IDEAS-QA4EO

Cal/Val WS#5
Introduction and Meeting Objectives

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11 – 13 June 2024

Thessaloniki

TELESPAZIO
a LEONARDO and THALES company

esa

serco

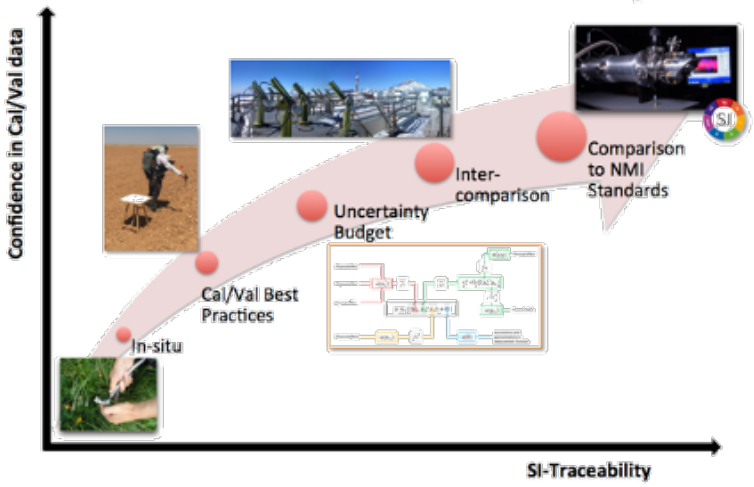
Background

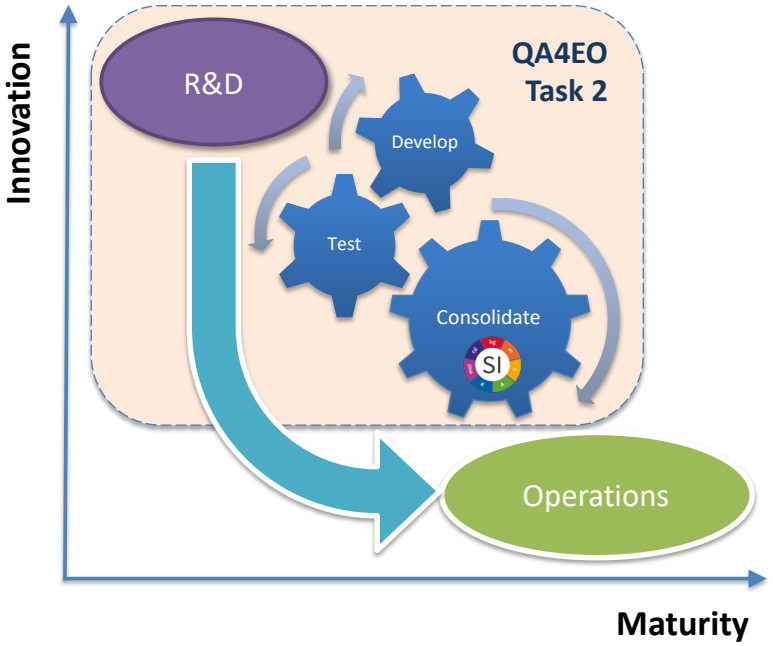
- IDEAS contract started in 2008, evolving into different phases: IDEAS+ (2014-2019), QA4EO (2019-2024), …
- Cal/Val framework implemented as a dedicated task in IDEAS+
- Led by Gareth and then Fabrizio (since 2016)
- Developed in alignment with ESA SPPA's overall Cal/Val strategy and contributed to shaping it

IDEAS-QA4EO

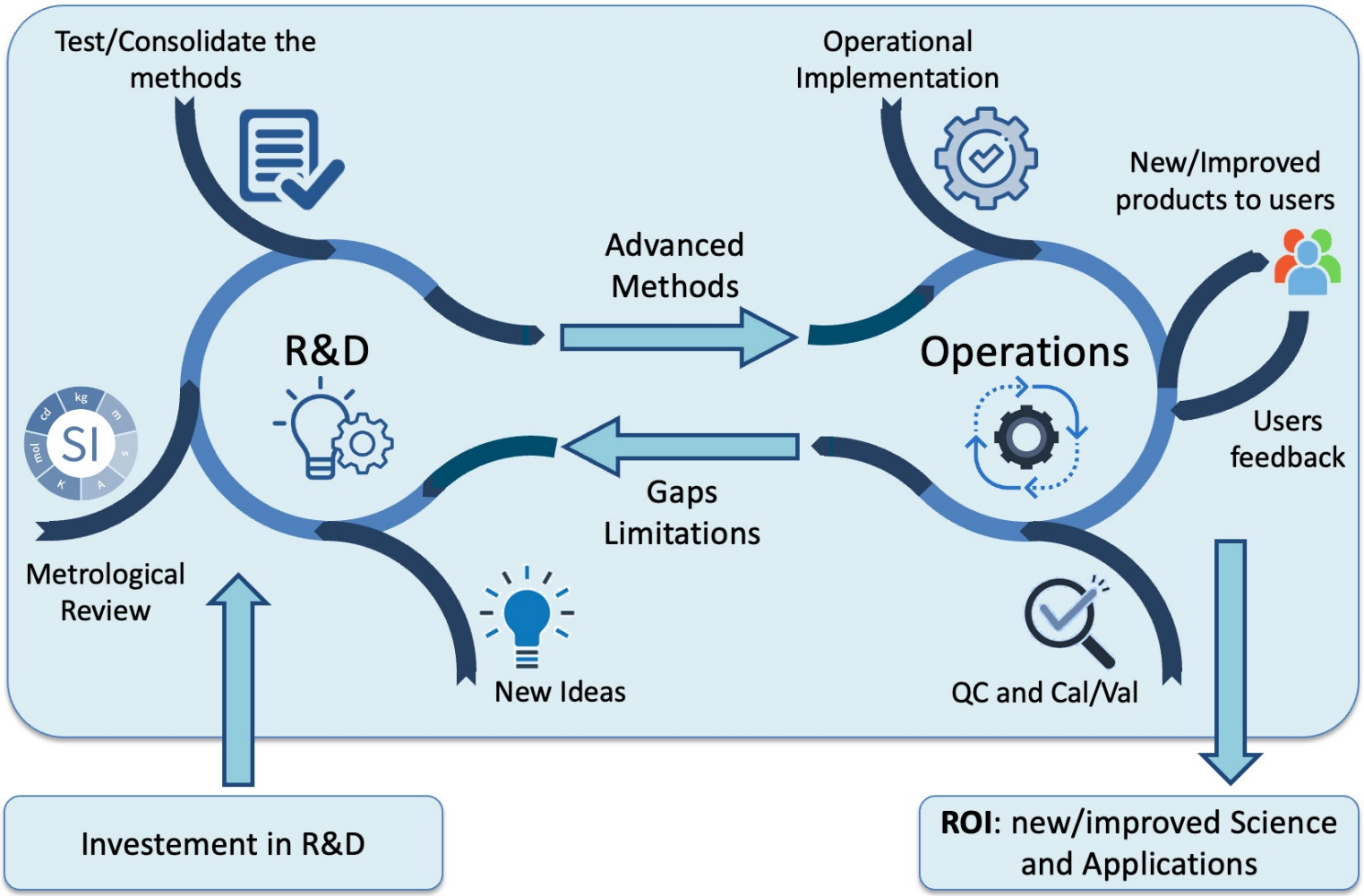
Vision

- IDEAS-QA4EO service contract has overarching objectives:
  - To ensure, on behalf of ESA-SPPA section, the best possible **quality** of ESA EO mission currently in operations
  - To develop and **prototype** advanced Cal/Val methods and algorithms
  - To foster adoption of **metrological** practices across Cal/Val community
- Within IDEAS-QA4EO, Task-2 is the place where innovative ideas are developed and their maturity level enhanced to meet operational needs
- The underlying principle: R&D activities of today are potentially the operations of tomorrow

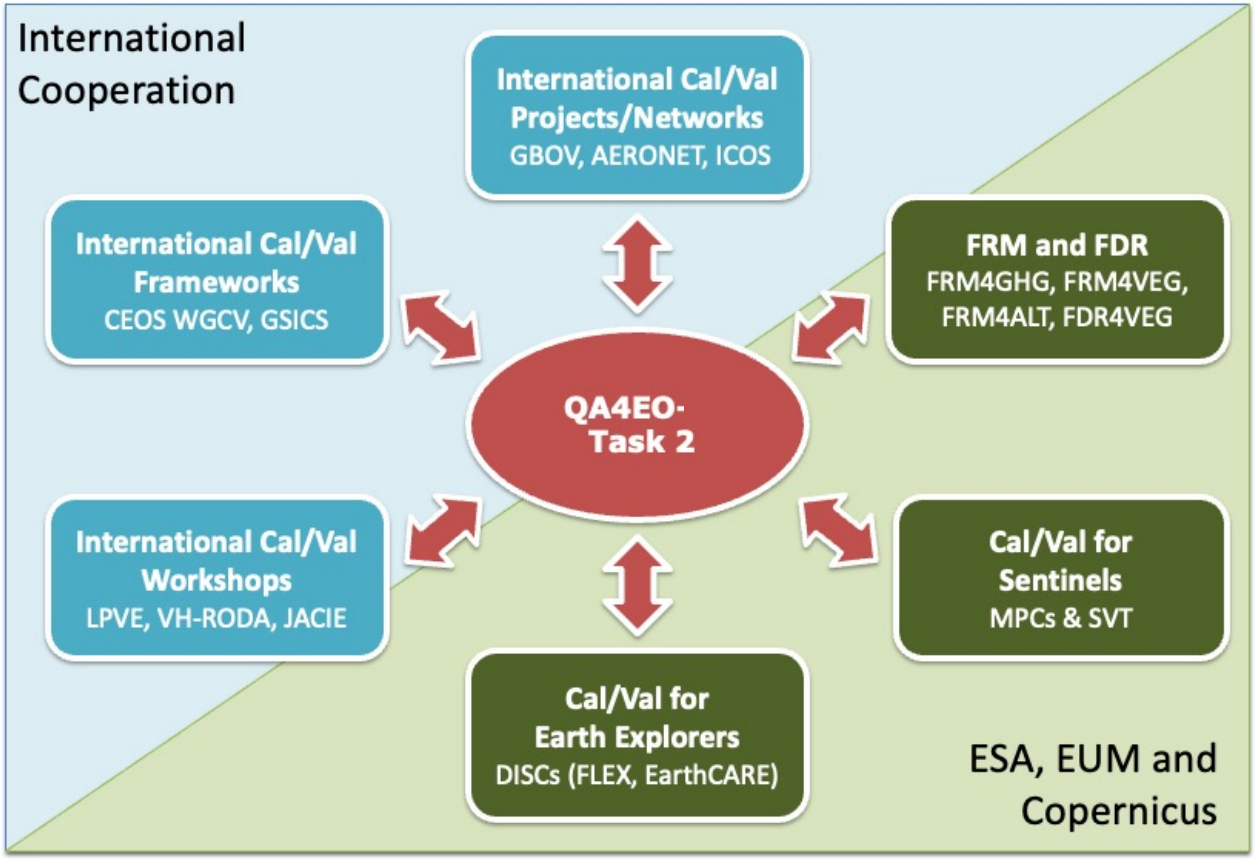




Innovation flow



Context


International Cooperation
International Cal/Val Projects/Networks
GBOV, AERONET, ICOS
International Cal/Val Frameworks
CEOS WGCV, GSICS
FRM and FDR
FRM4GHG, FRM4VEG, FRM4ALT, FDR4VEG
QA4EO-Task 2
International Cal/Val Workshops
LPVE, VH-RODA, JACIE
Cal/Val for Sentinels
MPCs & SVT
Cal/Val for Earth Explorers
DISCs (FLEX, EarthCARE)
ESA, EUM and Copernicus

Task 2

Domains:

- Metrology and Calibration
- Atmosphere Cal/Val
- Land Cal/Val
- Water and Cryosphere Cal/Val

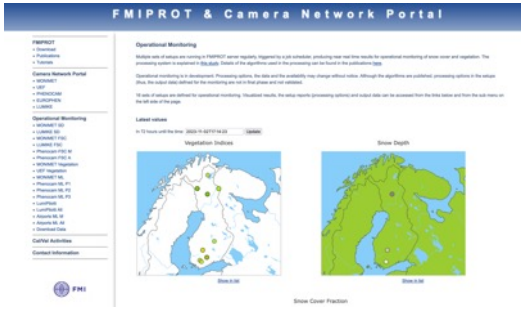
Mission:

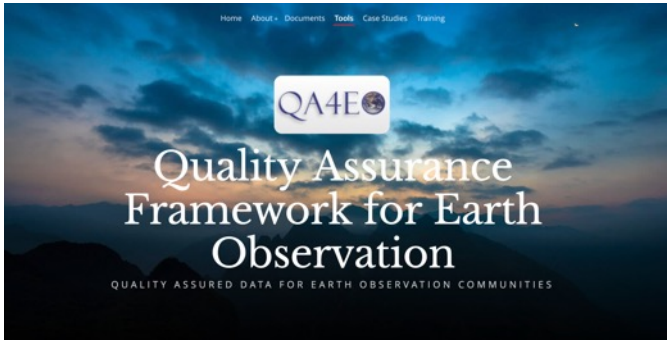
- Drive innovation through cutting-edge R&D
- Validate novel ideas and concepts through proof-of-concept projects
- Bridge the gap between Cal/Val and operational implementation
- Develop new applications and services to meet emerging needs
- Move new activities towards dedicated contracts

…

Many achievements (here some)

- Fostering exchanges of know-how
- Synergies between different Task 2 projects
- New measurement sites, tools and improved methodologies
- Contribution to existing EU Research Infrastructure networks and CEOS activities





IDEAS-QA4EO Cal/Val teams

IDEAS-QA4EO

Workshops

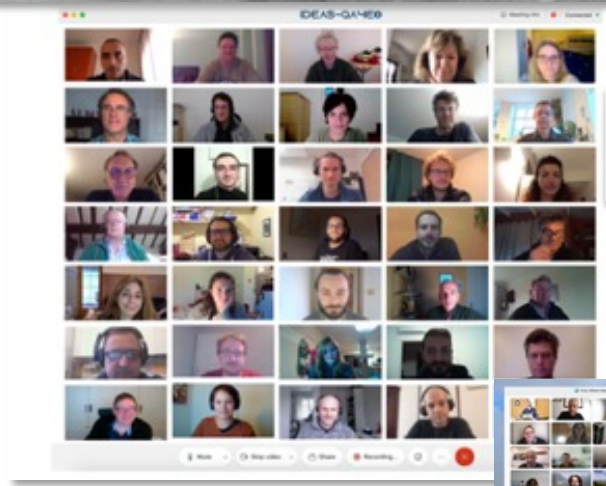
Lille, Mar 2017

ESRIN, Dec 2017

Davos, Oct 2018

Wageningen, Jun 2019

WS#1 Feb 2020
(Uni. Sapienza)



WS#2 Dec 2020
(Virtual)

WS#3 Apr 2022
(ESRIN)

WS#4 Feb 2023
(Potsdam)

IDEAS+

IDEAS-QA4EO

Cal/Val WS#4 Recs. 1/3

Rec#	Owner	Actions	Status
REC-1	QA4EO/NPL	The **CoMet toolkit** should be further promoted as a valuable means for supporting new product development and a comprehensive approach to uncertainty management.	• CoMet toolkit presented at various meetings (ESA FLEX MAG, VH-RODA, CEOS/IVOS, CalCon). • Used within HyperInSPACE, soon used in SatelliteVu processing chain. • All teams are encouraged to actively test the toolkit within their respective activities.
REC-2	QA4EO	**Lunar irradiance** is crucial to extensively involve and actively engage stakeholders. It is essential to establish coordination with concurrent activities within GSICS and LIME.	• Participation at 4th Joint GSICS/IVOS Lunar Calibration Workshop (Dec. 2023)
REC-3	QA4EO	Extending the collaboration between LISA and LOA is of utmost importance, and the installation of **a Lidar system in Gobabeb** will be crucial. Likewise, contribution to RadCalNet is also encouraged, by evaluating the accuracy of radiative transfer modeling to TOA level.	

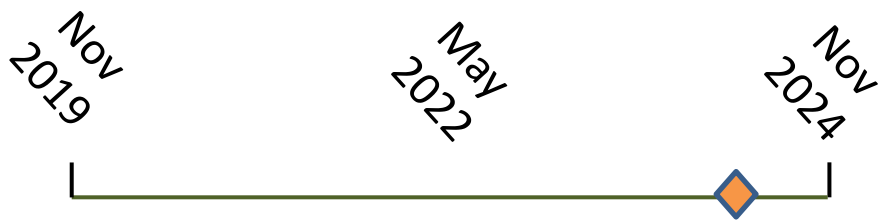
Cal/Val WS#4 Recs. 2/3

Rec#	Owner	Actions	Status
REC-4	QA4EO	Several tools were developed in the frame of QA4EO, which are valuable to the EO Cal/Val community. Yet, there is a need to increase awareness about these tools.	Started inventory of Task2 tools and achievements. Upload on Zenodo requested. End of contract used to consolidate material into a
REC-5	QA4EO	The connection of StrucNet with other international initiatives (e.g., HYPERNETS, ICOS, GGBOV) should be strengthened, and the number of sites within Europe should be increased. Coordination with CEOS-WGCV-LPV is also recommended to engage the relevant land Cal/Val community.	
REC-6	QA4EO	The QA4SM activity has significant relevance in the context of CEOS-LPV. The package may contain functionality that could be valuable for establishing a similar validation platform focusing on other ECVs. It is recommended to ensure coordination with CEOS-LPV efforts to improve the validation stage of the ECVs under consideration	

Cal/Val WS#4 Recs. 3/3

Rec#	Owner	Actions	Status
REC-7	QA4EO	In order to support ongoing advancements in UAV system validation for land applications, it is recommended to establish a collaborative working group within QA4EO, in partnership with FRM4VEG. The active involvement of NPL, NRCC, and GFZ within this working group is essential for enhancing and refining methodologies and practices for UAV-based validation.	

Where we are?



IDEAS-QA4EO: 4 months left

Phase 1

Phase 2

Time to consolidate deliverables (due & unsolicited)

→ ***Check your due dates***

IDEAS-QA4EO

Promoting Task 2 outcomes

Upload deliverables (Documents/Datasets) on Zenodo

https://zenodo.org/communities/qa4eocalval

@qa4eoCalVal Twitter/X account

IDEAS-QA4EO

Summary

- Objectives of the current meeting are:
  - Meet and showcase results and achievements
  - Provide a comprehensive update to ESA on the whole spectrum of activities
  - Gather recommendations to further improve ESA's Cal/Val strategy for the years to come

Cal/Val Workshop#5

11 - 13 June 2024

in Thessaloniki (Greece) @AUTH

ARISTOTLE UNIVERSITY OF THESSALONIKI

Day 1: Tuesday 11 June	Day 2: Wednesday 12 June	Day 3: Thursday 13 June
13:00 – 17:40 *	**9:30 – 17:40 ***	**9:30 – 12:30 ***
• Introduction • Metrology and Traceability • Atmosphere Cal/Val I	• Atmosphere Cal/Val II • Land Cal/Val	• Water Cal/Val • Cryosphere Cal/Val • Discussion and wrap-up

*** Local Time = Eastern European Summer Time (EEST) UTC +3**

Key points:

- **5th** WS for the IDEAS-QA4EO contract
- **2** full days for discussions
- **29** presentations
- **~38** people attending on-site
  + participants joining remotely

&

ESA Service Review

13 - 14 June 2024

Workshop #5 - Agenda

(Revised_20240605)

Day 1

Introduction
13:00 – 13 :30

Metrology and Traceability
13:30 – 14:30

Atmosphere Cal/Val (part I)
14:30 – 17:40

Drink

Day 2

Atmosphere Cal/Val (part II)
9:30 – 12:00

Land Cal/Val
12:00 – 13:00

LUNCH – 13:00 – 14:30

group photo

Land Cal/Val
14:30 – 17:40

Social dinner

Day 3

Water & Cryosphere Cal/Val
9:30 – 11:00

Discussion and Wrap-up
11:00 – 12:30

Presenters:
Please stay in your time.

Remote attenders:
Please keep microphones muted
Use chat to submit questions or wait Q&A.

All presentations uploaded on web