EUMETNET

1st Task Team on WIGOS MetaData (TT-WMD)
WMO Geneva, Switzerland
11-15th March 2012

REQUIREMENTS FOR OBSERVATIONAL METADATA

from the perspective of the
AMDAR Programme
submitted by the E-AMDAR Programme
(Stewart Taylor)

AMDAR: What is it?

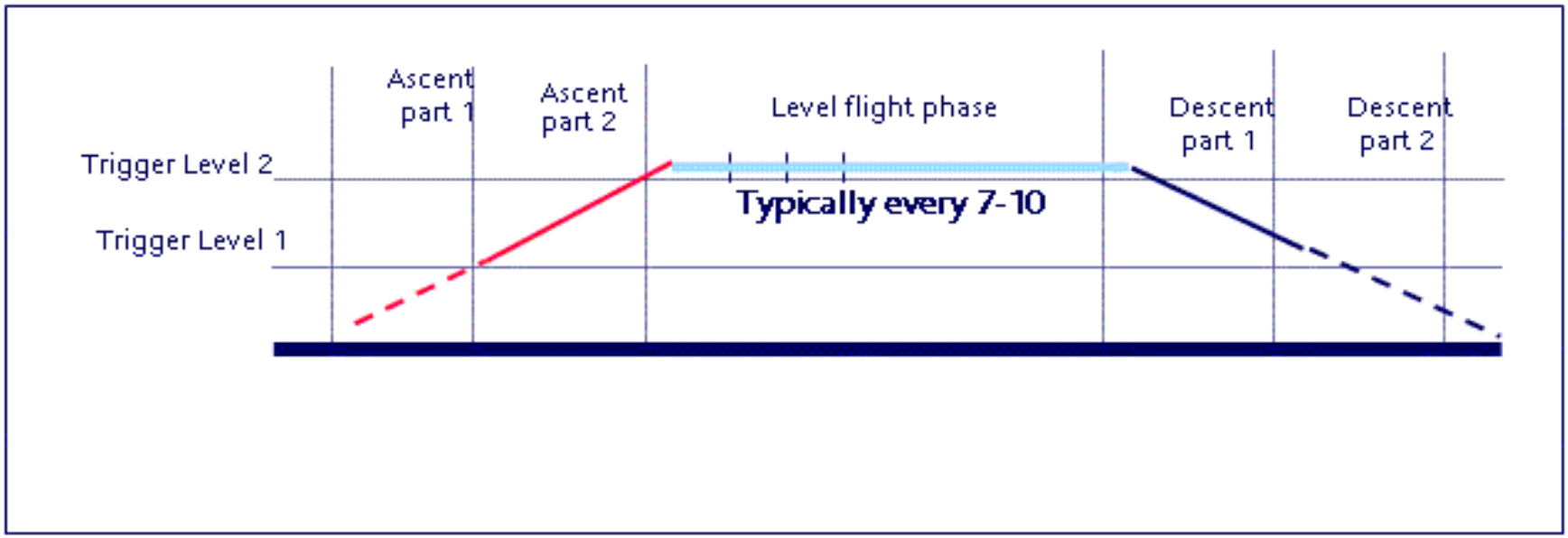
A fully automated upper air observing system;

- Collecting high quality observations of wind speed/direction and temperature,
- in profile and cruise phases of flight,
- and turbulence and humidity where equipped.

Utilises commercial aircraft (in collaboration with participating airlines);

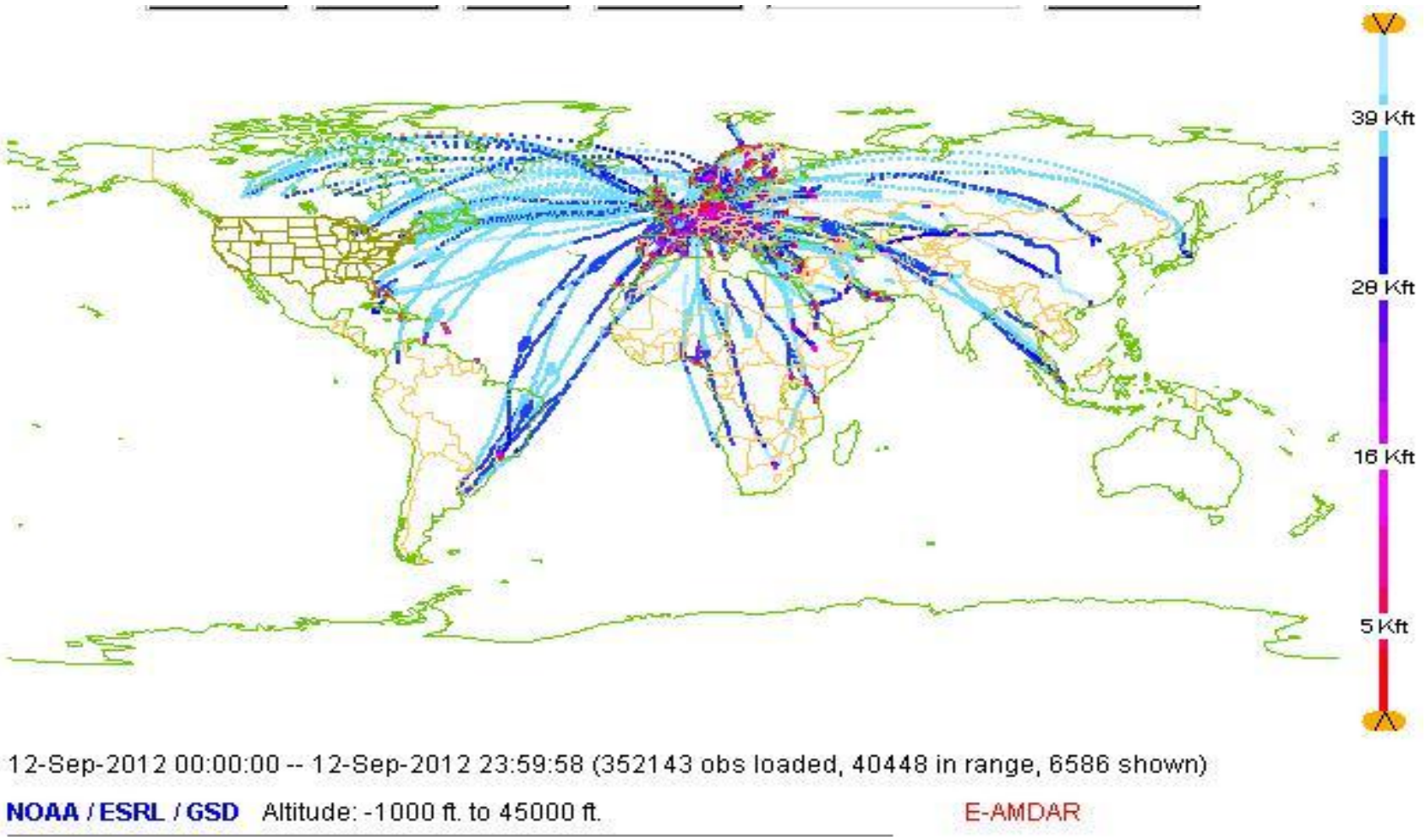
- Uses existing aircraft and airline infrastructure including:
  - standard installed sensors
  - onboard avionics
  - communications hardware and software
  - AMDAR software installation.

AMDAR: Data produced from aircraft.



Ascent Part 1:	5 or 10 hPa intervals for first 100 hPa	3 to 20 second intervals (default 6) for 30 to 200 seconds (default 90)
Ascent Part 2:	25 or 50 hPa intervals above first 100 hPa	20 to 60 second intervals (default 20) for 490 to 1050 seconds (default 510)
Enroute:	1 to 60 minute intervals (default 7)	

AMDAR: Global Network Coverage.



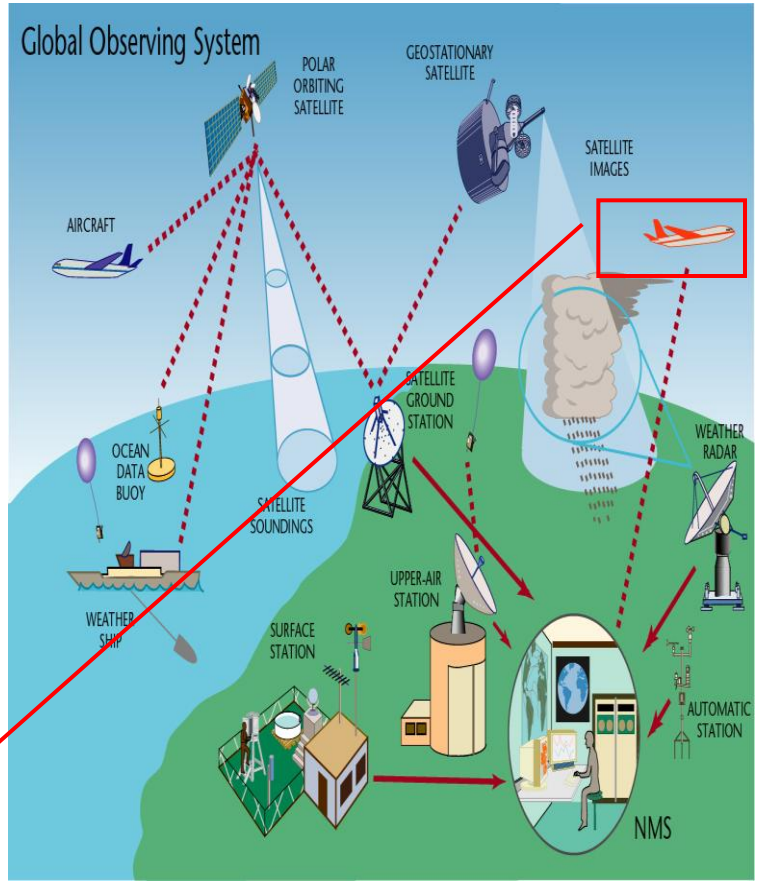
WMO Aircraft-based Observing System

WMO – World Meteorological Organization

- Manages and maintains the World Weather Watch (WWW) Programme in co-operation with Members (National Meteorological and Hydrological Services) and partner organizations.

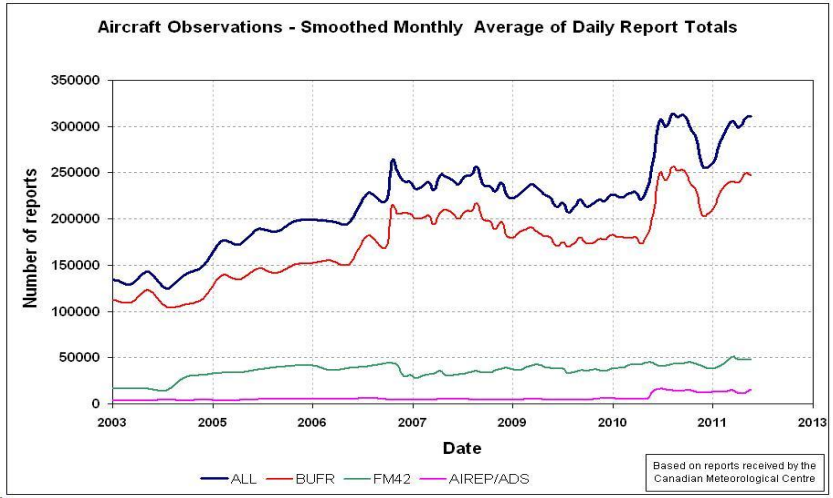
- WWW Programme is responsible for operation of the WMO Integrated Global Observing System (WIGOS), supporting: Numerical Weather Prediction, Public Weather Services, Disaster Warning and Recovery, Climate and Meteorolgoical Research & Aeronautical Meteorology.

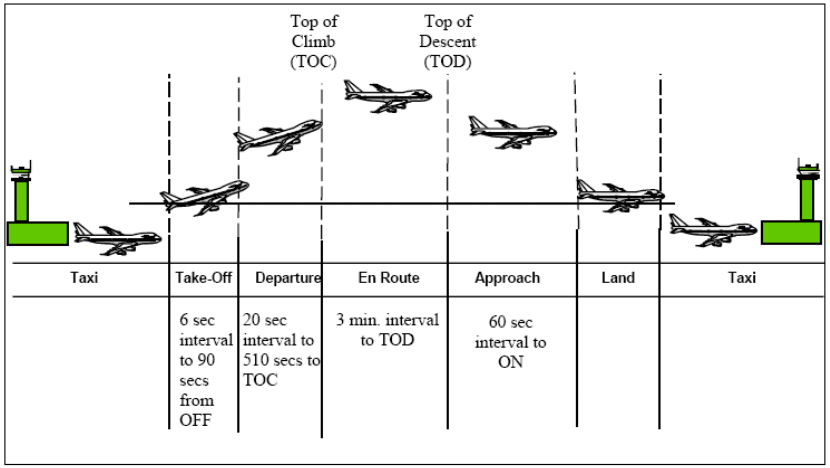
- The Aircraft-based Observing System is a critical component of WIGOS.



AMDAR – Aircraft Meteorological DAta Relay

- AMDAR is the core component of the Aircraft-based Observing System:
  - ~ 95% of all AOS data freely available on GTS (supplemented by ICAO AIREPs, PIREPs and ADS)
  - Data derived from vertical profiles and enroute reports of meteorological parameters according to meteorological specification.

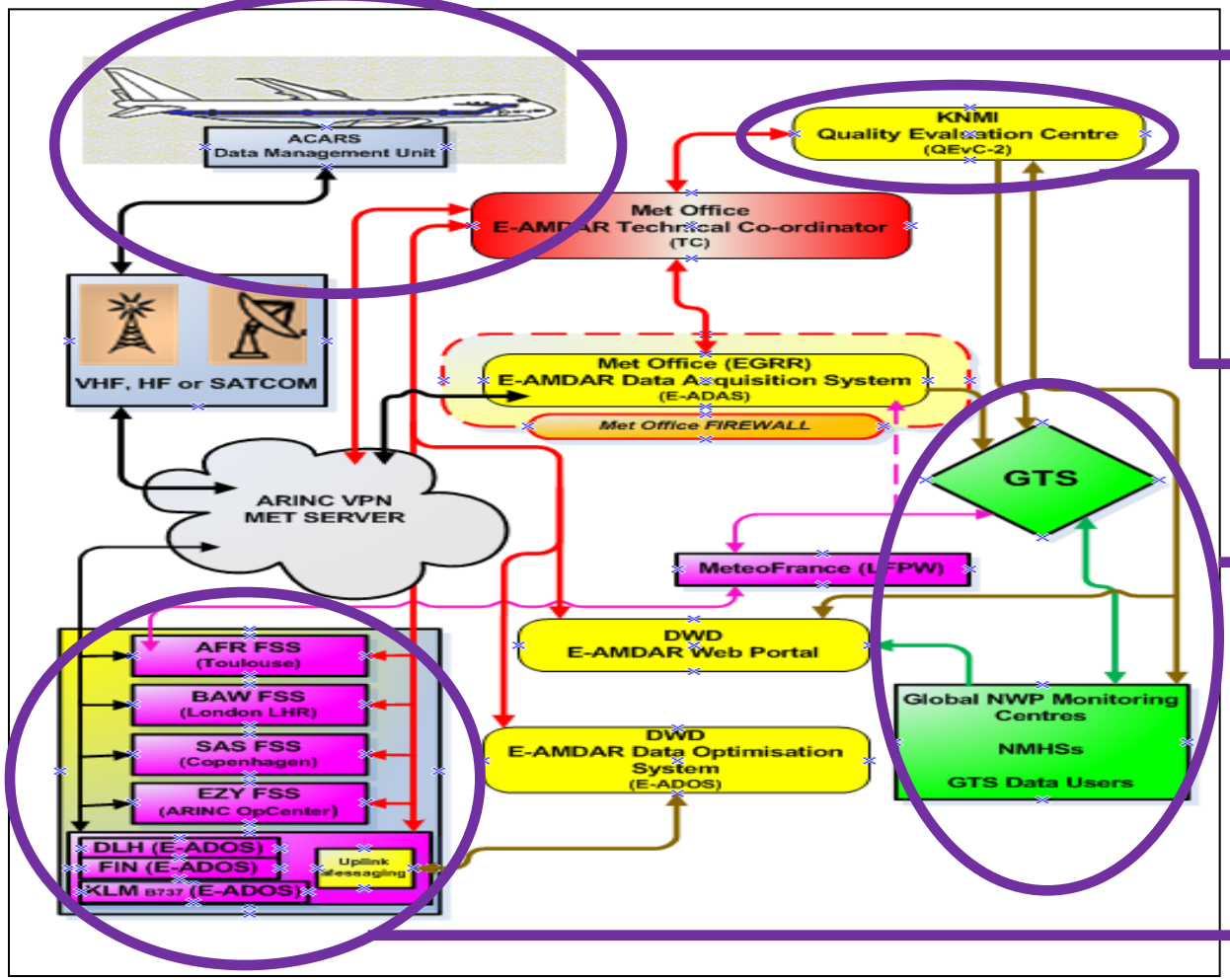




AMDAR: WIGOS PP for AMDAR.

- **Agreed components of metadata;**
  - **mandatory and optional components.**
- **Defined framework.**
- **Metadata information requested from E-AMDAR airline.**
- **Risks identified;**
  - **3rd party data – proprietary implications,**
    - **Hardware – sensors (airlines),**
    - **Software – onboard avionics (vendors).**
  - **Stakeholder buy-in (willingness of airlines).**

AMDAR: What metadata is required?



1. Sensor type, Avionics and onboard algorithms.

3. Data quality flags, Bias corrections. (1 and 2).

4. All retrievable data.

2. Software (type and version, Reporting resolution.

AMDAR: Metadata requirements

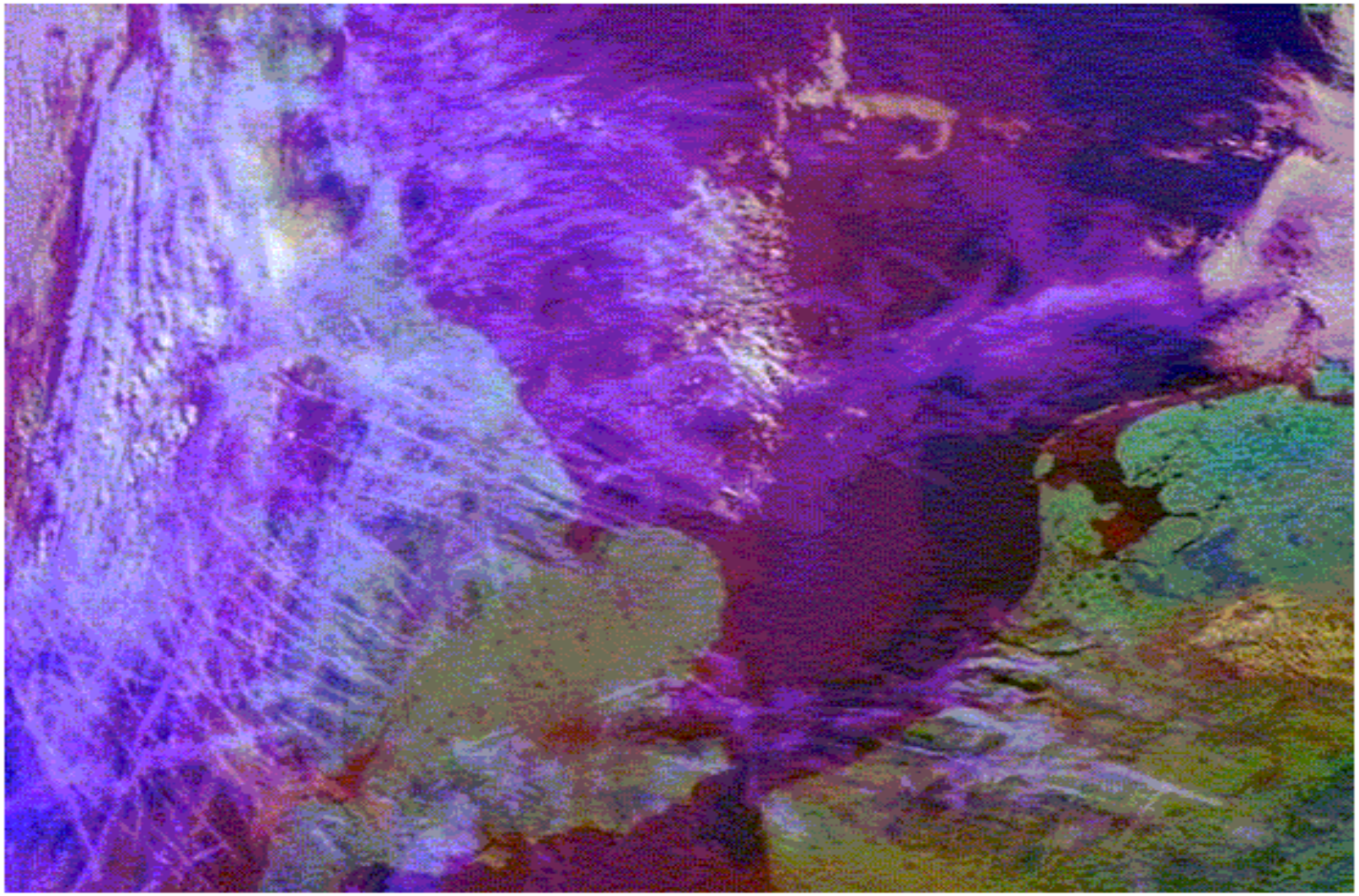
- **What is to be described;**
  - **Clear description of data,**
    - **Sensor type,**
    - **Software type, version.**
  - **Naming of units,**
    - **Temperature (C or K),**
    - **Wind (m/s or KT).**

- **Agreed format, data that will be of use to users.**

- **Allow users to retrieve data readily.**

AMDAR: Other comments.

- **In addition to AMDAR parameters, requirement for atmospheric parameters under the IAGOS Programme.**
  - **E-AMDAR will process the data (own BUFR template).**
- **AMDAR data will be migrating to BUFR Q1/2 2013.**
- **Other types of AO – TAMDAR (commercial company), AIREPS and Mode-S data.**
- **AMDAR are working with RTCA SG-206 – this SG is looking at metadata in "AUTOMET".**



Any Questions?

Contact Details

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