Observation network and data collection and processing systems

Observation network and data collection and processing systems

Abdulaziz AlBalooshi
Bahrain Meteorological Directorate
Kingdom Of Bahrain

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Observation Network

Provide a summary of your observation network:

1. **Synoptic stations**
   - ❖ number of stations(1), number shared in GTS (1), frequency (SM, SI = 8 times)
   - ❖ Which format (SYNOP)

2. **Automatic Weather stations**
   - ❖ Total number of stations (7)
   - ❖ Number of stations shared on GTS and update frequency (Nill)
   - ❖ Data logger types and data formats (AMS 111, CSV format)

3. **Radio-sounding network**
   - ❖ Total number of stations (Nill)
   - ❖ Number of stations shared on GTS and update frequency (Nill)
   - ❖ Data formats used (ASCII, BUFR, or other to specify)

Data Collection and Processing Systems

Please provide an overview of your current data collection and processing systems, including:

1. **Data Collection**: How is data gathered from your observation network? *GTS from Jeddah, GTS via AFTN/AMHS, SADIS FTP & API - from UKMO, Satellite from EumetSat, ICON - from DWD, Weather Radar and AWOS.*
2. **Data Aggregation**: *What methods or systems are used to compile and organize the collected data? The collected data are received, processed, complied, distributed in MW system.*
3. **International Data Sharing**: How is your data currently published on the GTS? *The data are shared via GTS Jeddah, AFTN/AMHS network*
4. **IT Infrastructure**: What hardware, software, and platforms used for these tasks? *HW: High Availability Cluster System (Servers, switches and internet lines). SW: Moving Weather from IBL soft company*

Observation network and data collection and processing systems

Name: Walid Ibrahim Gomaa
Egyptian Meteorological Authority
Egypt

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Observation Network

Observation Network:

1. **Synoptic stations**
   - Egypt has 28 synoptic stations, all of them shared in GTS at the main and intermediate synoptic hours.
   - The format of data is in TAC (SYNOP) format.

2. **Automatic Weather Stations**
   - Egypt has 72 AWS stations
   - 28 stations shared on GTS at the main and intermediate synoptic hours.
   - Data logger types: vaisala, Campbell scientific, MicroStep, and Theodor Friedrichs
   - Data formats: raw data, SYNOP, METAR, BUFR

3. **Radio-sounding network**
   - Egypt has 5 Radio-sounding stations.
   - Each station shared on GTS one time a day.
   - The data formats used is in TAC and BUFR.

Data Collection and Processing Systems

1. **Data collection: Data are mostly collected via wireless communication networks.**
2. **Data Aggregation**: The data coming from all kind of stations are aggregated on AMSS system to be disseminated to other systems including CDMS.

International Data Sharing:

1. Egypt is sharing its data on GTS through the direct connections (circuits) with Moscow, Jeddah, Algeria, New Delhi, Khartoum, and Tripoli.
2. **IT Infrastructure**:
    1. Software:
        1. MESSIR-COMM as AMSS.
        2. Clisys as CDMS.
        3. Cobalt, AviMet, WOaRS as AWOS.
    2. Platforms:
        1. Linux
        2. Windows

Iraq Meteorological Organization (IMO)

Prepared by :

Samer Shuaa Abdulnabi AL-MAYYAHI

Iraq

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Overview

- The Iraqi Meteorological and Seismological Organization (IMO) is affiliated with the Ministry of Transport. It was originally established in 1923 by British forces.
- In 1936, the organization came under the supervision of the Iraqi government, specifically the Civil Aviation Authority. It now operates under the direct supervision of the Ministry of Transport.
- The organization manages 35 meteorological stations distributed across Iraq's governorates. It provides technical support and advisory services to government institutions, playing a vital role in economic development, sustainable projects, and various other fields.
- IMO follows international guidelines, recommendations, and obligations set by the World Meteorological Organization (WMO).
- Meteorological data (SYNOP) is transmitted through the Aeronautical Message Handling System (AMHS)—a communication system used in civil aviation to exchange official messages between civil aviation authorities, airlines, airports, and air navigation service providers.

Summary of observation network synoptic station

1 : Synoptic station

- **IMO operates 35 synoptic weather stations that provide real-time data on temperature, humidity, wind speed, and atmospheric pressure. These stations offer comprehensive observations of weather conditions.**
- **The stations are integrated with the Global Telecommunication System (GTS) and share data at regular frequencies.**
- **IMO has developed a new program to create a comprehensive weather archive that includes most weather components, using PHP as the programming language. This presentation introduces a PHP-based surface weather monitoring system designed to collect and analyze real-time weather data, aiming to build a detailed archive of weather variables.**

Summary of observation network synoptic station

1 : Synoptic station

- **Data is updated every 3 hours according to GMT.**
- **The database sources are provided by meteorological stations located throughout Iraq.**
- **These stations are connected to the Weather Forecasting Department at the headquarters of the Iraqi Meteorological Organization in Baghdad.**

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Summary of observation network synoptic station

2 : Automatic Weather stations

- **The total number of stations is 28.**
- **All stations are connected to the GTS (Global Telecommunication System) and share the same data update frequency.**
- **Each station is equipped with a data logger (hardware) that records data over time using internal sensors.**

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Summary of observation network synoptic station

3 : Radio – Sounding Network

- **Iraq have only one radio sounding network station in Baghdad**
- **the station shared on GTS and update frequency data**
- **Formats use CSV**
- **IMO intend to purchase new radio sounding network will install in Basra meteorological station in province**

https://metological-iraq.online

Thank you for your attention

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Observation network and data collection and processing systems

Suzan AlZoubi
Jordan Meteorological Department
Jordan

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Observation Network

Provide a summary of your observation network:

1. **Synoptic stations**
   - number of stations: 30 , number shared in GTS: 8 , frequency: every 3 hours
   - Which format (SYNOP or BUFR): SYNOP

2. **Automatic Weather Stations**
   - Total number of stations: 30
   - Number of stations shared on GTS and update frequency: 0
   - Data logger types: Campbell Scientific, and data formats: csv

3. **Radio-sounding network**
   - Total number of stations: 1
   - Number of stations shared on GTS and update frequency: 1 (But now it is not issued due to the GPS interference issue in the Middle East)
   - Data formats used (ASCII, BUFR, or other to specify): ASCII

Data Collection and Processing Systems

Please provide an overview of your current data collection and processing systems, including:

1. **Data Collection**: How is data gathered from your observation network?
   Manual Observer and AWS data logger.
2. **Data Aggregation**: What methods or systems are used to compile and organize the collected data?
   Reports are sent via MESSIR Systems software
3. **International Data Sharing**: via dedicated circuits in MESSIR Systems, RMDCN network
4. **IT Infrastructure**: What hardware, software, and platforms used for these tasks?
   MESSIR Systems Software.

Observation network and data collection and processing systems

Fahad Alnajadah
Directorate General of Civil Aviation – Kuwait
Meteorological Department
Kuwait

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Observation Network

Provide a summary of your observation network:

1. **Synoptic stations**
   - ❖ number of stations : 1, number shared in GTS: 1 shared, frequency: every 3 hours
   - ❖ Which format (SYNOP or BUFR): Both

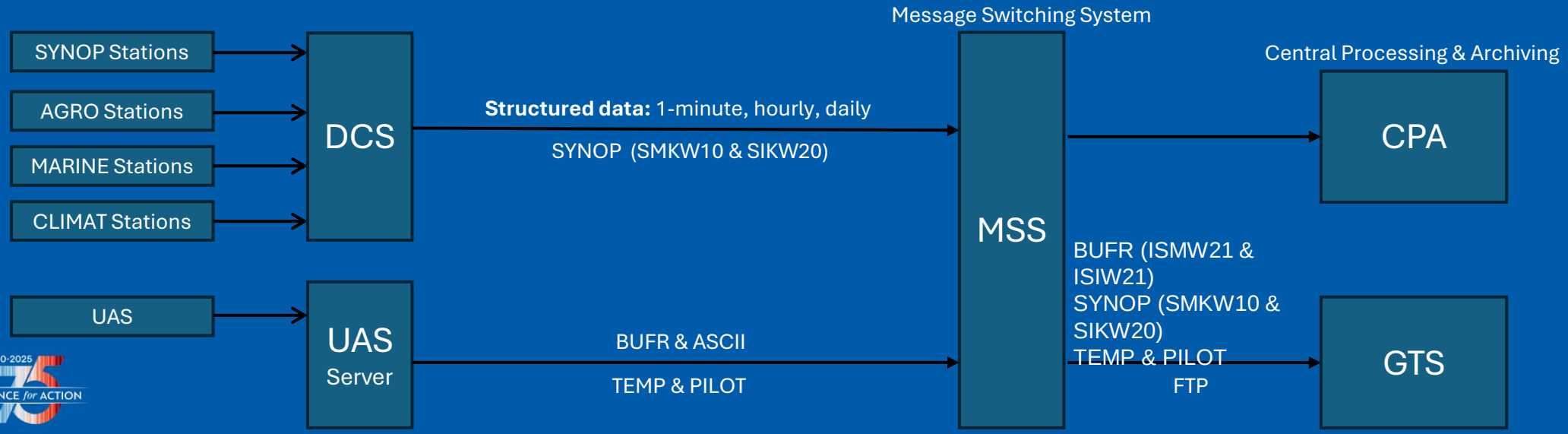
2. **Automatic Weather Stations**
   - ❖ Total number of stations: 28 now (10 more stations will be added, total 38)
   - ❖ Number of stations shared on GTS: 25 (currently 10) frequency: every 3 hours
   - ❖ Data logger types and data formats: Mercury Datalogger ML500, SYNOP & BUFR

3. **Radio-sounding network**
   - ❖ Total number of stations: 1
   - ❖ Number of stations shared on GTS and update frequency: 1, once daily (12:00)
   - ❖ Data formats used (ASCII, BUFR, or other to specify) : (TEMP, PILOT)

Data Collection and Processing Systems

Please provide an overview of your current data collection and processing systems, including:

1. **Data Collection**: How is data gathered from your observation network?
2. **Data Aggregation**: What methods or systems are used to compile and organize the collected data?
3. **International Data Sharing**: How is your data currently published on the GTS?
4. **IT Infrastructure**: What hardware, software, and platforms used for these tasks?



Observation network and data collection and processing systems

Emad Yousef Elosta
Libyan National Meteorological Center
Libya

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Observation Network

Summary of our observation network:

1. **Synoptic stations**
   - ❖ number of stations

     12

     number shared in GTS,

     12

     frequency N.A.

   - ❖ Which format (SYNOP or BUFR)

     SYNOP

Observation Network

2. **Automatic Weather Stations**
   - Total number of stations
     12
   - Number of stations shared on GTS and update frequency
     12
   - Data logger types and data formats

XARIA - PULSONIC P4-100

TEXT FORMAT

CSV FORMAT

Observation Network

❖Station Not in operation

Total number of stations

9

3. Radio-sounding network

- ❖ Total number of stations

  5

- ❖ Number of stations shared on GTS and update frequency

  NOT IN OPERATION

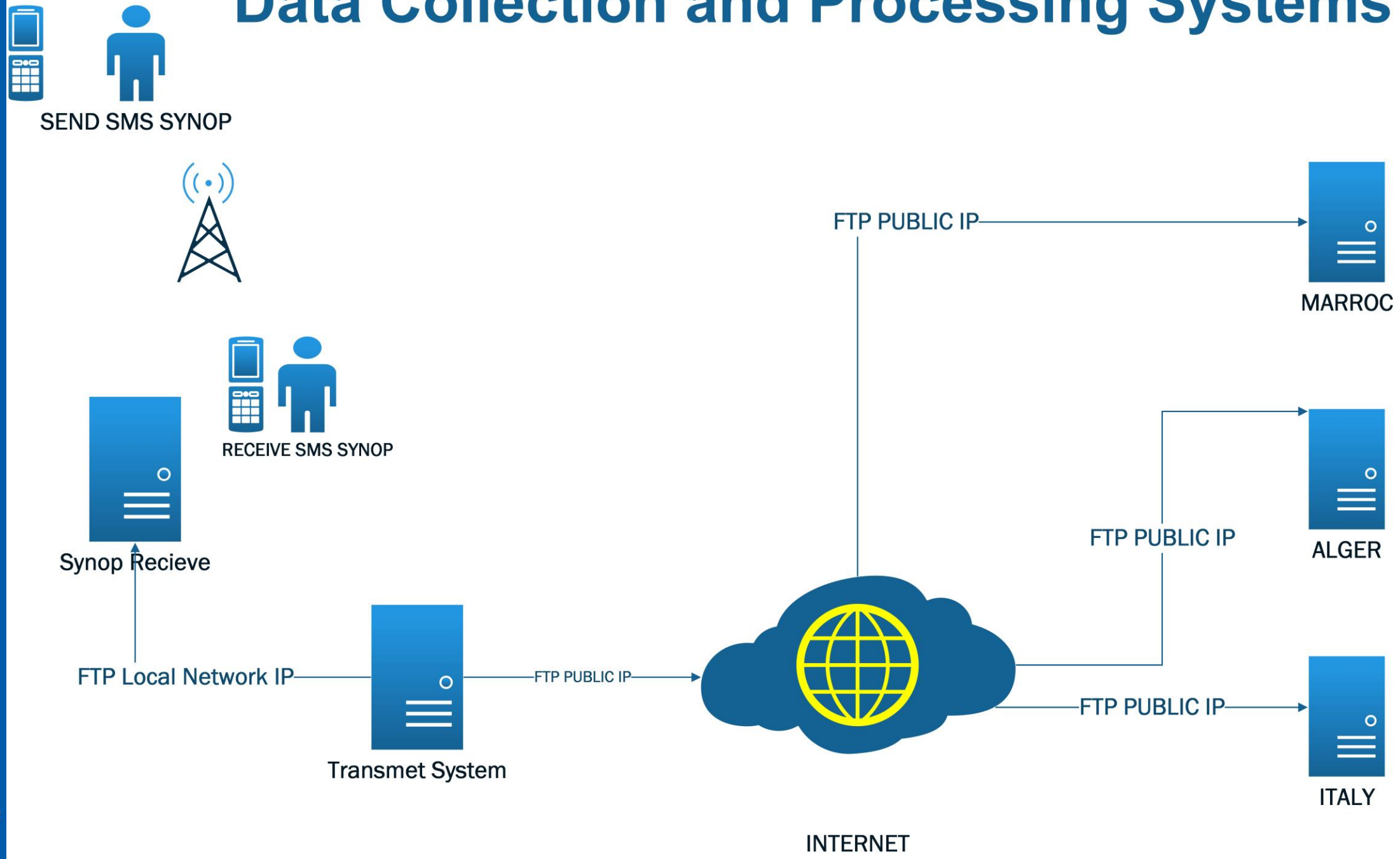
- ❖ Data formats used (ASCII, BUFR, or other to specify)

Data Collection and Processing Systems

Please provide an overview of your current data collection and processing systems, including:

1. **Data Collection**: How is data gathered from your observation network?
2. **Data Aggregation**: What methods or systems are used to compile and organize the collected data?
3. **International Data Sharing**: How is your data currently published on the GTS?
4. **IT Infrastructure**: What hardware, software, and platforms used for these tasks?

Data Collection and Processing Systems



WIS 2.0 Training Workshop, Muscat, Sultanate of Oman, 13-17 April 2025

Observation Network and IT Infrastructure

WEATHER CLIMATE WATER
TEMPS CLIMAT EAU

Malik bin Mubarak AL Ghafri
Directory General of Oman Meteorology

Sultanate of Oman

WMO OMM
World Meteorological Organization
Organisation météorologique mondiale

Observation Network

Provide a summary of your observation network:

- Synoptic stations (78 stations, 40 stations to GTS, hourly)
- Automatic Weather Stations (78 AWS + 8 Manned, 40 stations to GTS + 9 new stations 3 will be installed this year)
- Radio sounding network (2, shared both of them (Muscat & Salalah)
- Satellite system (2 stations)
- EARS HUB
- Polar Satellite system
- 5 Weather Radars
- 11 Wave Radar
- Oman Model
- Observation, study cases

IT and Telecommunication Infrastructure

Provide a summary of your IT and telecom infrastructure:

- Servers (75 server – 35 system) ATM + contingency data center
- Telecom (D500 mb/s, REN Network , 150 mb/s Backup buliding, RMDCN,…)
- Automatic Switching System(AMS 111 (1, 2 & 4)- Microstep)
- Principal RTH, GISC (RTH Jiddah) (GISC TOKYO)
- Connectivity used to collect data from AWSs (TCP/IP connection)
- IT staff

WMO OMM

Observation Network, Data Collection and Processing Systems

Omar Alobaidan - Majid Al Kuwari
Qatar Meteorology Department - Civil Aviation Authority
State Of Qatar

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Observation Network :

1. Synoptic stations :
   - ❖ Number of stations , number shared in GTS and frequency :
   - QMD has 7 Synoptic Stations, all of them are shared in GTS in Hourly Frequency.
   - QMD is considiring to add more Synoptics Stations.
   - ❖ Which format ?
   - QMD using both Synop & BUFR formats.

2. Automatic Weather Stations :
   - ❖ Total number of AWS :
   - 42 AWS (7 Synoptic Stations, 21 Remote Stations and 14 Road Stations).

   - ❖ Number of stations shared on GTS and update frequency :
   - 7 Stations updatuing Hourly.
   - ❖ Data Logger types and Data Formats :
   - Plug in data logger (JDL-790) with Remote Terminal Unit and text-based w/ comma separated Format.

Observation Network :

3. Radio-sounding network :

❖ Total number of stations :

- 1 Station - Hamad International Airport.

❖ Number of stations shared on GTS and update frequency :

- 1 Station shared on GTS and once a day frequency.

❖ Data formats used (ASCII, BUFR, or other to specify) :

- ASCII

4. Marine Buoys :

- QMD has 3 Marine Buoys Statios :
  - North Marine Buoy.
  - Haloul Island Marine Buoy.
  - Sherao'o Island Marine Buoy.

Data Collection and Processing Systems

- **Data Collection:** How is data gathered from your observation network?

- 4G, 3G & VHF communications & sending Frequency every 10 minutes.

- **Data Aggregation:** What methods or systems are used to compile and organize the collected data?

- In house developed application (Linux & Windows).

- **International Data Sharing: How is your data currently published on the GTS?**

- Pushing data to GISC_ Global Information System Center (Jeddah & Tokyo).

- **IT Infrastructure: What hardware, software, and platforms used for these tasks?**

Hardware: HP & Dell Server and
Software : IBL Systems, Corobor Systems, MFI Systems and for Platforms (OS-Linux & Windows).

Observation network and data collection and processing systems

Victor Panasij, Deputy Head of the Communications Control and Development Department

FSBE «Aviamettelecom of Roshydromet»

Russian Federation

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Observation Network

Brief summary of the Roshydromet observation network:

1. **Synoptic stations**
   - ❖ Total number of stations is over 3000
   - ❖ 880 stations in the international exchange.
   - ❖ Each provides up to 8 reports daily in TAC and BUFR formats.

2. **Automatic Weather Stations**
   - ❖ 1 AWS shared on GTS
   - ❖ Data logger types and data formats: Vaisala, TAC and XML.

3. **Radio-sounding network**
   - ❖ 110 stations in the international exchange.
   - ❖ Each provides up to 2 reports daily in TAC and BUFR formats.

Data Collection and Processing Systems

Overview of current data collection and processing systems:

1. **Data Collection**:
   - ❖ **Internet/VPN (ground/satellite), and the private network of Roshydromet "MeteoNet"**
   - ❖ **Observation stations -> observation data collection center (ODCC) in Regional departments of Roshydromet**
   - ❖ **Regional departments of Roshydromet -> RTH Novosibirsk, Khabarovsk, RTH/GISC Moscow -> GTS**
2. **Data Aggregation**:
   - ❖ **To compile and organize the collected data Roshydromet are using your own legacy MSS/FSS (message/file switch systems).**
3. **International Data Sharing:**

❖ **RTH/GISC Moscow shares its data in GTS/WIS1 (Exeter, Beijing, Offenbach, Toulouse, Prague, Tokyo, Melbourne, Norrkoping, Sofia, Seoul, Tehran, Cairo, New Delhi, Tashkent) and WIS2.0 via Internet.**

3. **IT Infrastructure**:

❖ **TCP/IP (FTP, socket), Linux/Windows, Web-portal, Data Base Server (MySql), Application server, MSS/FSS, ODCC, BUFR converter**

Observation network and data collection and processing systems

Mohammed Al-Ghamdi
National Center for Meteorology
Saudi Arabia

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المركز الوطني للأرصاد
National Center for Meteorology
المملكة العربية السعودية

Observation Network

Provide a summary of your observation network:

1. **Synoptic stations**
   - ❖ number of stations (32), number shared in GTS (32), frequency (3 Hours /1 Hour)
   - ❖ Which format (SYNOP & BUFR & METAR)

5

2. **Automatic Weather Stations**
   - ❖ Total number of stations (140)
   - ❖ Number of stations shared on GTS (0) and update frequency
   - ❖ Data logger types and data formats

3. **Radio-sounding network**
   - ❖ Total number of stations (8)
   - ❖ Number of stations shared on GTS and update frequency (8/12hours)
   - ❖ Data formats used (ASCII)

Data Collection and Processing Systems

Please provide an overview of your current data collection and processing systems, including:

1. **Data Collection**: How is data gathered from your observation network?
   - It is collected through a Unified Data Collector System (UDCS), then to our MMSS system.
2. **Data Aggregation**: What methods or systems are used to compile and organize the collected data?
   - We are using IBL Moving Weather.
3. **International Data Sharing**: How is your data currently published on the GTS?
   - Using MMSS IBL Moving Weather
4. **IT Infrastructure**: What hardware, software, and platforms used for these tasks?
   - We are using an on-premise cloud infrastructure and some physical servers. Software is mostly licensed software with some open-source applications.

Observation network and data collection and processing systems

Name: Feras Natouf
Centre :Meteorological Department
Country: Syrian Arab Republic

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Future vision for Syrian meteorology

Before discussing the number of stations currently operating in Syria,

During last years, circumstances in Syria has negatively affected the meteorological infrastructure.

Projects are being prepared to rebuild the system of automated monitoring stations and connecting these stations as a unified network.

Most important of these projects are:

- ✓ Early Warning Project including Weather Radar Project
- ✓ Researcher of Dust Storms and Climate Change

We are looking forward to WMO support to rebuild the meteorological infrastructure.

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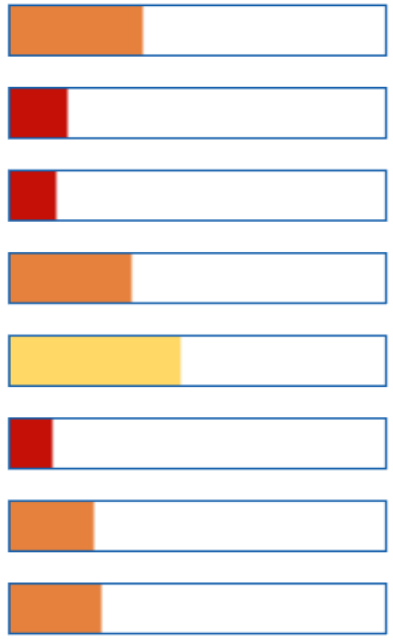
Early Warning for all

SYRIA 2

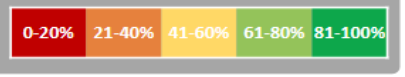
The NMS' observing network largely fell to ruin during the conflict, and only 20 manual stations remain from the original 600 (no upper-air, no radar). Despite a core team of professionals (who notably run a NWP model for forest fires), most of the personnel is untrained and strong capacity development is required across the value chain (incl. network operation, data management, IBF). There is no appropriate governance for MHEWS in place, incl. alerting procedures and risk information.

Pillar II capacity



The capacity assessment level above is ranked on a scale from 1 to 5, where 5 represents advanced capacity and 1 represents no capacity. The capacity level is determined via a quantitative (weighted rating) and qualitative analysis of the EW4All Rapid Assessment Tool (RAT) submission of the Member.

The colours of the bars above express the degree of attainment of each element as quantified by the EW4All RAT, following the percentages indicated hereafter:



Flash-floods

— Acute lack of observation, forecasting and warning capacity

Dust storms/sandstorms

\+ Basic monitoring and forecasting

— Lack of observations (incl. radar), no IBF

Drought/dry spell

\+ Basic satellite-based monitoring

— Lack of observations (incl. remote), no IBF, no warnings

Heat wave

\+ Basic monitoring and forecasting

— Lack of surface observations, no IBF

Wind

— Acute lack of observation, forecasting and warning capacity

Observation Network

Provide a summary of your observation network:

1. **Synoptic stations**
   - ❖ number of stations, number shared in GTS, frequency
     - Now We have 10 SYNOP stations ,we shared 2 stations data, every 1 hour.
   - ❖ Which format (SYNOP or BUFR)
     - SYNOP format
2. **Automatic Weather Stations**
   - ❖ Total number of stations
     - Now We have 5
   - ❖ Number of stations shared on GTS and update frequency
     - **No One**
   - ❖ Data logger types and data formats
     (Visalia, COMBILOG 1022,BOREAS,CAMPELL SCIENTIFIC)...(ASCII)
3. **Radio-sounding network**
   - **No One**

Data Collection and Processing Systems

Please provide an overview of your current data collection and processing systems, including:

1. **Data Collection**: How is data gathered from your observation network?
   - Data is currently collected from traditional and automated stations via paper logs and SD cards, on monthly basis from operating stations.
2. **Data Aggregation**: What methods or systems are used to compile and organize the collected data?
   This data is entered into the computer, archived, and organized according to regions and station names using SQL database management, and extracted as needed in the form of Excel files and charts.
3. **International Data Sharing**: How is your data currently published on the GTS?
   - Data is shared via the (AFTN) within the (ICAO).
4. **IT Infrastructure**: What hardware, software, and platforms used for these tasks?
   - We use mobile and landline phones to perform these tasks. Network connectivity was previously provided via VPN circuits, but it is currently unavailable due to the current circumstances in Syria.

Observation network and data collection and processing systems

Mounir SOUII
National Institute Meteorology
Tunisia

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Observation Network

1. **Synoptic stations**
   - Number of stations: 28
   - Number shared in GTS: all (28)
   - Update frequency: 1 hour, 3 hours
   - Format: BUFR

1. **Automatic Weather Stations**
   - Total number of stations: 16 full-automatic + 12 semi-automatic
   - Number of stations shared on GTS: 28
   - Update frequency: 1 hour, 3 hours
   - Data logger types and data formats: CSV / Pulsonic format

1. **Radio-sounding network**
   - Total number of stations: 2
   - Number of stations shared on GTS and: 2
   - Update frequency: 1 / day
   - Data formats used: BUFR

Data Collection and Processing Systems

- **Data Collection:** through the MPLS network, GSM Data 4G and ADSL Internet Connections for some site,
- **Data Aggregation:** - Pulsonic data logger,
  - MicroStep-MIS Concentrator

1. **International Data Sharing:** - via Météo France (Retim 2K through Internet, FTP protocol)
   - via RMDCN Server (Internet, FTP Protocol)
1. **IT Infrastructure:**
   - Hardware: 2 Lenovo servers and 1 NAS for collection data from stations.
     2 Dell servers (primary and secondary) for GTS.

   - Software: IMS (Integrated Meteorological System) from MicroStep-MIS
     MW (Moving Weather) from IBL Software Engineering.

Observation network and data collection and processing systems

Faisal Al Zaabi / Jassim Aljneibi
National Center of Meteorology
United Arab Emirates

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Observation Network

Provide a summary of your observation network:

1. **Synoptic stations**
   - ❖ number of stations: 8, number shared in GTS: 8, Frequency : 3 hours
   - ❖ Which format (SYNOP or BUFR): SYNOP

2. **Automatic Weather Stations**
   - ❖ Total number of stations: 115
   - ❖ Number of stations shared on GTS and update frequency: 10 Stations planned this year
   - ❖ Data logger types and data formats: Standalone data logger, Text Format

3. **Radio-sounding network**
   - ❖ Total number of stations: 3
   - ❖ Number of stations shared on GTS: 3 and update frequency: twice daily
   - ❖ Data formats used (ASCII, BUFR, or other to specify): ASCII & BUFR

Data Collection and Processing Systems

Please provide an overview of your current data collection and processing systems, including:

1. **Data Collection**: How is data gathered from your observation network?

   Automatic Weather Station Data is collected every 15minutes, these data are collected in the Datalogger and then Transmitted over GSM to the Central Database.

2. **Data Aggregation**: What methods or systems are used to compile and organize the collected data?

   The collected raw data from all AWS are stored in UDCS (Unified Data Collection System).
   Microstep CLDB is used for processing and quality control.

Data Collection and Processing Systems

Please provide an overview of your current data collection and processing systems, including:

3. **International Data Sharing**: How is your data currently published on the GTS?
   The data from the AWS listed in the below table with be shared on GTS \ WIS2 soon

#	Station Name	WMO ID	ICAO Code	Latitude	Longitude	Altitude
1.	AL DHAID	41230	OMDD	25 14 13	55 49 01	111 m
2.	AL JAZEERA B.G	41231	OMJZ	23 17 28	52 17 20	70 m
3.	AL ARAD	41232	OMRD	23 50 41	55.31 27	180 m
4.	AL GHEWEIFAT	41233	OMFT	24 07 16	51 37 37	45 m
5.	AL KHAZNA	41234	OMZA	24 07 29	55 06 48	170 m
6.	ALRUWAIS	41235	OMWS	24 04 60	52 50 59	23 m
7.	ASHAAB	41236	OMSB	24 23 11	54 48 44	35 m
8.	MADINAT ZAYED	41237	OMMZ	23 40 54	53 41 55	170 m
9.	MUKHARIZ	41238	OMRZ	22 56 05	52 52 40	145 m
10.	UM AZIMUL	41239	OMUZ	22 42 51	55 08 19	130 m

4. **IT Infrastructure**: What hardware, software, and platforms used for these tasks?
   Hardware: 2 x UDCS, 2 x CLDB, Storage, Back up Server and High Internet Bandwidth connection
   Software: IMS CLDB, Wind Rose application

Observation network and data collection and processing systems

Mohammed Hamed Abdo
Yemen Civil Aviation & Meteorology Authority

Yemen

Observation Network

Synoptic Stations:

- Total: 27 stations across Yemen (Campbell Scientific)
- 8 airport stations use MicroStep (METAR + SYNOP)
- Data includes: Temperature, Wind, Humidity, Pressure
- Format: MIXED (METAR, SYNOP and BUFR status)
- Need more coverage in eastern and southern areas near Oman
- Urgent need for spare parts (stock exhausted)

Automatic Weather Stations (AWS):

- 1 AWS at Aden Airport (requires upgrade)

Data Sharing (GTS):

- All data shared with Sana’a and Aden
- Governorate stations connected via GSM leased lines
- Airport stations connected via MPLS and fiber leased lines

Data Collection and Processing Systems

Data Collection:

- Data gathered from Synoptic and Airport stations (Campbell Scientific, MicroStep, Vaisala)
- Transmitted in real-time via GSM, MPLS, and fiber network. “Worst scenario for some cities with phone calls due to internet and local communication stability and quality”.

Data Aggregation:

- Central aggregation in Sana’a and Aden by Servers.

International Data Sharing:

- Currently through MESSIR application
- After WIS2 system training, many issues will be resolved and data will be shared world wide easily.

Data Collection and Processing Systems

IT Infrastructure:

- Equipment: Campbell Scientific, MicroStep, Vaisala
- Skilled local staff capable of installation, maintenance, and upgrades
- Major challenge: Lack of funding for new station purchases

Our Vision

Build a powerful forecasting data system capable of hurricane and extreme weather prediction

New technologies (LoRa, BGAN, Starlink) offer promising solutions despite limited funding

Our deep gratitude to:
The World Meteorological Organization (WMO),
Oman Meteorology – Civil Aviation Authority,
and the **people of Oman**
for their continued support, collaboration, and generosity.
Your solidarity means a great deal to us in Yemen, especially during challenging times.
Together, we are building a stronger, more resilient worldwide meteorological network that serves and protects our communities

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Thank you
Merci
Gracias
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谢谢
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