



Committee on Earth Observation Satellites

The Ocean Surface Vector Wind Constellation: Status, Health and Future?

CEOS OSVW-Virtual Constellation

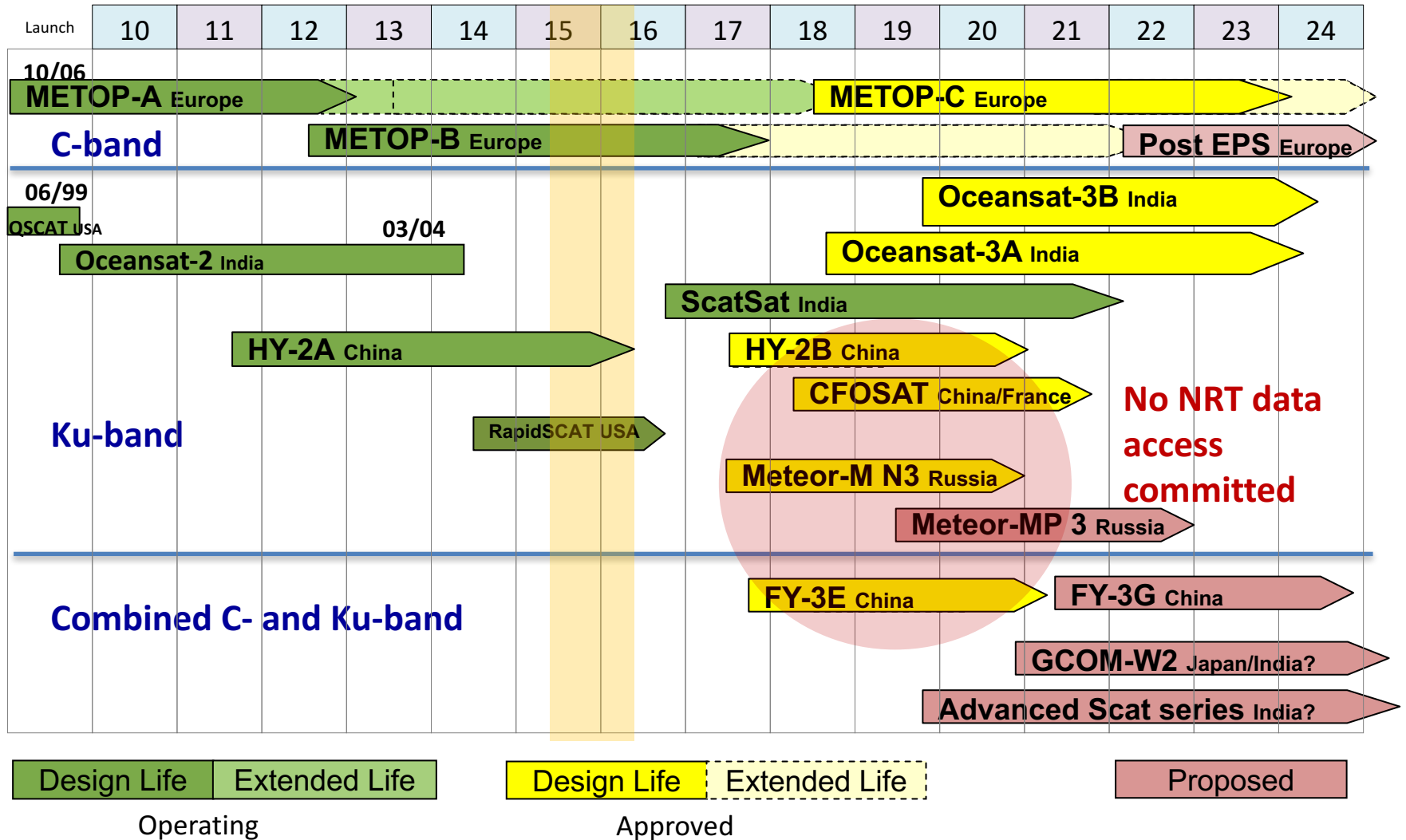
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OSVW Constellation Status and Health

- ASCAT (METOP-A&B) and RapidScat
 - Open and near real-time data access
 - ASCAT available through EPS-SG(SCA)
 - METOP-C scheduled for a October 2018 launch
- SCA (ASCAT Follow-On, EPS-SG) ~2022/23
- ScatSat September 2016 (Injected into ~9:45 am local crossing time and drift to 8:45 am)
 - Open and near real-time data access (April 24, 2017)
- OSCAT follow-on (OceanSat-3a&b) ~2018/2019

CEOS Ocean Vector Surface Winds Virtual Constellation (OSVW-VC)

Current status and outlook – NRT data access

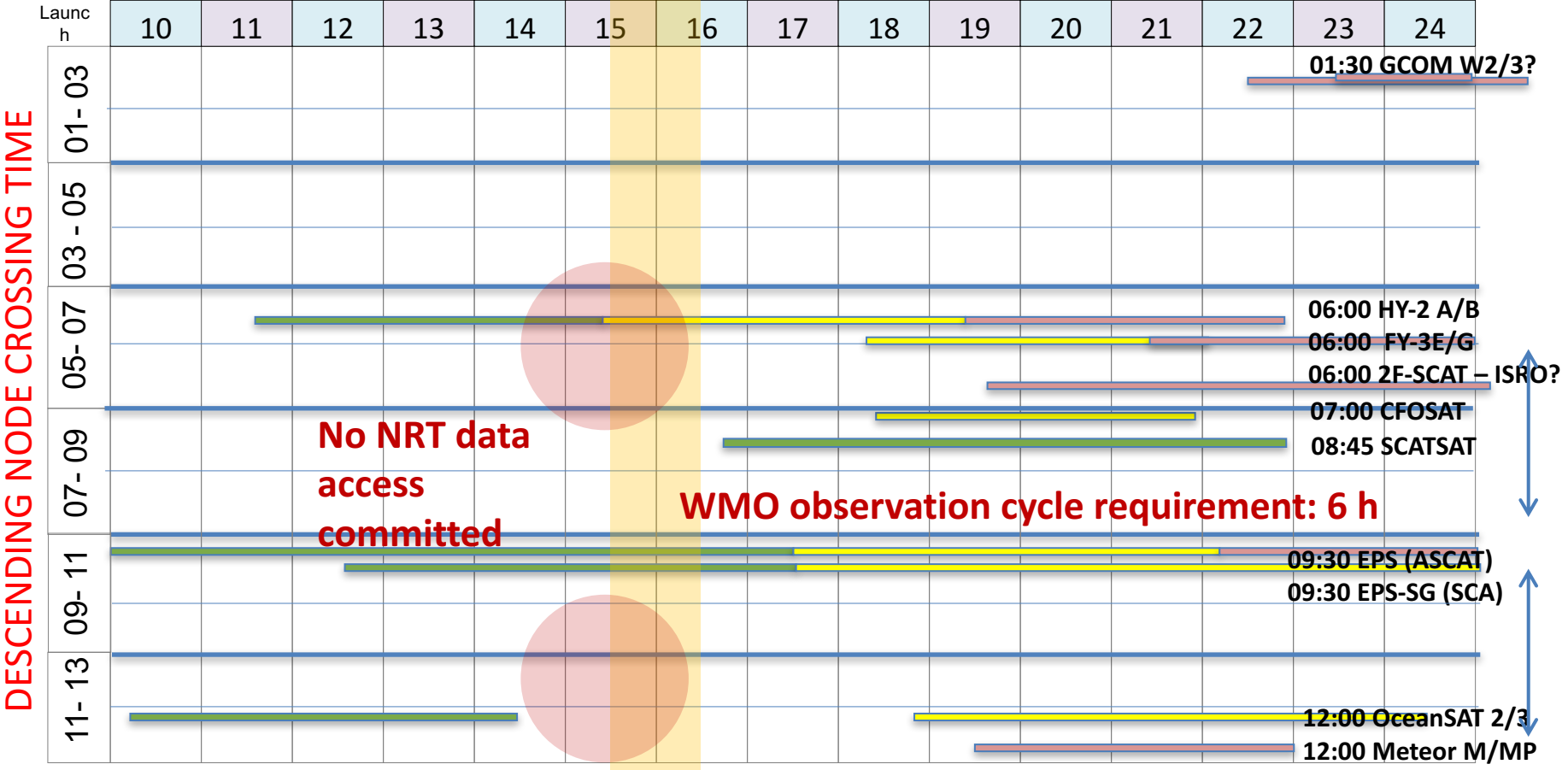


No NRT data access committed

Source: WMO OSCAR database and direct interactions with agencies

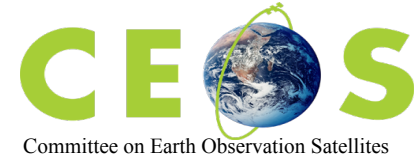
Ocean Vector Surface Winds Constellation

Local time coverage assessment (ground track) - NRT data access



Design Life	Extended Life	Design Life	Extended Life	Proposed
Operating		Approved		

Source: WMO OSCAR database and direct interactions with agencies



OSVW-VC Summary

- The OSVW Constellation is anchored by current and planned missions of EUMETSAT and ISRO
- The CEOS OSVW-VC advocates:
 - Open and near real-time data access
 - Coordination of orbits to optimize temporal sampling
 - Cross calibration of missions
 - Cal/val and data product standards
 - Outreach and education

Additional information including Terms of Reference can be found at <http://ceos.org/ourwork/virtual-constellations/osvw/>

- While each agency needs to work within its resource and political environment, international groups such as CEOS can help communicate objectives and recommendations of the international community directly to agencies

Future: A Few Proposed Next Steps

- Better articulate the “business” case for satellite OSVW
- Define (and justify) the optimum (minimum) OSVW constellation
- Define cal/val and data standards

Why do we need satellite OSVW?

- A. To monitor and understand climate scale processes?**
- B. To monitor, analyze and predict short time scale weather/phenomena?
- C. To further understanding of basic physical processes?
- D. All of the above?

Optimum (minimum) OSVW constellation

- At least 3 scatterometers in orbits designed to roughly meet WMO requirements (observations every 6 hours)
- One instrument in a non-sun-synchronous orbit for sampling the diurnal cycle, better mid-latitude sampling and provide inter-calibration
- Is this still valid? Should we quantify parameters such as spatial sampling? Should we incorporate non-vector and non-scatterometer wind measurements into this constellation definition (i.e., passive microwave, GNSS-R, etc.), and if so how?

Calibration & Validation and Data Standards

There has been a fair amount of work within the IOVWST towards accomplishing this goal and thus toward the development of OSVW climate data records that span the existing scatterometer datasets.

- Do we sufficiently understand...
 - Consistency across C-band and Ku-band OSVW retrieval characteristics
 - Impacts of other geophysical parameters on OSVW (i.e., rain, convection, stability, waves, currents, etc.)
 - How to reconcile spatial scale differences
 - Instruments characteristics to achieve well calibrated (and cross calibrated) NRCS (i.e., specify longer term accuracy in both instrument and geophysical space)?
 - The extremes, both weak and strong winds
 - ...

The OSVW Constellation Future?

- Is the “business” case for satellite OSVW strong enough?
- Satellite SSH, SST, Rain/TPW, Visible imagery, Microwave TB imagery, soundings appear to be considered core measurement capabilities, but is this the case for satellite OSVW?
- What can we collectively do to improve the chances of realizing the optimum (minimum) constellation?

Perhaps the pieces are all there and we just need to figure out how to best articulate and promote outward