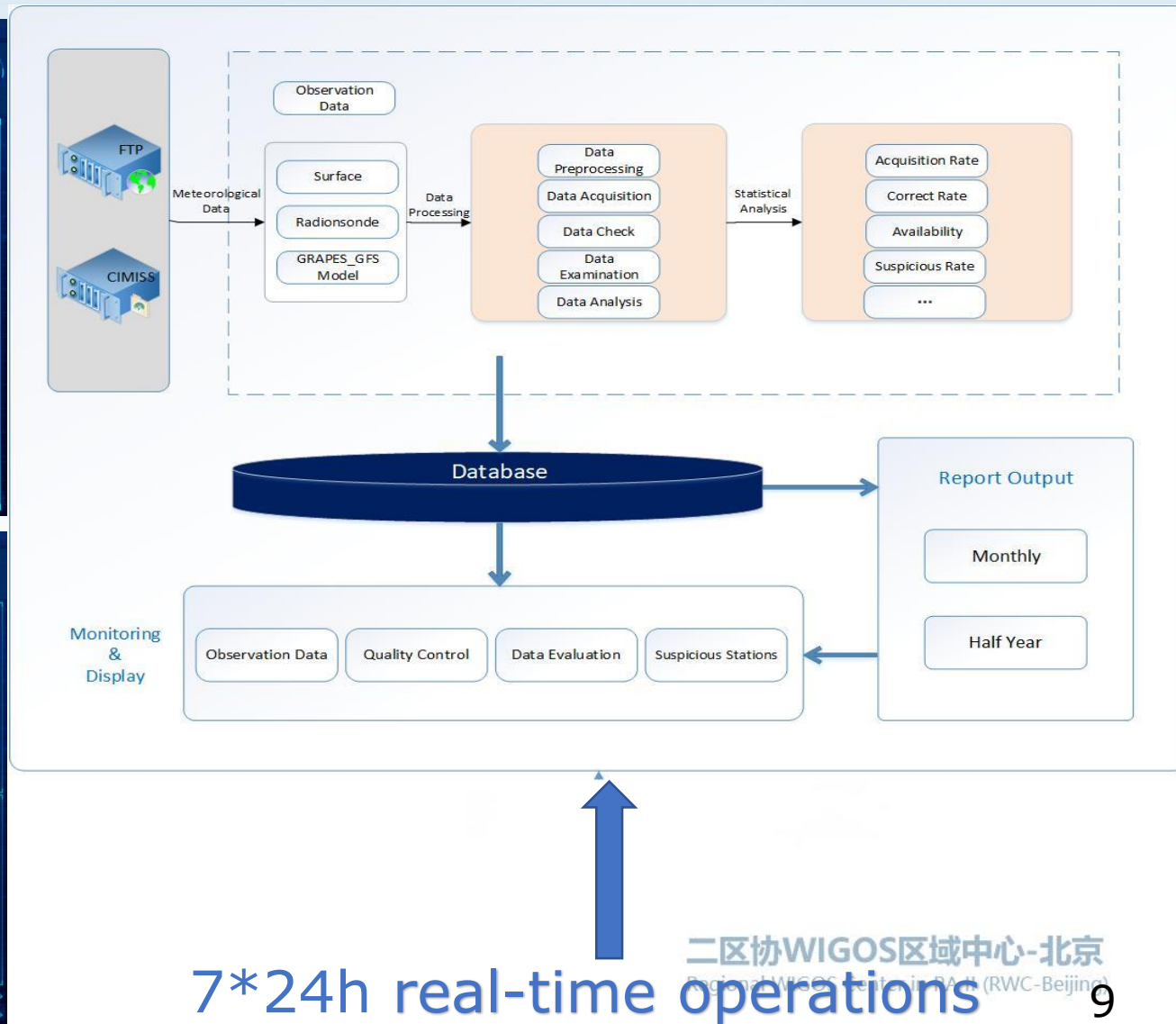
7*24h real-time operations

Issue Types

Land Surface

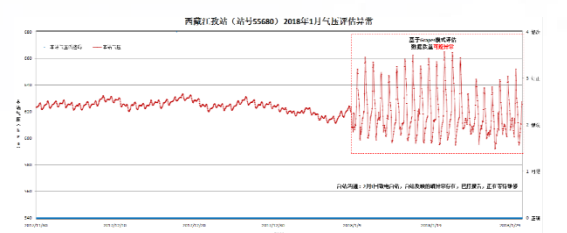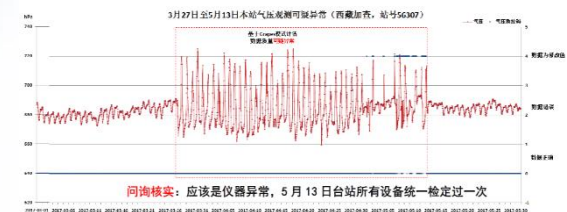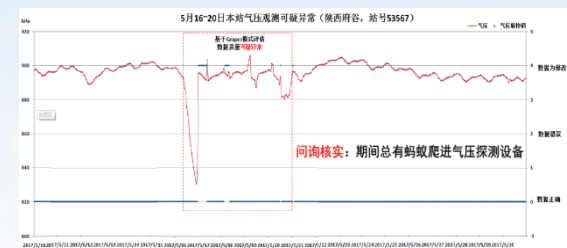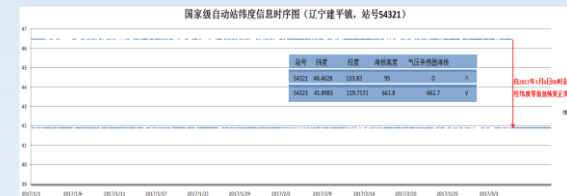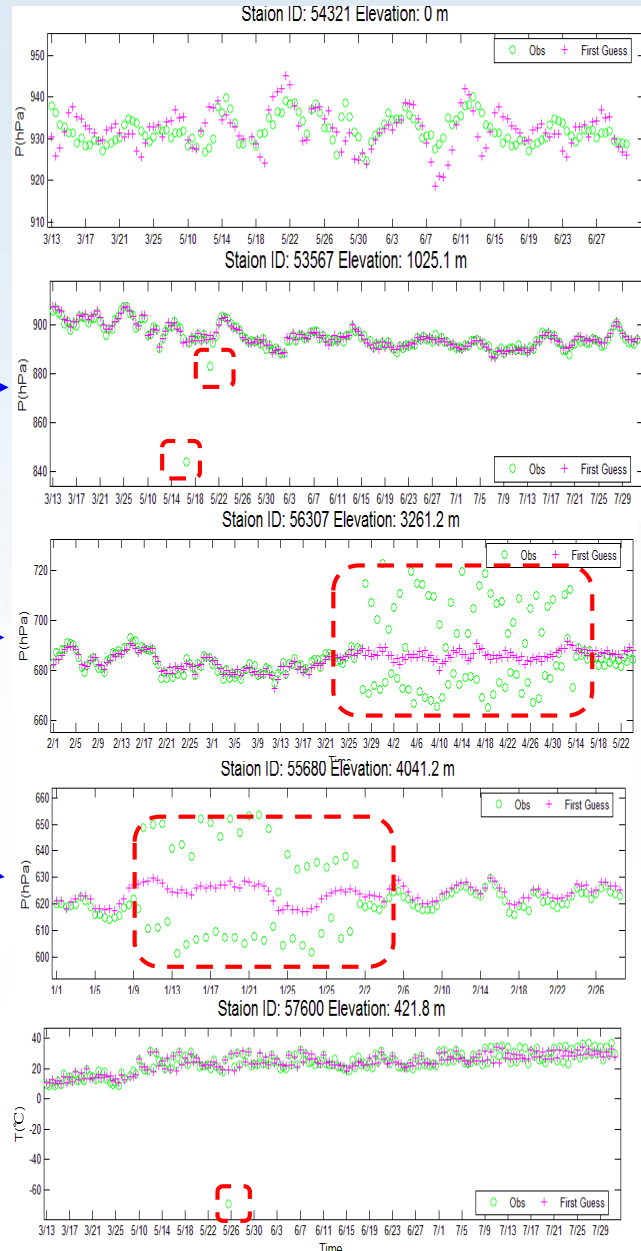- Latitude and longitude error →
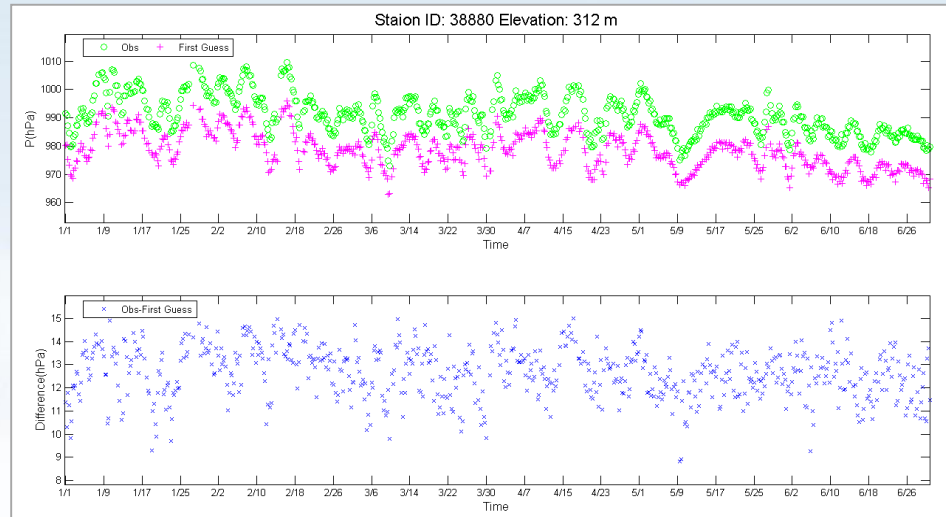- Biological interference →
- Pressure sensor issue →
- Temperature sensor maintenance →
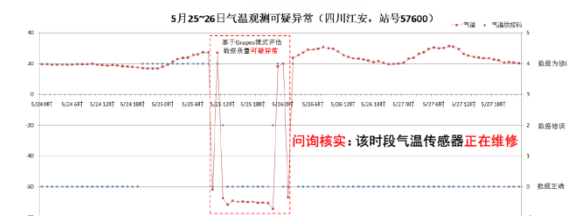
Incident Management

CONTRY	Num of E-mails	Metadata	Data acquisition	Data quality	Technical service
Republic of Koera	7		4 stations		5 E-mails
Japan	3				
Thailand	2		3 stations		1 E-mail
Kazakhstan	3				1 E-mail
Myanmar	3	5 stations			
Nepal			1 stations		
Uzbekistan				1 stations	
Oman				1 stations	
Turkmennistan				1 stations	
Afghanistan				1 stations	
Mongolia	4	3 stations			2 E-mails
Bangladesh	1				1 E-mail
Total	**23**	**8**	**8**	**4**	**10**

Incident Management

Abnormal pressure deviation
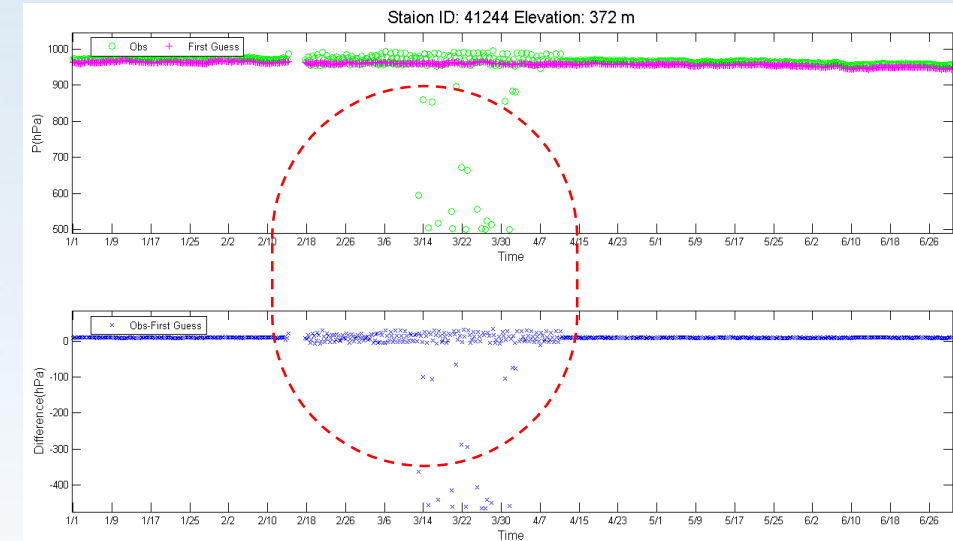
Pressure sensor issue

data acquisition

before

after

Advice & Improvement

Advice from WMO

3.1 Silent Stations

Table 1 List of silent stations from January to May

NUM	STATION_CODE	STATION_NAME	COUNTRY	LAT	LON
1	40938	HERAT	Afghanistan	34.22	62.22
2	40875	BANDARABBASS	Iran	27.22	56.37
3	40650	BAGHDAD INT. AIRPORT	Iraq	33.30	44.40
4	40582	KUWAIT INTERNATIONAL AIRPORT	Kuwait	29.23	47.97
5	44259	CHOIBALSAN	Mongolia	48.08	114.55
6	44277	ALTAI	Mongolia	46.40	96.25
7	44288	ARVAIHEER	Mongolia	46.27	102.78
8	48008	MYITKYINA	Myanmar	25.37	97.40
9	48042	MANDALAY	Myanmar	21.98	96.10
10	48053	MEIKTILA	Myanmar	20.83	95.83
11	48062	SITTWE	Myanmar	20.13	92.88
12	48097	YANGON	Myanmar	16.77	96.17
13	47058	PYONGYANG	Democratic People's Republic of Korea	39.03	125.78
14	41594	SARGODHA	Pakistan	32.05	72.67
15	38836	DUSHANBE	Tajikistan	38.58	68.73
16	38954	KHOROG	Tajikistan	37.50	71.50
17	38507	TURKMENBASHI	Turkmenistan	40.03	52.98

The list is the stations that did not receive data from January to May, please check the status of the stations according to the list, if it is closed or silent, please go to the OSCAR/Surface to modify the declared status.

Improve the Report

Response from NFPs

Solve the problems

2. Regional WIGOS Metadata Management

OSCAR/Surface-----Metadata Standard

●WIGOS metadata as primary template
✓10 categories
✓67 elements

●Add new metadata elements
✓Amount to 75 elements
 +Station evolution
 +On duty
 +Obstacle type
 +Interference source
 +Observation environment assessment
 +etc....
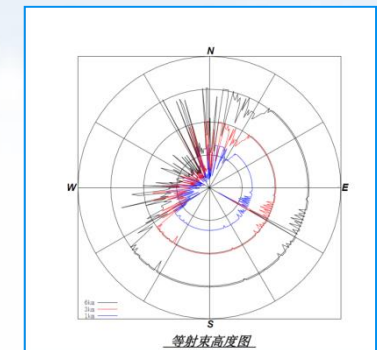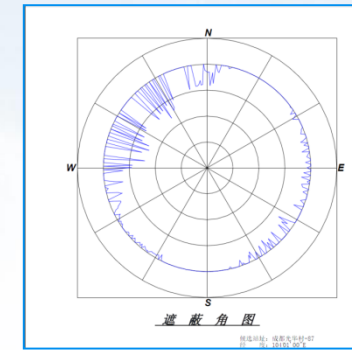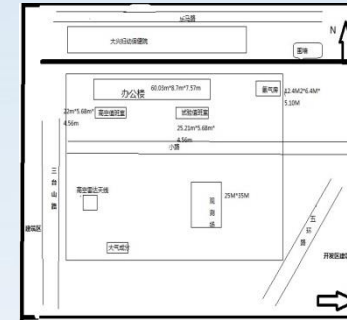
OSCAR/Surface----- Share Metadata

API

OSCAR DB

CMA OSCAR Data Base
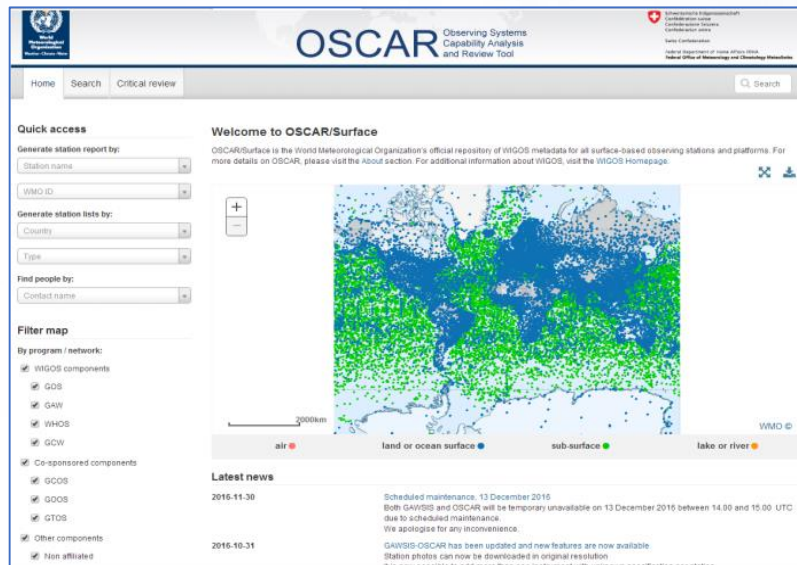
OSCAR

CMA OSCAR System

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Regional WIGOS Center in RA II (RWC-Beijing)

OSCAR/Surface-----Metadata Maintenance

For CMA
- Updated the metadata of relocated stations
- Corrected any inaccurate and/or missing metadata
- Registered metadata of 16 GCW stations in 2020

For RAII Members:
- Helped Mongolia modify the metadata in OSACR/Surface.
- Noticed 5 stations in Myanmar are closed and the metadata needs to be modified in OSCAR/Surface.

Optional Functions

3. Training & Technical Exchange

➢ **685 candidates**, from **74 Members**, including RA I, II, III, IV, V, VI. More than **400 trainees (60%** of the total numbers) have completed the main courses.

Bar chart:
- RA I: 31 (Number of countries and regions), 248 (Number of people)
- RA II: 22 (Number of countries and regions), 220 (Number of people)
- RA III - RA VI: 21 (Number of countries and regions), 218 (Number of people)

■ Number of countries and regions ■ Number of people

**Part I
Orientation**
Course Orientation and Ice breaking
Introduction of Meteorological Services in CMA
Introduction of Education and Training in CMA Training Centre

**Part II
The Maintenance of Automatic Meteorological Stations**
Components and principle of AWS
Installation and maintenance of the Installation and maintenance of the tipping bucket rainfall sensor
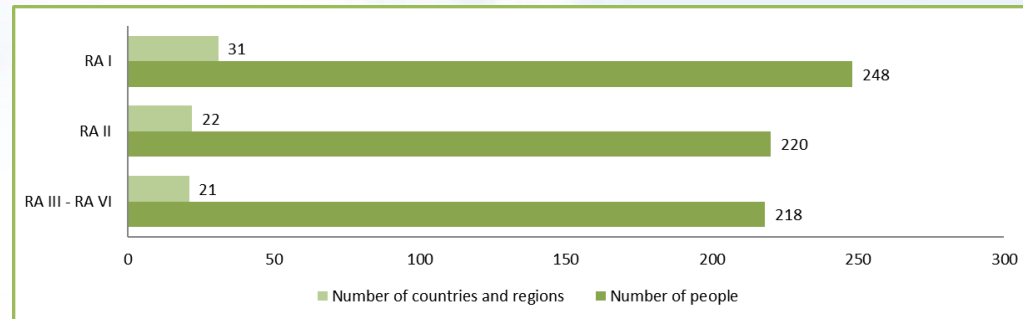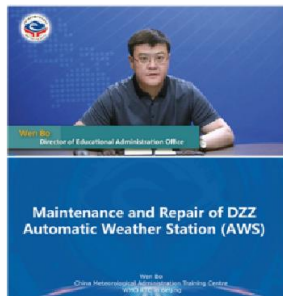
**Part III
OSCAR & Metadata**
Introduction of WMO Integrated Global Observing System (WIGOS)
WIGOS Metadata Management (OSCAR/Surface)

**Part IV
RWC**
China's Integrated Meteorological Observing System
Regional WIGOS Centre(RWC) and Data Quality Evaluation

Re: WIGOS Metadata Management (OSCAR/Surface)
by Kartika Saridewi - Monday, 3 August 2020, 1:00 PM
I'm really excited to join with this course :)

Re: WIGOS Metadata Management (OSCAR/Surface)
by UJJWAL KANTI PAL - Tuesday, 11 August 2020, 6:47 PM
I'm really excited to join with this course :)

Thanks, for this good training
by Mohamad Ma'rufbada - Sunday, 16 August 2020, 10:29 PM
so, i just want to say thanks to all of the trainer and the organizer.. however this training provide good knowledge for me. Big thanks from Papua.

Thanks
by Sayed Mohammad Reza Judi - Sunday, 16 August 2020, 4:12 PM
Thank you for holding this training course and I hope I can participate in your next courses as well

Acknowledgment
by Miad Dehghani - Friday, 21 August 2020, 10:12 AM
Hi CMA,
Thanks for holding this course and hope I participate in the other ones at future.

Thank you CMA
by Putu Hadi - Friday, 21 August 2020, 9:08 AM
Thank you CMA

Thank you CMA
by dodi apandi - Friday, 14 August 2020, 6:29 PM
The course was very informative. Thank you

Thanks CMA
by Mutau Mutau - Wednesday, 19 August 2020, 7:10 PM
continue good work

Thank you for the training
by Mattaniah Eteuati Salesa - Monday, 17 August 2020, 6:01 AM
We appriciate you all

Thanks CMA
by Rajendra Charan - Monday, 17 August 2020, 1:03 PM
Thanks for this training

Messages from trainees

Dear Ms Lin Xuejiao,

Thank you very much for sharing this information. It is great that RWC Beijing is organizing such courses.
I hope that the course is proceeding well.
I am really impressed by the number of people that registered to the course. This suggests there is very strong demand for such courses.

WMO (previously through CIMO and CBS), and now through INFCOM is working on several activities related to this topic.
I would therefore be really interested to know if any information, possibly lecture notes, or recordings of the presentations are/will be available on-line. If so, we would be really grateful if you could provide us with a link to such information, that we could share with relevant WMO expert teams.

Maybe some collaboration between the INFCOM expert teams and the RWC could be beneficial to both parties in the organization of future activities.

Many thanks in advance for your feedback and best regards,

Email from WMO

Isabelle Rüedi

International Technical Training, Comparison and Technology Exchange
RWC-Beijing & Regional Instrument Centre(Beijing)

Time	Country	Event
2016.5	Indonesia Democratic People's Republic of Korea	Technical Training International Comparison
2016.9	Mongolia	International Comparison
2017.9	Multi-Country Mission	Technology Exchange
2017.9	United States	Technology Exchange
2018.5	Multi-Country Mission	Technology Exchange
2018.11	RA II Members	Workshop
2018.11	Pakistan	International Comparison
2018.11	Mongolia	International Comparison
2019.4	Republic of Koera	Technical Training
2019.12	Republic of Koera	Technical Training

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Workshop--Beijing，Nov 2018

Beijing，Nov 2018

CMA & KMA, Beijing, Dec 2019

CMA & KMA, Beijing, Apr 2019

NAMEM & CMA, Nov 2018

Beijing, Nov 2017

SHMA & CMA, May 2018

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Optional Functions

**4. Implementation of the
Rolling Review of Requirements (RRR)**

The Practices of RRR Process
Helped Mongolia and Lao.P.D.R design network layout(2019-2020)

It is recommended to add 50 land surface stations.

land surface stations

It is recommended to add 6 upper-air stations.

upper-air stations

It is recommended to add 20 lightning observation stations and 3 wind-profiling radar .
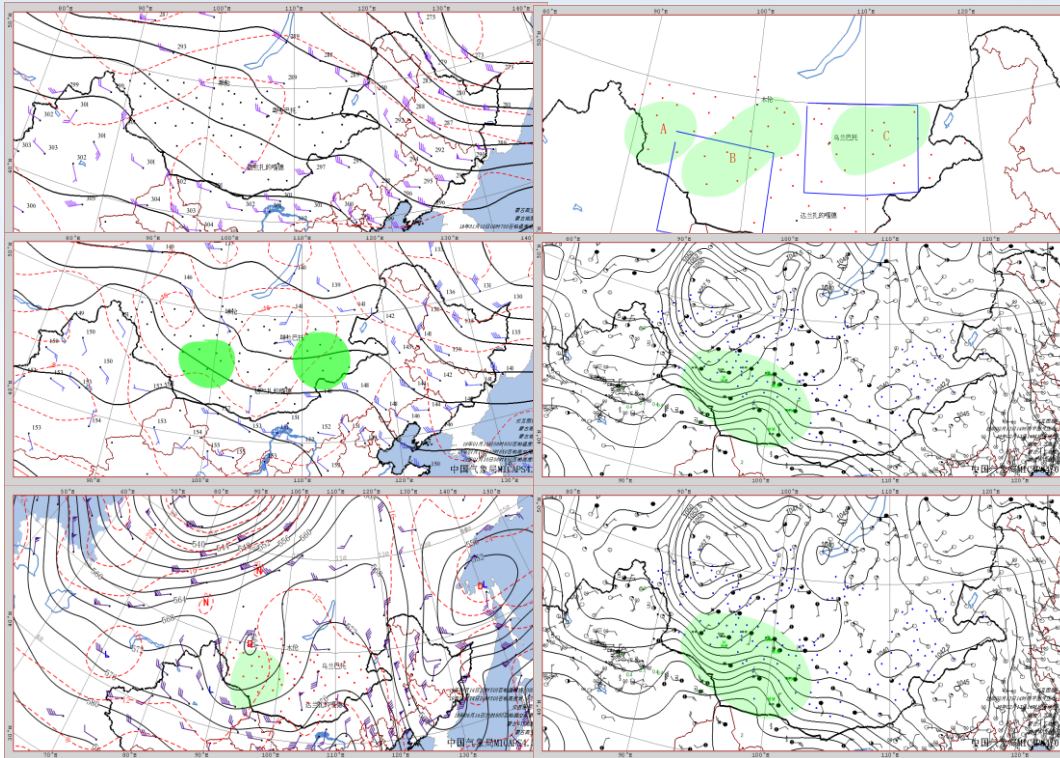
upper-air stations-
It is recommended to increase the station density to at least below 80km.

land surface stations-
It is suggested to add 3 stations.
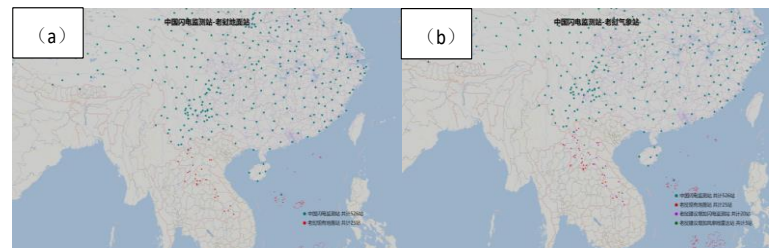
lightning observation and wind-profiling radar

Outline

I. **Background**

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III. **Capabilities for initial operational phase （2020-2023）**

IV. **Proposal & Future plan**

二区协**WIGOS**区域中心-北京
Regional WIGOS Center in RA II (RWC-Beijing)

Basic & Technical Infrastructure

National Meteorological Observation Operations Platform

- 7 * 24 duty tasks
- Monitor data quality in real time
- Quickly find and solve problems
- Adequate, secure, fully-equipped
- adequate information technology facilities and infrastructure
- Powerful processing ability and storage

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Human Resources & Operating Mechanism

Management

CMA → Management Team

Management ↓

MOC of CMA → Operation Office

↑

GISC, WMC, RIC, RCC, RTC
......

Collaboration

Technical Management	Foreign Affairs Management
Pei Chong	Xu Xianghua
Wang Jiankai	Chen Yongqing
Yang Xiaowu	Na Xiaodan
Li Changxing	Xu Wanzhi
Liang Haihe	
Wu Lei	
Zhao Peitao	

Specialists

Name	Responsbility
Shi Lijuan	OSCAR/Surface
Guo Jianxia	RRR
Li Cuina	Quality Evaluation
Cui Xiai	AMDAR
Guo Qiyun	Radiosonde
Lin Xuejiao	Surface
Zhao Xu	RIC Beijing
Li Xiaoxia	Ocean

→ Operation Office

Real-time on Duty

Responsibility	Number
The chief on duty	12
Staff on duty	22
Staff on guarantee for operation and maintenance	3

Links to other WMO Entities

RIC-Beijing: Regional Instrument Centre
Metrology knowledge training and instrument calibration

GISC-Beijing: Global Information System Centre
International data exchange and data support(WIS,GTS)

WMC-BJ: World Meteorological Centre
Models and forecasts.

RTC-Nanjing / Beijing : Regional Training Centre
Training courses

RCC-BJ: Regional Climate Centre
Long-range forecasts and products

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Financial Resources

2018
Funds for workshop

2019
Funds for operational platform，technical research, system construction

2020
Funds for training, hiring staff on duty, system construction and maintenance

2021
Funds for workshop, training, system upgrade
……..

CMA will continue to invest for RWC project

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Regional WIGOS Center in RA II (RWC-Beijing)

Supports & Services

a) Regulatory assessment report. **Done**

b) Incidents management by WDQMS and Reports. **Done**

c) Metadata management in OSCAR/Surface. **Done**

d) OSCAR/Surface Machine-to-machine application support.

e) Network evaluation and design services by RRR tool. **Done**

f) Visiting scholar.

g) Training and workshop. **Done**

h) Instrument calibration services. **Done**

THANKS

Please contact us at any time.
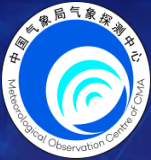
Regional WIGOS Center in RAII—Beijing(RWC-Beijing)
(Meteorological Observation Center of CMA)

rwc-bj@cma.gov.cn