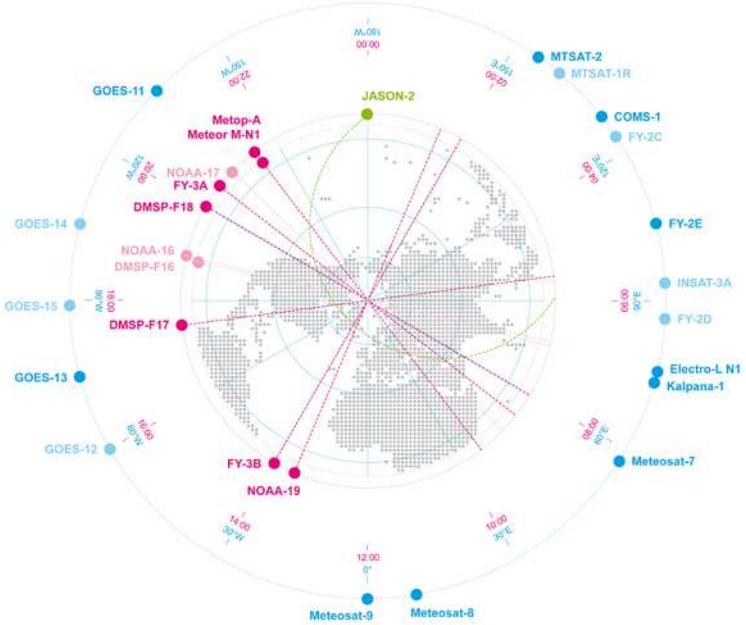

Revision of CGMS baseline and CGMS contingency planning

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CGMS

CGMS Baseline

- The CGMS Baseline enumerates the observations, measurements, and services that form the CGMS contribution to the space-based Global Observing System – includes Space Weather

- The CGMS baseline is responding to end-user requirements expressed in WMO's Rolling Review of Requirements (RRR).

- The CGMS Baseline will strive to support the WMO Integrated Global Observing System (WIGOS) 2040 vison

- Key principles:
  - Commitment: The CGMS Members are providing, or have firm plans to provide, the observations, measurements, and services enumerated in the Baseline
  - Sustained: The observations, measurements, and services are provided on a sustained basis
  - Available: The observations, measurements, and services are available on a free and open basis
  - Operational: The data and products can be utilized in operational applications

CGMS Baseline

- The observations and measurements that constitute the CGMS Baseline are enumerated in a table that describes the Sensor Type, the Orbit, the Observation/Measurement (or geophysical parameter), and any specific attributes

- The table was designed to facilitate linkage with the OSCAR database and future CGMS risk assessments and WMO gap analysis

- Example entries are observations and measurements are provided below:

Sensor Type	Orbit	Observation/Measurement	Attributes
Microwave Sounder	LEO	Atmospheric, temperature, and humidity, precipitation	3 sun-synchronous orbits, nominally early morning, mid-morning, and afternoon
Scatterometer	LEO	Ocean surface winds	LEO – 2 sun-synchronous orbits, early morning and mid-morning orbits
Coronagraph	Sun-Earth Line	Coronagraphy	GEO – 1 slot L1

CGMS Baseline

- Services encompass the following areas:
  - Data access (both terrestrial and space-based)
  - Direct broadcast
  - *In-situ* data relay (e.g., data collection systems)

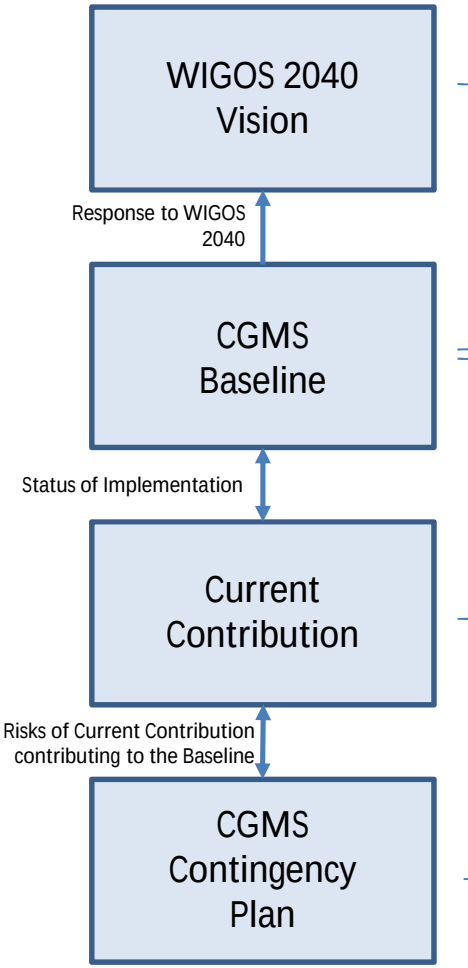
- The CGMS Baseline contains a section on steps CGMS will take to ensure the quality and continuity of data and products:
  - Calibration and validation (including inter-calibration)
  - Monitoring implementation of the baseline (risk assessment)
  - Contingency planning
  - System compatibility and interoperability
  - Use of research/experimental missions to:
    - Supplement the CGMS Baseline
    - Provide a pathway for new sensors and capabilities to be introduced to the CGMS Baseline
    - Support contingency operations

- New CGMS Baseline was agreed at CGMS-47 in June 2018 and will become part of the WMO WIGOS Manual

CGMS Contingency Plan

- The CGMS level contingency planning follows a traditional risk management framework in order to avoid risks to service, and to minimize the impacts of any potential loses

CGMS Baseline – Gap Analysis / Risk Assessment



Activity	Frequency	Responsible Organization
Gap Analysis Revision of Baseline	Every 4 Years	WMO CGMS
Risk Assessment	Annually	CGMS
Contingency Response	As Needed	CGMS

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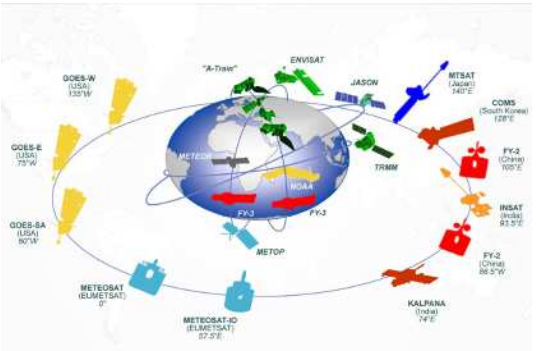
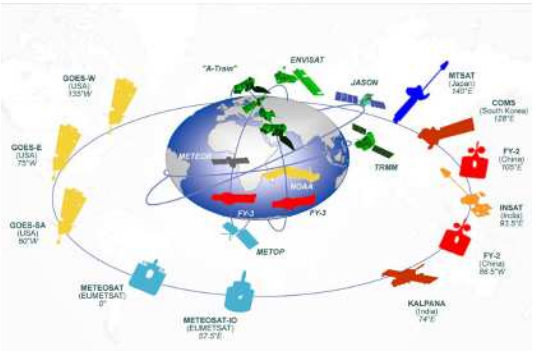
CGMS Risk Mitigation priorities agreed at CGMS 2018



- Mitigate the impact of identified degradation or loss of capabilities of the CGMS baseline and ensure appropriate contingency measures are in place:
  - ensure continuity of passive microwave imager measurements;
  - ensure long-term continuity of the Early Morning orbit, in particular for IR/MW sounding;

Further Response to WIGOS vision agreed at CGMS 2018



- Advance the response to the WIGOS 2040 vision for space, by the implementation of new capabilities beyond the CGMS baseline,
  - advance the new generation of GEO satellites, including advanced imaging, lightning mapping and IR sounding for the whole geostationary ring;
  - work towards ensuring low frequency microwave imagery for all-weather SST and ice monitoring from at least 2 sun-synchronous orbits;
  - increase geographical altimetry coverage, for example through wide-swath altimetry;
  - advance the atmospheric Radio Occultation constellation, with the long-term goal of providing 20000 occultations per day on a sustained basis;
  - move towards an operational space weather monitoring capability from the Lagrangian Point L-5;

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Thanks for your attention

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