

### Cal/Val Workshop#5 Introduction and Objectives F. Niro

### 12 – 13 Dec 2017 ESA/ESRIN







# Background



- The IDEAS+ (Instrument Data quality Evaluation and Analysis Service) consortium is responsible, on behalf of ESA SPPA section, for ensuring the best data quality of ESA operational EO missions, this includes: Routine Quality Control, Algorithm Development and Cal/Val (Calibration/Validation);
- In the frame of the IDEAS+, the Task-3 Cal/Val team is the place where innovative ideas are promoted and incubated with the goal of improving Algorithm Baseline, Calibration and Validation protocols, instrument design and approaches for in-situ measurements;
- Regular Workshops are held every 9-12 months to review the status of current activities, foster synergies among the various groups and agree on the planning for the future;

### IDEAS+ Task 3 ambition: Incubation of New Concepts





### Addressing basic issues underpinning Science Exploitation











### Map of IDEAS+ Cal/Val projects

https://www.mindmeister.com/828950226?t=Bk03IBLGLM





### IDEAS+ Cal/Val projects: highlights and achievements







#### Calibration/Traceability/Uncertainty

- Strong collaboration PMOD-Luftblick; PMOD
   key partner for Pandora instrument
   characterization and products validation;
- NPL and Uni. Reading essential for preparation and chairing of Uncertainty WS; Very good feedbacks about the WS;
- EOSense approaches for in-flight calibration are valuable for verification of diffuser-based operational methods;

#### Land

- ACIX is gaining strong reputation within the scientific community;
- Validation protocols prototyped within ACIX and PV-CDRR can be reused in the frame of similar inter-comparison exercises;
- Validation approaches and techniques developed within MBASSS and S2L8VegStruct can be replicated to assess quality of satellitebased land products;

## IDEAS+ Cal/Val projects: highlights and achievements





#### **Ocean and Coastal**

- Solvo/ParBleu and Brockmann support is key to MERIS 4<sup>th</sup> reprocessing QC and Validation;
- Solvo/Parbleu contribution for the rigorous estimation of uncertainty for Ocean Color products, both radiometry and IOPs;
- Scientific collaboration (MIO, UoP, Serco, CNR) contributing to improvement of Coastal Altimetry processing and validation;

#### Atmosphere

- Improvements of Pandonia to address the needs of an operational validation network;
- FUB support crucial to test Pandora in harsh environmental conditions;
- GRASP evolution including Lidar-photometer synergistic retrieval of aerosol properties;
- Improved CIMEL for moon observation; prototype of new mobile instrument PLASMA;
- Sustained support to AERONET Calibration facility in preparation to ACTRIS;
- Advanced validation results with AIRWAVE paving the way to SLSTR application;

### Recommendations from Lille's Workshop, LOA: 6 - 7 Apr 2017





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EO Mission Performance - Documentation - Activities - Meetings & Workshops - You are here. None : Meetings & Workshops > Expert Meetings + DEAS + CalVal Workshop 2017 - Programme					
• Pi	ogramme				Meetings & Workshops
	Thursday 6 April 2017 Introduction (19.10, 19.20) Welcome and Introduction ESA				Meetings & Workshops Home Expert Meetings AVHRR Expert Meeting
0930					
09:	Welcome presenta	tion from LOA		LOA	EO Level1 Lessons Learned Workshop Expert meeting on limb sounding
10:1	<ul> <li>Lessons learned free Meeting Objectives</li> </ul>	om previous IDEAS+ Cal/Val w	orkshops and current	G. Davies, F. Niro; Serco	IDEAS + Cal/Val Workshop IDEAS+ Third Party Missions Meeting #02
100		Calibration, Traceability	and Uncertainty		IDEAS+ Cal/Val Workshop 2015
10:	<ul> <li>A Tuneable Laser f and updates</li> </ul>	or the Characterisation of Spec	trometers (ATLAS): Status	J. Groebner; PMOD-WRC	IDEAS+ Level 1 workshop
10:30	1:00 Coffe break	10 Coffe break			Proba-V Cloud Detection Round Robin Meeting
1100	1:20 An automated Rad EO Missions	iometric Calibration and data q	uality structure for Optical	S. Mackin; EOSense	Programme
11:00	Traceability and Ur	ncertainty: lessons learned from	FIDUCEO and relevance	C. Merchant: Uni. Reading	
11:20-	for ESA-SPPA activ	vities			Products validation and Evolution workshops

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DOCUMENT Proceedings Highlights and Recommendations from IDEAS+ Cal/Val Workshop, LOA, Lille, 6 – 7 Apr 2017	Entropy of the second sec

#### The Workshop

- High attendance (50 participants) from Europe and Canada
- 28 high quality scientific presentations
- Invited talk by C. Merchant on FIDUCEO lessons learnt and relevance for SPPA

#### Main Recommendations

- To reinforce focus on traceability and uncertainty, already during mission design;
- To work toward provision of uncertainty in L1, including the relevant documentation;
- To continue support validation networks, i.e., upgrade of instruments and calibration facilities, algorithms development;
- To build on the protocols prototyped for SR and Cloud mask Validation;
- To maintain and expand Cal/Val tools and match-up databases, improving accessibility of data;

### **Objectives of current Workshop**



- Follows on from the previous meetings, bringing together the Task 3 team and ESA to review and discuss final results of Phase 2 activities;
- To review progress since the previous workshop, and to help plan future work activities during Phase 3;
- Continue discussions from previous meetings on the approaches to:
  - Calibration/Validation;
  - Algorithm Improvements;
  - Instrument Characterization;
  - Traceability and Uncertainty estimates;
  - Ground based measurements and Field Campaigns;
- Continue to look for and identify synergies between activities, and agree on actions to take advantage of the synergies;
- All areas of Task 3 will be presented at this meeting;



20:00 – Social Dinner