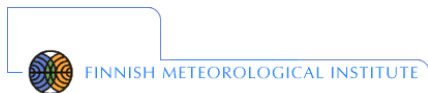


WP3 status and prospects



Jean-Christopher Lambert and the WP3 partners



TALLINNA TEHNIKAÜLIKOO
TALLINN UNIVERSITY OF TECHNOLOGY



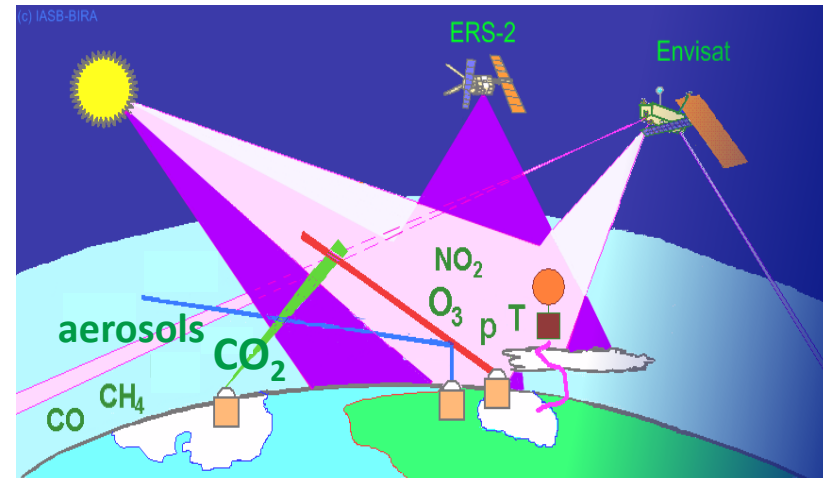
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 640276.

WP3: Context and Aims

While WP2 addresses (measurement, retrieval and smoothing) uncertainties of ECV data, assuming 1D (column/profile) measurements in a 1D homogeneous atmosphere,

WP3 further addresses:

- I. Other dimensions of uncertainties of a measurement, with focus on smoothing and sampling issues.
- II. Data comparison errors due to differences in smoothing and sampling of a inhomogeneous and variable 3D atmosphere.



$$\varepsilon_{\text{smoothing}} = f\left((A_1 - A_2) \cdot S_{\text{atmos.}} \cdot (A_1 - A_2)^T\right)$$

$$|m_1 - m_2| \leq k \sqrt{\sigma^2 + u_1^2 + u_2^2}$$



WP3	Comparison Error Budget Closure		D			D					D
T3.1	Metrology uncertainties for systems				D						
T3.2	Metrology uncertainties for comparisons							D			
T3.3	Software tools development							D		D	D

	Title	Running/Due; Status	Lead; involved
D3.1	1 st Contribution to the GAID	M4 complete	BIRA-IASB; all WP3 partners
D3.2	TN on generic metrology aspects	M12 complete	BIRA-IASB; all WP3 partners
D3.3	Review of and input to GAID	M16 complete	BIRA-IASB; all WP3 partners
D3.4	TN on measurement mismatch studies	M24 In progress	UniBergamo; BIRA-IASB, CNR, FMI, NPL
D3.5	Beta set of tools and associated documentation for the VO	M24 In progress	TUT; all WP3 partners
D3.6	Library of smoothing/sampling error estimates	M30	BIRA-IASB; all WP3 partners
D3.7	Final version of tools for integration in the VO	M32	TUT; all WP3 partners
D3.8	Final review of and update to the GAID	M34	BIRA; all WP3 partners



WP3	Comparison Error Budget Closure		D			D					D
T3.1	Metrology uncertainties for systems				D						
T3.2	Metrology uncertainties for comparisons							D			
T3.3	Software tools development							D		D	D

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D3.1	1 st Contribution to the GAID	M4 complete	BIRA-IASB; all WP3 partners
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D3.8	Final review of and update to the GAID	M34	BIRA; all WP3 partners

See presentations by WP3 partners during the next hour



WPx: outreach and related activities

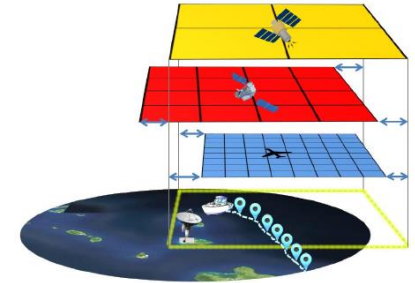


GAIA-CLIM participation (endorsed by S. Vermoote) in the International Space Science Institute team “EO validation across scales”.
ISSI travel funds for 2 meetings.

Löw et al., Reviews of Geophysics, accepted for submission

EO validation across scales

The point2area problem – challenges and solutions across disciplines



An ISSI international team proposal
Team lead: Alexander Loew

March, 2015

6.1 Core team (to be)

Terrestrial sciences

- ❖ Alexander Loew, University of Munich, Germany: team
- ❖ Darren Ghent, University of Leicester (ULEic), SENTINEL
- ❖ Gabriela Schaepman-Strub, University of Zurich, Switzerland
- ❖ Luca Brocca, Research Institute for Geo-Hydrological Information, modelling and in situ measurements

Atmospheric sciences

- ❖ William Bell, UK MetOffice, UK; GAIA-CLIM project
- ❖ Jean-Christopher Lambert, Belgian Institute for Space
- ❖ CEOS WGCV/ACSG Vice-chair, GAIA-CLIM WP leader on validation metrology
- ❖ Xavier Calbet, EUMETSAT, GRUAN validation expert

Ocean sciences

- ❖ Christian Klepp, University of Hamburg, Germany, co-teamleader; IPWG member; OceanRAIN principal investigator
- ❖ Claire Bulgin, University of Reading, UK; sea surface temperature, ESA CCI

Statistics and math

VALIDATION PRACTICES FOR EARTH OBSERVATION DATA ACROSS COMMUNITIES

Alexander Loew,¹ William Bell,² Luca Brocca,³ Claire Bulgin,⁴ Jörg Burdanowitz,⁵ Xavier Calbet,⁶ Reik V. Donner,⁷ Darren Ghent,⁸ Alexander Gruber,⁹ Thomas Kaminski,¹⁰ Julian Kinzel,¹⁴ Christian Klepp,¹³ Jean-Christopher Lambert,¹² Gabriela Schaepman,¹¹ and Tijl Verhoelst¹²



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See also Plenary #2 (tomorrow)

UNCERTAINTY

Lessons Learned for Climate Services

JULIANE OTTO, CALUM BROWN, CARLO BUONTEMPO, FRANCISCO DOBLAS-REYES, DANIELA JACOB, MARTIN JUCKES, ELKE KEUP-THIEL, BLAZ KURNIK, JÖRG SCHULZ, ANDREA TAYLOR, TIJL VERHOELST, AND PETER WALTON

Enhancing trust in climate services is a fundamental challenge being faced by providers. Complicating this challenge is how best to communicate uncertainty to different sectors that handle information in different ways depending on their decision-making frameworks. To address this problem, for the first time a workshop was held to engage with and understand the different perspectives of European research projects, institutions, and climate service providers.

The workshop targeted European-funded projects (FP7 and H2020; see the appendix for a list of key acronyms and abbreviations used in this summary) that specifically related to the delivery and/or support

AFFILIATIONS: OTTO, JACOB, AND KEUP-THIEL—Climate Service Center Germany (GERICS), Helmholtz-Zentrum Geesthacht, Hamburg, Germany; BROWN—University of Edinburgh,

CONFIDENCE IN CLIMATE SERVICES— PRESENTING UNCERTAINTY WITH CONFIDENCE

WHAT: Twenty-five participants from 10 European Union FP7 and H2020 projects (CLIPC, EUCLEIA, EUPORIAS, FIDUCEO, GAIA-CLIM, IMPACT2C, IMPRESSIONS, QA4ECV, SPECS), the European Space Agency SST CCI project, and two European institutions (C3S, EEA) met to share information about uncertainty in climate science and to discuss how to contribute to establishing confidence in the role of uncertainty in climate services.

WHEN: 15–17 February 2016

WHERE: Climate Service Center Germany (GERICS), Hamburg, Germany

BAMS meeting report (Otto et al., 2016)



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WP3: Prospects

T3.1 and T3.2:

- Finalizing OSSSMOSE results on O3 profiles (contribution to D3.4, due M24; BIRA-IASB)
- Extending these studies to other trace gases (BIRA-IASB)
- Finalizing results on radiosonde temporal representativeness and on IASI-RAOB comparisons (peer-reviewed paper + contrib. to D3.4; NPL, CNR, UniBergamo, FMI)
- Finalizing aerosol studies (contrib. to D3.4; CNR, UniBergamo, and FMI)

T3.3:

- Integration of the OSSSMOSE LUTs into the VO, detailed documentation (contrib. to D3.5)
- Integration of STAT4COLL results into the VO
- Further support to WP5 in defining the co-location functionalities of the VO

D3.6 (M30, end of August):

Libraries of smoothing/sampling error estimates for key measurement systems and data comparisons.

D3.7 (M32, end of October):

Final set of tools for the VO

+ continued support to overarching GAIA-CLIM goals such as the GAID



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