



Committee on Earth Observation Satellites

CEOS Analysis Ready Data (ARD)

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3 September 2020



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Current Product Family Specifications (PFS)

- Surface Reflectance
- Surface Temperature
- Normalized Radar Backscatter
- Polarimetric Rader

PFS detail specific 'Threshold' & 'Target' requirements

- General Metadata
- Per-pixel Metadata
- Radiometric & Atmospheric Corrections
- Geometric Corrections

1. to **ensure continued competitive performance of public EO programme data and information**, leveraging the availability of all relevant CEOS agency missions to meet user needs for information, amidst an explosion commercial smallsat EO constellations;
2. to **meet the changing expectations of the user base**, which is increasingly non-technical and more accustomed to simplicity in geospatial data sourcing, integration and application; thus to support the mainstreaming of EO data in society through removal of user burden and data complexity;
3. to **allow CEOS agency data to benefit from the increasing interaction with machines** – through machine learning and artificial intelligence methods – which can handle large amounts of data, and allow these data to be integrated and interoperable with minimal intervention;
4. to establish a broad understanding of, and participation in, CEOS efforts to **define, produce, apply, and promote ARD in support of societal needs**;

5. to **ensure effective engagement of the three key stakeholder groups: EO data providers (both public and private); Big Data hosters** and aggregators who stage increasing amounts of CEOS agency free and open data; and **data users**;
6. to **manage expectations of all stakeholders** as to the status and outlook for ARD availability – so that all might plan and invest with confidence in capabilities to best exploit the CEOS agency ARD;
7. to **establish priorities for which products and applications** might follow on from the current CARD4L PFS – forming a rational and orderly queue for future efforts;
8. to **ensure appropriate organisational responsibilities across the CEOS structure** for the definition and execution of the way forward on ARD;
- the *Strategy* is seen as a fairly informal grouping of relevant CEOS activities which SIT Vice Chair proposes to oversee and promote during their coming SIT Chair term – with new tasks identified as needed.



Data Producers

Why CEOS Analysis Ready Data for Land?

CEOS Analysis Ready Data for Land (CARD4L) are satellite data that have been processed to a minimum set of requirements and organized into a form that allows immediate analysis, with a minimum of additional user effort and interoperability both through time and with other datasets.

Users of EO data typically invest a large proportion of their effort into data preparation. Furthermore, many satellite data users lack the expertise, infrastructure and internet bandwidth to efficiently and effectively access, pre-process, and utilize the growing volume of space-based data for local, regional, and national decision-making.

Increase Uptake

Unprecedented availability of computing power and tools are transforming the world. Data analysis, statistics, and machine learning – all are being made easier through the availability of free and open programming modules and tools. Data providers must also take steps to ease the access and use of data, and CARD4L provides a framework.

Increase Impact

New and emerging users of satellite data benefit greatly from assistance with pre-processing and data preparation, and who is better placed to provide this than the data producers themselves? Making data easier to access and use will increase its impact and accelerate the growth of this user base.

Data Distributors

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Platform Appeal

Users are increasingly moving their workflows to the cloud. Providing a broad range of analysis-ready data products, ready to use and hosted within the same cloud makes a platform very appealing to customers.

Data Users

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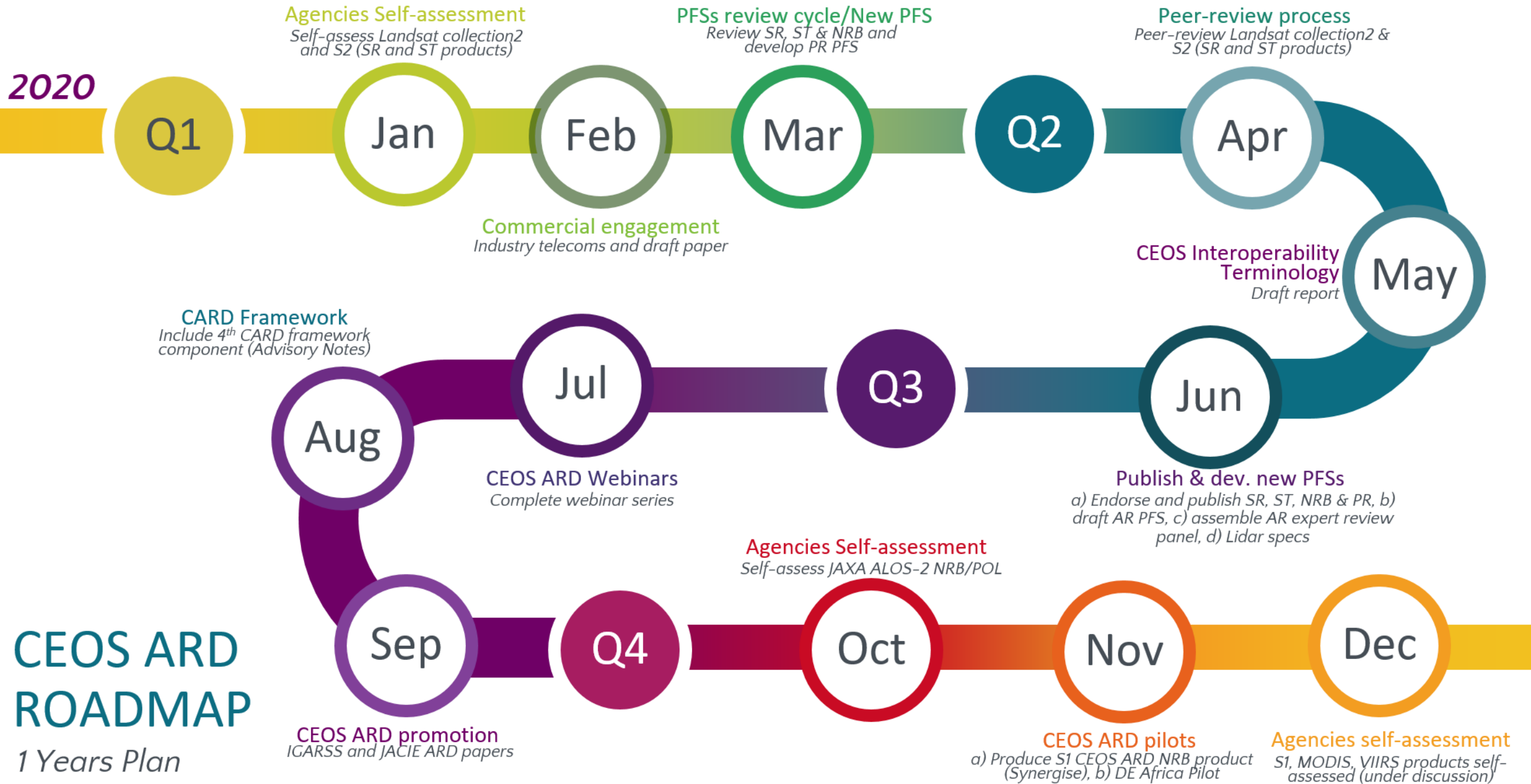
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Save Time and Effort

Even sophisticated users of EO data typically invest a large proportion (around 80 per cent) of their effort into data preparation. This is a major barrier to full and successful utilization of space-based data. As data volumes grow, this barrier is becoming more significant for all users.

- <https://ceos.org/ard/>

2020



CEOS ARD ROADMAP

1 Years Plan

