



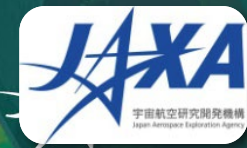
ESA Validation Overview

*Rob Koopman, Jonas Von Bismarck, Stephanie Rusli,
Timon Hummel, Vasileios Tzallas, Montserrat Piñol Solé*
ESA

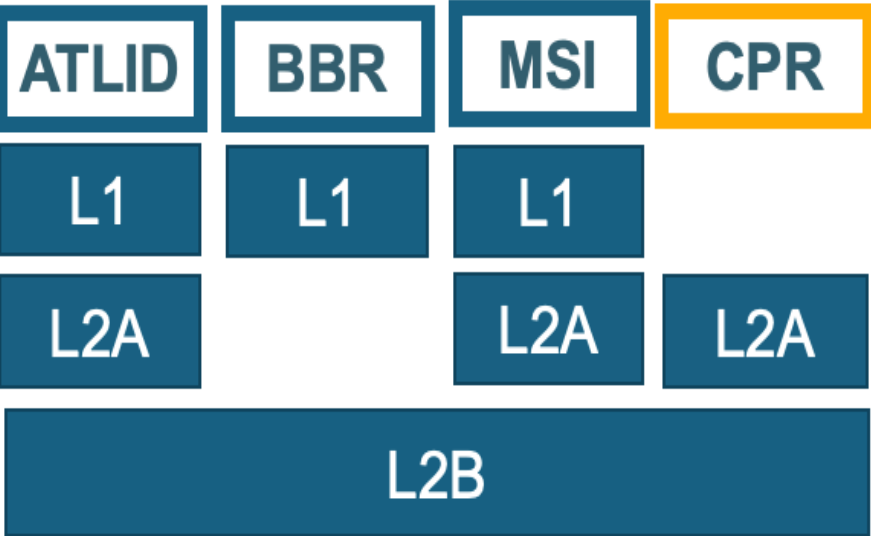
2nd ESA-JAXA EarthCARE In-Orbit Validation Workshop

17 – 20 March 2025 | ESA-ESRIN | Frascati (Rome), Italy

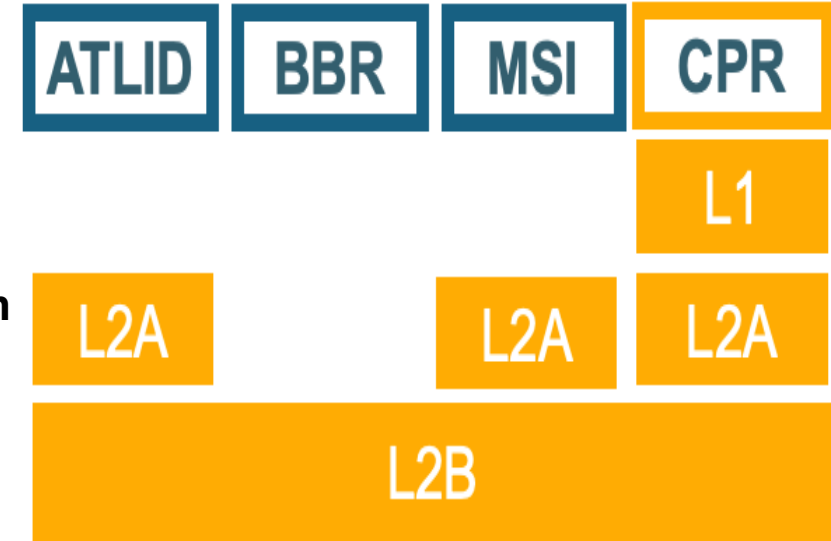
Validation of ESA and JAXA products



ESA for **ESA** products
JAXA for **JAXA** products



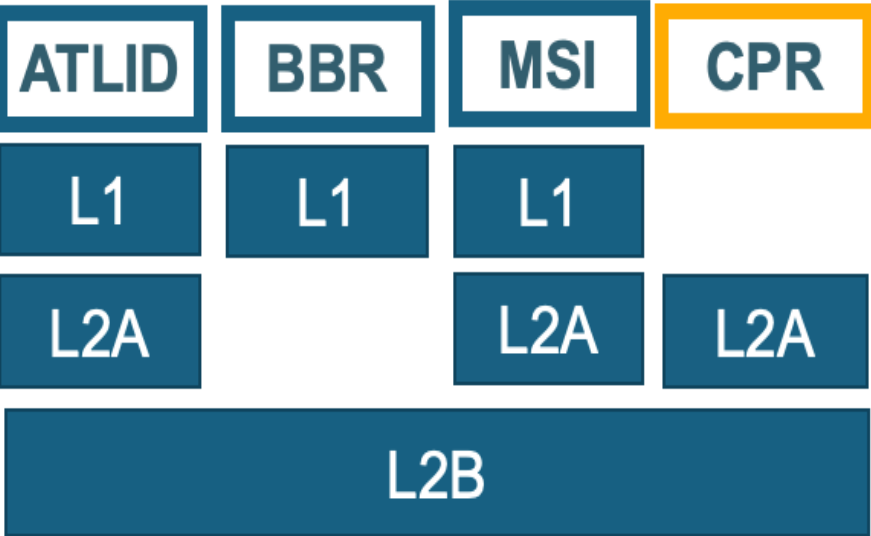
- **ESA-JAXA** Joint Scientific Validation Implementation Plan (2.0)
- **ESA-JAXA** validation coordination
- **ESA-JAXA** Joint Validation Workshops
- Interaction between **ESA & JAXA** algorithm and validation team members



Validation of ESA and JAXA products



ESA for **ESA** products
JAXA for **JAXA** products



- **ESA-JAXA** Joint Scientific Validation Implementation Plan (2.0)
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- Interaction between **ESA & JAXA** algorithm and validation team members

ATLID	BBR	MSI	CPR
L1	L1	L1	
L2A		L2A	L2A
L2B			

**Monday
11:10
Toshiyuki
Tanaka**

ESA validation preparations



'17



'21



'23

**Studies, FRMs
Community
convergence**

**Supporting
Pis, Networks**

**Securing
datasets and
analyses**

**Pre-Launch
Aircraft
Campaigns**

BEST PRACTICE PROTOCOL
FOR THE VALIDATION OF AEROSOL,
CLOUD, AND PRECIPITATION
PROFILES (ACPPV)



**Supporting tools
and facilities**

**Subgroups,
Portal**

**Overpass,
ESOV**

EVDC

ColIDB

OADS

**Developing
Tools/Functions
for **each** of the
5 workflow
elements**

Reporting
Discussions
Q&A

Correlative Data
handling

Comparison
Analysis

EarthCARE data
discovery &
Download

...
**AVL
CIS
Sub2Orb: Lid. Rad. Img.**

ESA validation preparations



Studies, FRMs
Community
convergence



**Tuesday
15:55
Eleni
Marinou**

Supp
Pis, N

Pre-Launch
Aircraft
Campaigns

Supporting tools
and facilities

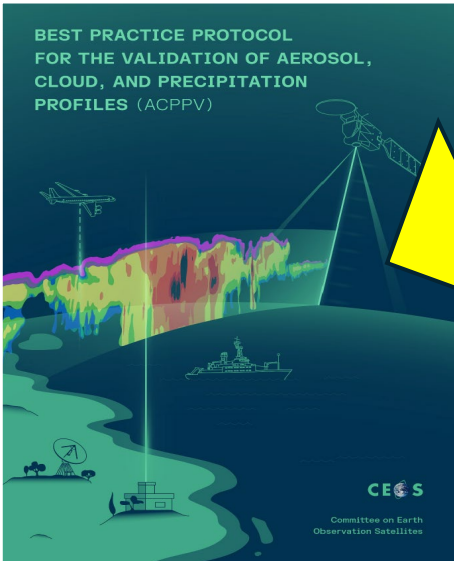
Overpass,
ESOV

Demonstrations
in Magellan (*AVL*, *EVDC*,
DISC) and Cook (*MAAP*,
DIVA) rooms

Posters 40, 41, 42, 43

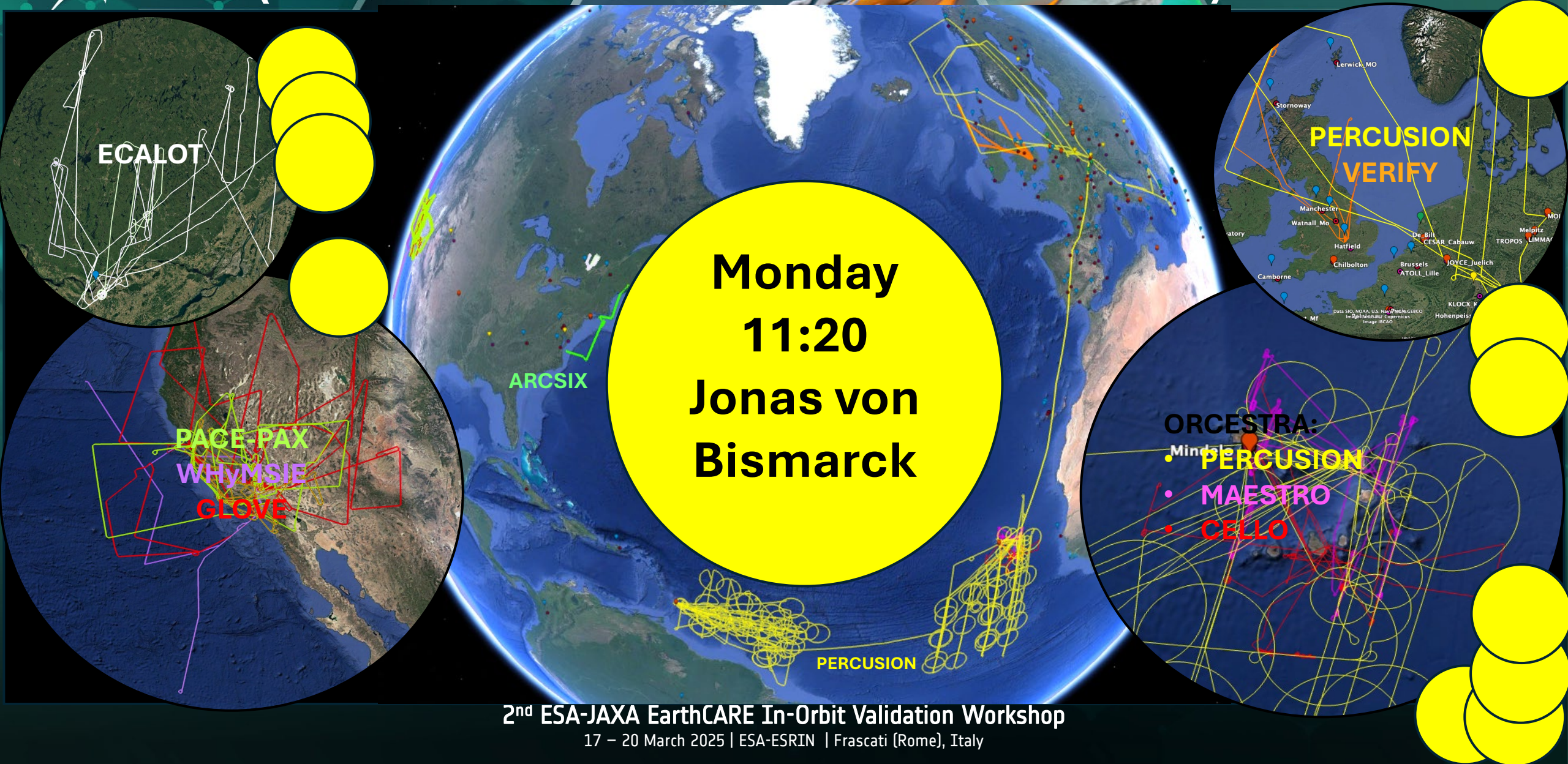
CIS
Sub2Orb: Lid. Rad. Img.

OADS

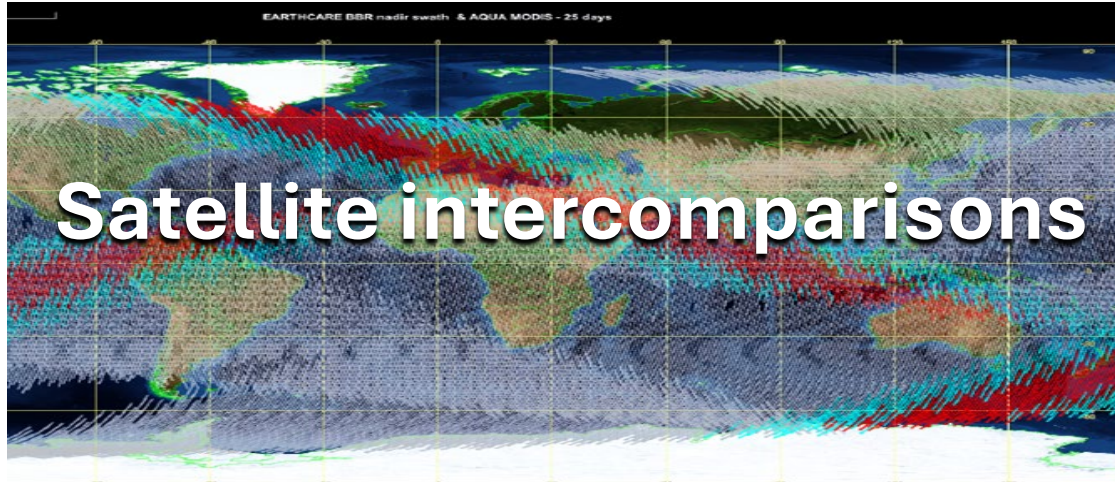




Approach: Intense Airborne campaigns (EarthCARE-dedicated and collaborative)



Validation Approach part 2

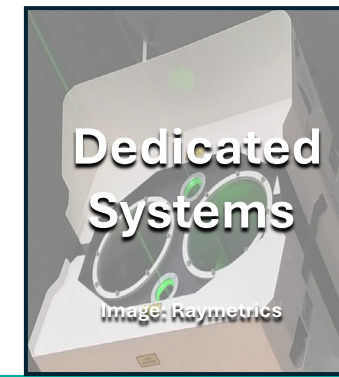


Satellite intercomparisons

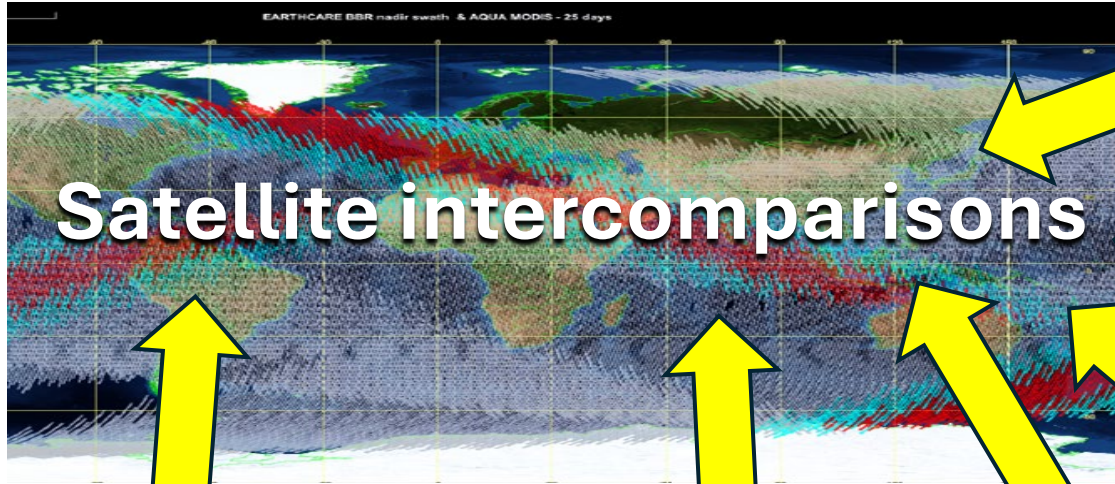


NWP assimilation for systematic QC

ACTRIS /
ATMO- ACCESS
MPLNET
LALINET
E-PROFILE
ADNET
ARM
WegenerNet
Other



Validation Approach part 2



Poster
#3
Marius Dahuron

Poster
#25
Konstantinos Michalidis

Monday
12:10
Nicolas Clerbaux

Monday
15:55
Sebastian Bley

Tuesday
10:35
Minda Le

Wednesday
10:10
Sergey Khaykin


Observations
during
Marine
Cruises

Image: TU Delft

Satellite in



NWP for systematic



ACTRIS /
ATMO- ACCESS

MPLNET

LALINET

PROFILE


ADNET

ARM

WegenerNet

Network

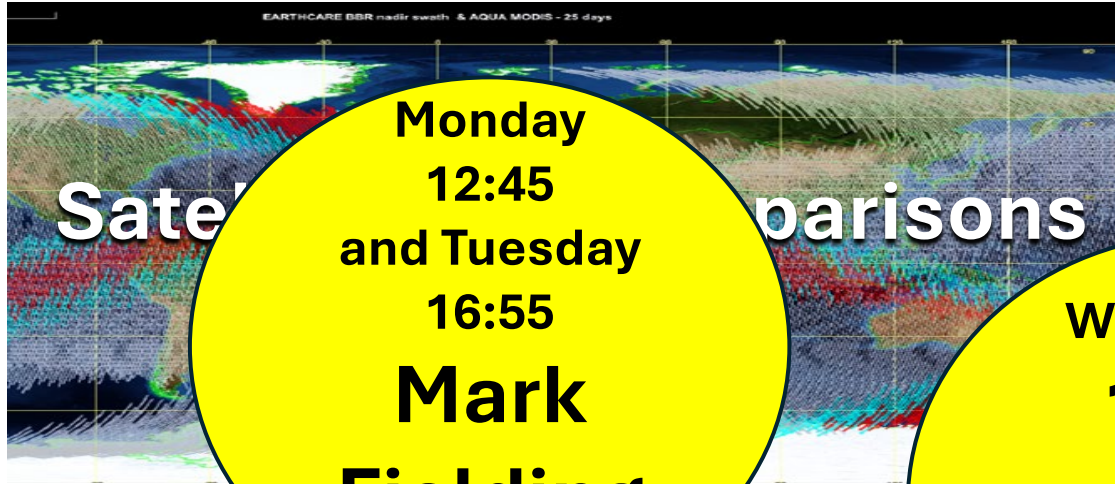
**Poster
#14
Esmael
Ghaemi**



**Mobil
System
&
Balloons
&
UAVS**

Image: TU Delft

Validation Approach part 2



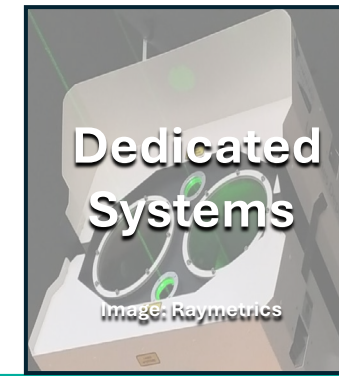
**Monday
12:45
and Tuesday
16:55
Mark
Fielding**

**Wednesday
10:00
Will
McLean**

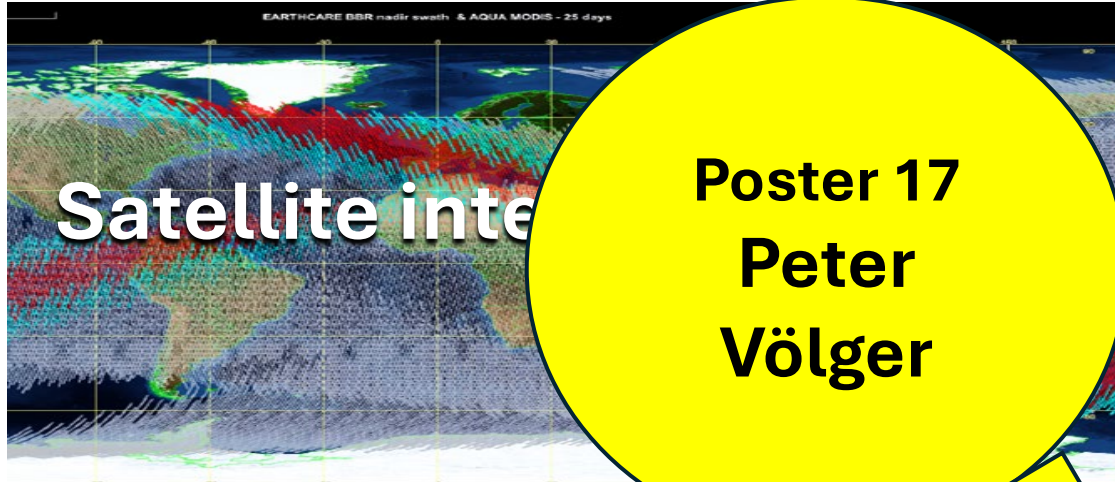
**ACTRIS /
ATMO- ACCESS
MPLNET
LALINET
PROFILE
NET
RM
Net
her**



**NWP assimilation
for systematic QC**



Validation Approach part 2



Poster 17
Peter
Völger



NWP as
for syste

Tuesday
17:30
Jean-
Baptiste
Renard

ACTRIS /
ATMO- ACCESS
MPLNET
LALINET
E-PROFILE
ADNET
ARM
WegenerNet
Other
ADNET



Wednesday
12:15
Iwona
Stachlewska

Mobile
Systems
&
Balloons
&
UAVS

Dedica
Syste

Wednesday
12:00
Franco
Marenco

Publication of validation results



Inter-journal special issue “Early Results from EarthCARE” (AMT, GMD, and ACP)

Cal/Val papers for this special issue preferably via AMT:

<https://www.atmospheric-measurement-techniques.net/submission.html>

NB. If you use data from pre-operational baselines in your papers, then pre-operational data conditions apply (need to include the related disclaimer).

In general, for each plot, make clear which baseline has been used!

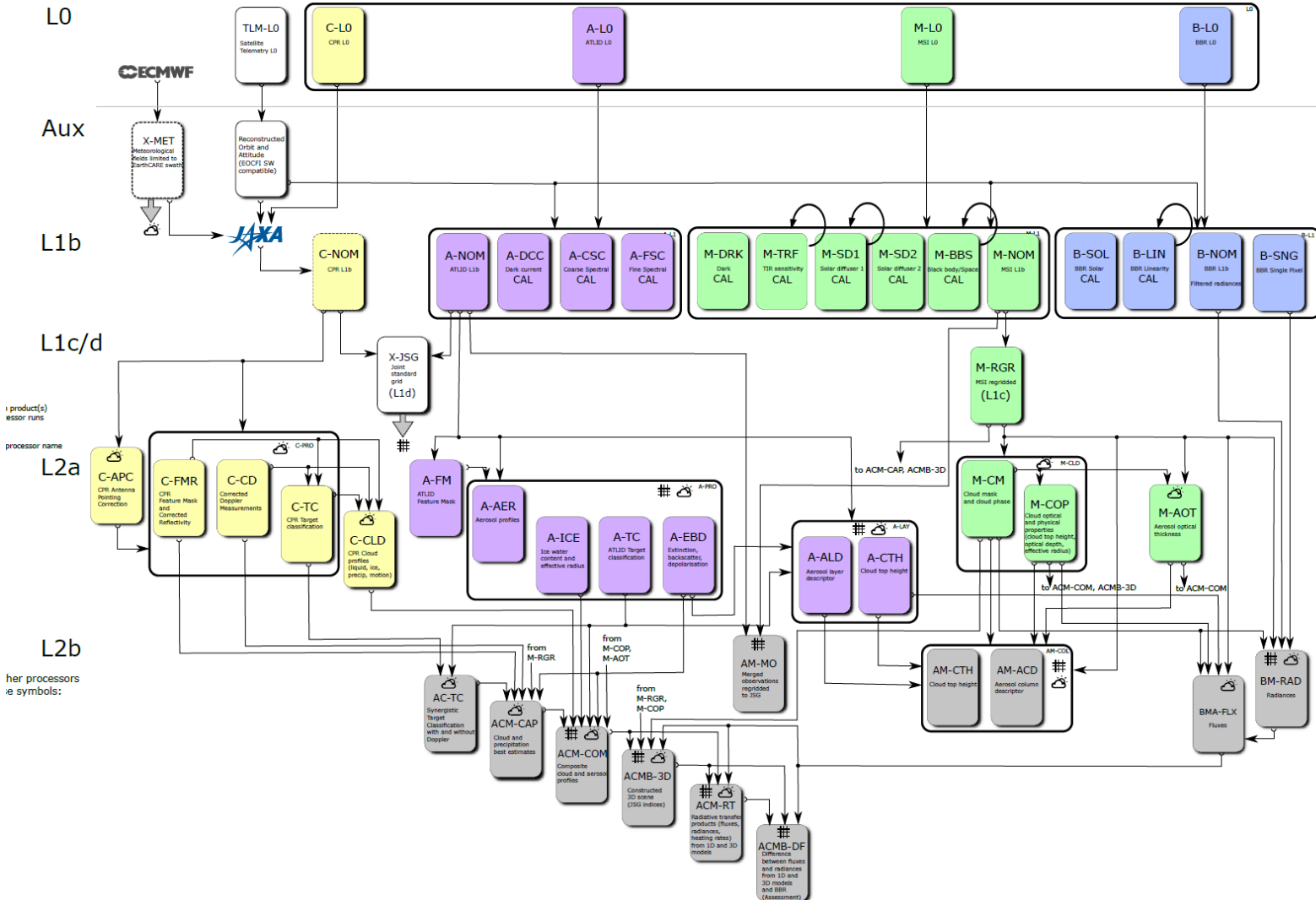
Outlook for validation teams



EarthCARE production model

EarthCARE
X-band
Telemetry

esa
EC-TN-ESA-SYS-0380
Issue 8 (13 Sep 2023)



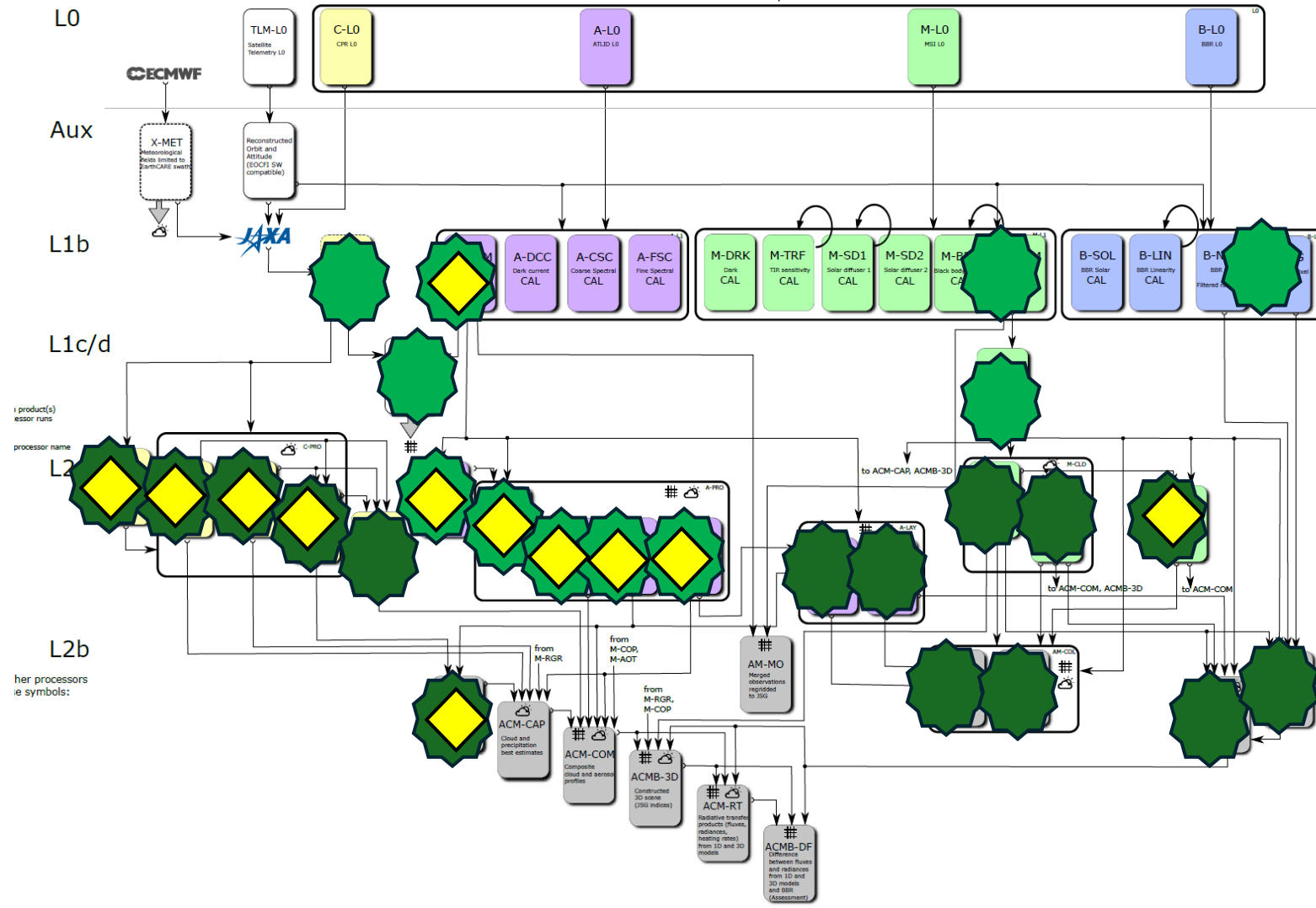
Outlook for validation teams



EarthCARE production model


EarthCARE
X-band
Telemetry

esa
EC-TN-ESA-SYS-0380
Issue 8 (13 Sep 2023)



Already released


- 2024 and 2025
- 2025 post-release only
- Baseline updated last week



validation teams



 **Already available**



**(ECVT) release
next week.
Public release by next
Workshop**

Outlook for validation teams

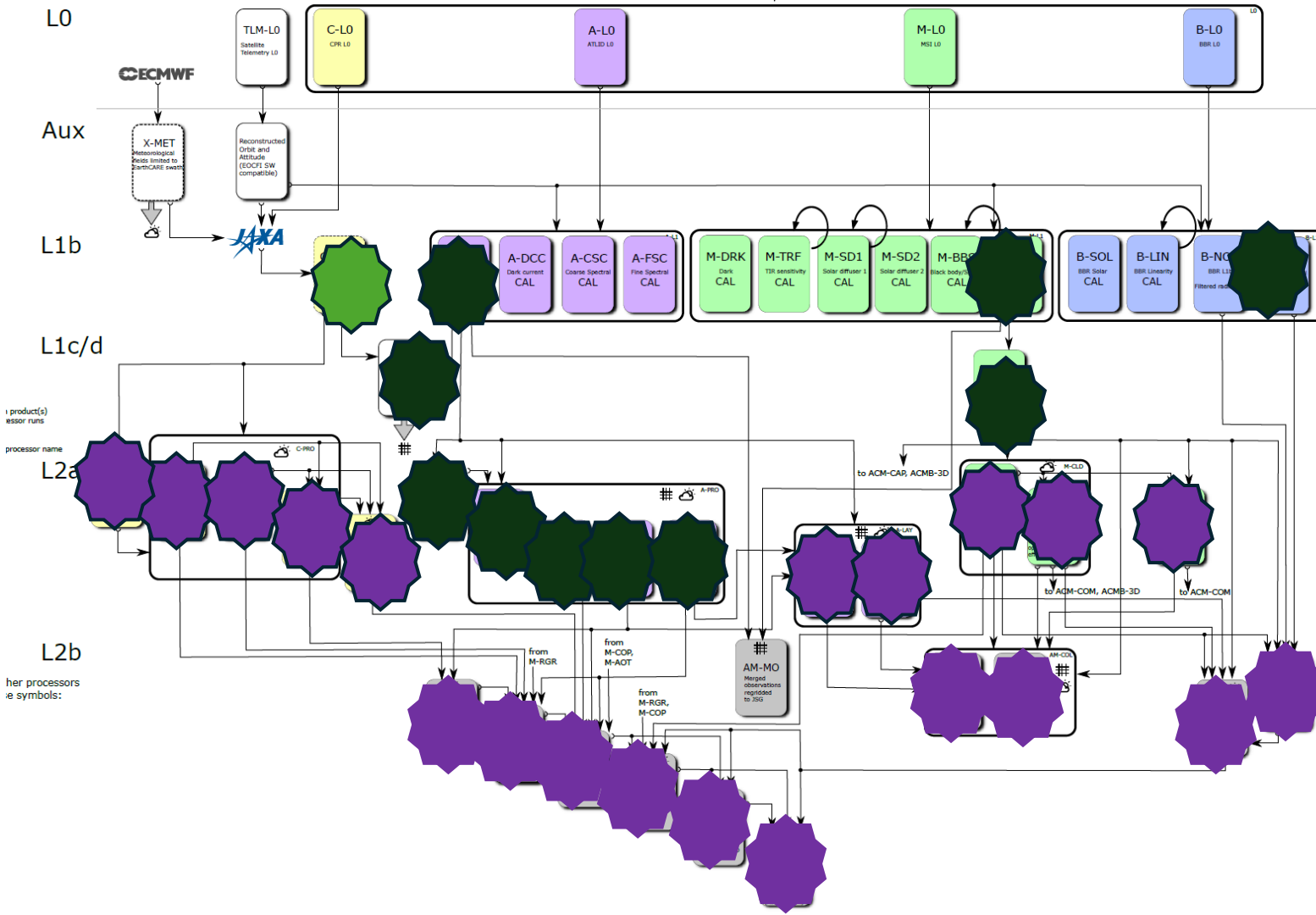


EarthCARE production model

EarthCARE
X-band
Telemetry

esa
EC-TN-ESA-SYS-0380
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Reprocessing of 2024 and 2025 data



2024&2025 already reprocessed by JAXA, latest baseline

2024&2025 Already reprocessed with older baselines, new reprocessing planned in Spring

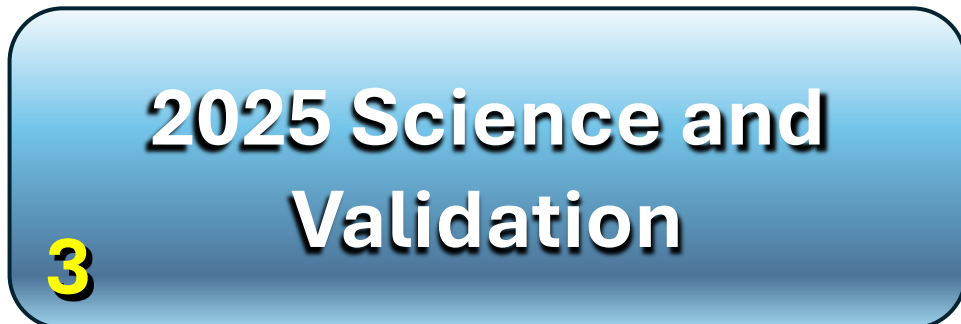
Historic data not yet processed
Reprocessing planned in Spring



- <https://www.earthcare-validation-2025-1.org/>
- Level 1 and early level 2 validation results
- Public release of Level 1
- Workshop report available for download
- Recommendation follow-up in progress



- <https://www.earthcare-validation-2025-2.org/>
- Level 2a and Two-Sensor L2b validation results
- Consolidated level 1 validation results
- Public release of Level 2a and Two Sensor L2b



- **1-5 December 2025, Tokyo, Japan**
- Science and Applications
- Validation of all products
- Public Release of three- and four-sensor products