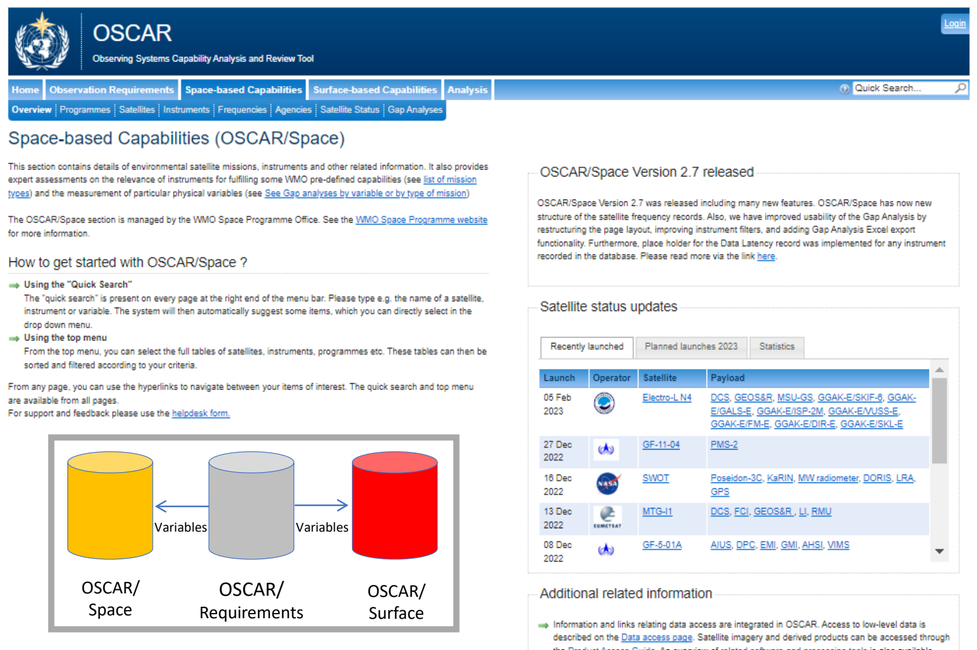
The Current Status and The Future Development Plans of WMO OSCAR/Space

Heikki Pohjola, WMO

Introduction

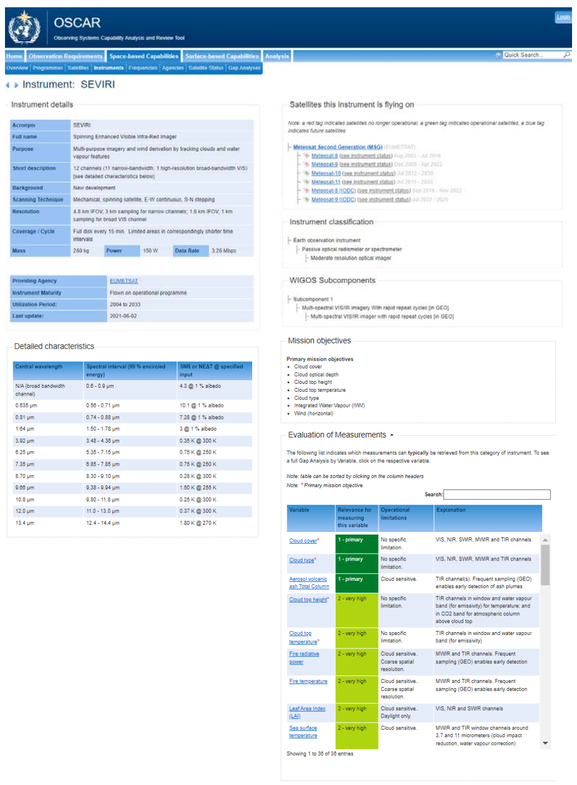
- OSCAR is WMO-maintained online resource, which combines three components:
  - OSCAR/Space
    - Current and planned satellite programmes, satellites and their instruments since TIROS-I (1st April 1960) until around 2040
    - Over 800 satellites and around 1100 instruments (700 for Earth Observation and 400 for Space Weather)
  - OSCAR/Surface: Surface-based stations/platforms under WIGOS
  - OSCAR/Requirements: Observation requirements for WMO application areas and for all relevant variables
- Database contents are updated together with the focal points nominated by CGMS Members (OSCAR/Space Support Team). WMO Space Programme Office makes use of other information sources like CGMS, CEOS, WMO and other meetings to update database contents with various online sources.



See http://space.oscar.wmo.int

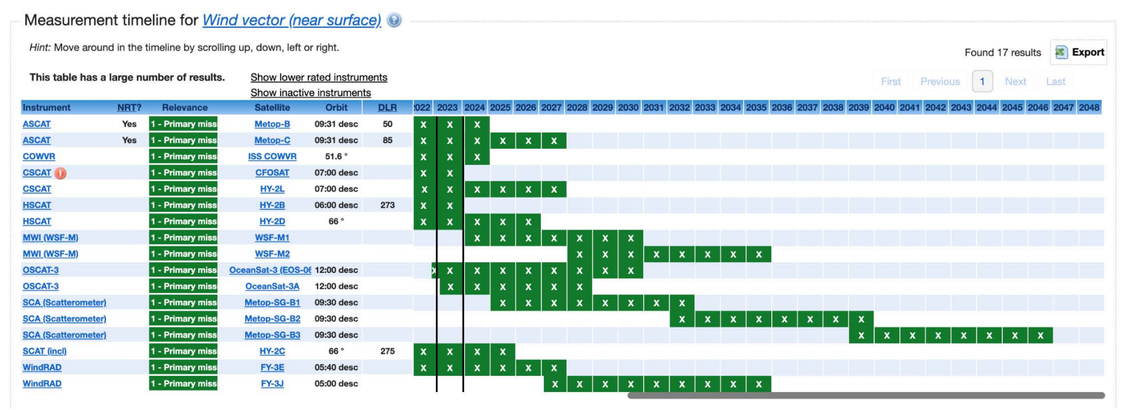
Hierarchy of OSCAR/Space information

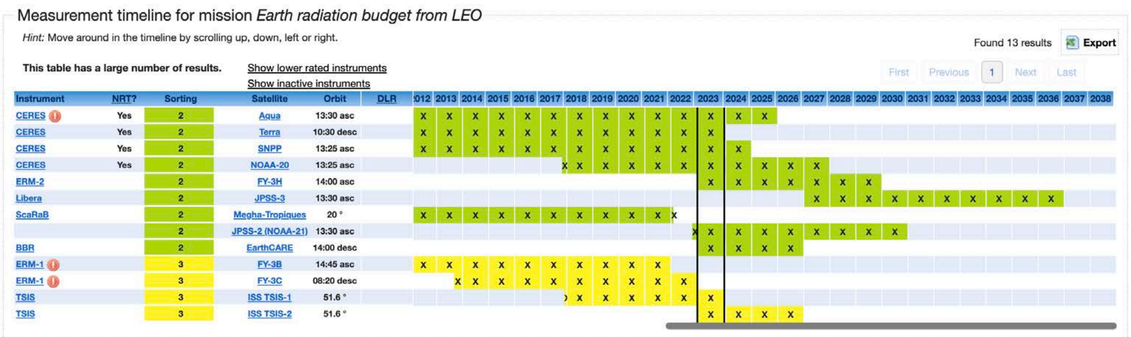
Agency	Programmes	Satellites	Instrument	Gap Analysis
•Name •Website •Country •List of satellite programmes •Timeline	•Acronym •Full name •Name of the satellites •Responsible space agency •First launch and last launch	•Name, purpose •Mass, power •Orbit (type, alt, ECT, longitude) •Launch date, end date, status •Data access, telecom frequencies	•Name, purpose •Mass, power •Type, description, scan mode •Resolution, FOV, coverage •Status •Spectral characteristics	•By variables •By mission •By WIGOS subcomponents



OSCAR/Space Gap Analysis

- Gap analysis by
  - Variable: all variables measured by space-based instruments recorded in OSCAR/Requirements
  - Mission: VIS/IR imagery, radar altimetry, RO sounding,…
  - WIGOS subcomponents: Description of the space-based observing system in Vision for WIGOS 2040
- Results based on the recorded details of the satellite/instrument life-time, and the identification and qualification of the variables retrievable from an instrument
- A variable can be retrieved from instruments of different types. The quality of the retrieval depends on the physical principle exploited by the type of instrument, and the specific instrument characteristics
- The processing method evaluates which variables can be retrieved from an instrument and provides a rough rating of the achievable quality





Coming development H1/2023

- Implementation of WIGOS Station Identifiers for satellites
- Linking OSCAR/Space to Common Code Tables
- Implementation of energy ranges for the magnetospheric and solar energetic particles measurement instruments
- Further improvements in Gap Analysis data export
- Improvements in backend usability and bug fixes
- OSCAR/Requirements development related to new Rolling Review of Requirement process

Future plans

- Make a long-term OSCAR/Space development plan based on the user workshop organized Feb 2023
- Make OSCAR/Space WMDR ready with XML API, and further develop exiting JSON API to support GSICS, GCOS, NWP and other applications
- Tools for the monitoring of the Vision for WIGOS 2040 implementation
- Better handling on CubeSat constellations, and private sector capabilities
- Improve the Gap Analysis to be linked to the measurement requirements in OSCAR/Requirements