**CEOS WGCV #47, Virtual Meeting**

**Hosted by Webex**

**July 14 to 17, 2020**

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| Thursday 16 July 2020 | | |
| Attendance:  K N Babu (left at 1 minute in)  Vinod Bothale  Cindy Ong  Medhavy Thankappan  Jayasri (left 2 h 8 minutes in)  Abhisek Chakraborty  Xiaolong Dong  Ian Lau  Nigel Fox  Philippe Goryl  Xingou Xu  Kurt Thome  Akihiko Kuze  Erin Lynch  Albrecht von Bargen  Santhi Sree  Peter Strobl  Patrice Henry  Lingling Ma  Raj Kumar (left 14 minutes in)  Jaime (left 30 minutes in)  Arundhati  Vivan Prakash  Shweta Sharma  Jean-Christopher Lambert (left at 1 hour in)  Raj Kumar Sharma  Yonhguang Zhao (left straight away)  Greg Stensaas  Nakshatra (joined 27 minutes in and left 1.5 hours in)  Robert Woodcock (joined 1 hour in)  Usha Ryali (joined 1 h 20 minutes in and left 2 h 8 minutes in) | | |
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| **Sub Group Reports** | | |
| 5:00 GMT | The Microwave Sub Group highlights and the microwave standards task | Xiaolong Dong |
| (5:03) | Main tasks standards and metrics for scatterometers and wind retrievals  Created 2020  Target to finish Q4 201  Teleconference 21/4/2020  Project meeting 16/6/2020  9 Participants  Specific work plan of standards and metrics for scatterometers and wind retrievals  The updated workplan (version 1.3) will be confirmed in the Task meeting scheduled in August, 2020   * Objective: To develop the standard and metrics of spaceborne radar scatterometer backscattering measurement calibration, wind retrieval approaches, wind data validation and assessment for ocean surface vector winds.   Outcomes:   * The CEOS guidelines/international standards for calibration; * Retrieval data validation guidelines; * Best practices of calibration and validation data sharing and collaborations.   Following activities:   * Task team meeting: August, 2020 * Special sessions at IGARSS 2021 & IOVWST Meeting 2021 |  |
| 5:10 | The Terrain Mapping Sub Group and progress and updates on DEM Inter-comparison task | Peter Strobl |
| (15:14) | Revival of the Terrain Mapping Sub Group (TMSG)   * Proposed at WGCV45 in July 2019 * Decided by SIT in September 2019 * Invitation email sent to last available participant list in January 2020   as of July 16th 2020:   * 50(38) subscriptions * 13(12) countries * ~50% with CEOS background * ~30% Geomorphometry.org * 30(28) expressed interest in the intercomparison exercise DEMIX   TMSG status  Subscription page: <https://ec.europa.eu/eusurvey/runner/WGCV-TMSG_membership>  Development:  • DEMIX call for participation issued 5 May 2020  • 28 participants registered (CAS, DLR, EC, ESA, JAXA, NASA, USGS) + domain experts & industry  • Kick-off meeting held with 26 participants on 26&30 June 2020  Intermediate results:  • Three sub-groups are set-up:  1) terminology and analytical basis  2) algorithms and software – open source tool box  3) platforms and processing  • Each group received at least 7 contributors, lead is more difficult…  Concerns:  • Further elaborate and detail scope and objectives  • Agree on collaboration tool(s) (Teams/Slack/Github) – others experience?  • Enhance visibility  • Find platform - cloud environment (MAAP?)- sharing with other users? -Philippe will put in contact with people at ESRIN for discussing the platform. Will also check with Andrea Della Vecchia  • Typology of DEM uses (Orthorectification, atm. Correction, Hydrology, Pedology, …)  o Do such typologies already exist somewhere?  • Recommendations to be targeted at use typology?  Mix of old and new people |  |
| 5:20 | Q&A |  |
|  | *from Greg Stensaas:*  Great job. I have heard of a potential common DEM from WORLD DEM, has that been discussed in the group.  Peter: Look into existing can be used or fusing all the free and open DEMS together. 30m free and open DEM to be released soon.  Greg: a 30 m common DEM would solve lots of our problems. |  |
| **Agency Presentations** | | |
| 5:30 GMT | JAXA | Akihiko Kuze |
| (15:31) | All current satellites are healthy  **Future:** ALOS-3 (Optical only) launch soon.  ALOS-4 (L Band SAR) 2021.  2022 EarthCare (Joint mission with ESA)  GOSAT-GW 2023.  Updated JAXA for Earth website <http://earth.jaxa.jp/en.html>  Showing GOSAT Covid-19 CO2 information for 7 cities.  Beijing/Tokyo 5 year data of CO2 in lower troposphere show enhancement reduced in February-April 2020.  Joint Vicarious Calibration Campaign 2020 OCO-2, -3, TROPOMI, GOSAT, GOSAT-2 – July 4th JPL went to the calibration site at RRV, NV, U.S.A.  Main challenge is BRDF correction because not all sensors are view nadir.  Had to use individual cars from Los Angeles and wear masks.  (5:41) |  |
| 5:40 | GA | Medhavy Thankappan |
| (5:43) | **Geoscience Australia Agency Report**  Phase 1 of continental surface reflectance validation – wrapping up. 14 sites 55 data collections, 19 LS8 23 S2A 14 S2B.  Funding by Digital Earth Australia, managed by CSIRO.  DEA Technical Data Summary report- to be published soon.  Specchio to publish all the field spectra.  Phase 2- Cover additional sites not easy to access – veg, relief, aquatic.  UAV measurements with Flame Spectrometer.  Using UAV to characterise BRDF  Pandora instruments (FRM4AC) ESA instrument. Attended Pandonia workshop in Austria in Sept 2019.  SAR corner reflector array in Surat Basin. Coordinates updated of positions. Soon to be published on CEOS Cal/val portal – SAR sub group.  2 corner reflectors at Yarragadee station in WA.  Validation of InSAR and GPS results in areas of coal mining in Sydney Basin Appin NSW.  ARD workshops.  Surface reflectance activities (FRM4VEG and SRIX)  Collaboration with USGS on LS collection 3, including aquatic SR.  Proposal for Australian National Calibration Validation Facility  Digital Earth Africa  CARD4L InSAR PFS definition work and assessments with LSI-VC  (5:57)  CHAT:  from Greg Stensaas (Guest) to everyone:  Have an idea on when you will be able to test the full range spectrometer in comparison to ASD?  from Medhavy Thankappan (Guest) to everyone:  Thanks Greg, we are currently doing some comparisons with the ASD, as we only got that delivered last week, but we expect to have it lab calibrated |  |
| 5:50 | AIR, CAS | LingLing Ma |
| (5:58) | Aerospace Information Research Institute (AIR), combine 3 former CAS institutes:  Academy of OptO-ELECTRONICS  Inst of Electronics  Inst of Remote Sensing and Digital Earth  >2800 staff  11 cal val sites as ground target sites for evaluationg satellite products  4 calibration sites: Baotou, Dunhuang, Qinghai, Yunnan with automatic measurements for surface and atmospheric characteristics  7 validation sites.  Lab calibration to lower than 1.5% 380-2400 nm via black body and cryogenic radiometer. Stray light correction improvement to signal  Sandy Site at Baotau into RadCalNet. Deployed automated 3x channel radiometers, Lidar and microwave micrometre, and camel  UAV multi angle method- BRDF at Golmud.  Future: Extend SWIR at Baotou 4 multi channel radiometers (1 on grey, 3 on sandy).  High altitude balloon campaign. Demonstrate spaceborne radiometer. To be done in Aug-sept 2020 in Golmud, Qinghai province. 80km alt.  Dragon 5 Project.- Cross cal over RadcalNet sites.  (6:14) | - |
| 6:00 | NRSCC | Xiaolong Dong |
| (6:14) | **NSSC Update of EO Missions and CAL/VAL**  National Space Science Center Chinese Academy of Sciences (NSSC,CAS)  HY-2a, 2b, will launch 3rd  CFOSAT- Radar scaterometer  COSM -microwave imager to be launched 2020  FY3 meteorological satellite. 3 sats, 4th to be launched 2021/2021  GF-5 atmospheric hyperspectral satellite to be launched this year  New ground station calibration campaign June-July 2020 in inner Mongolia  (6:26) |  |
| 6:10 | CSIRO | Cindy Ong |
| (6:27) | Biomass validation and supersite workshop  Tumbarumba site  Pinnacles tower design  Pinnacles collaboration  AEROSPAN  AUSCALVAL  (6:39) |  |
| 6:20 | ISRO | Santhi Sree B |
| (6:40) | Radiometric Calibration of Optical & Microwave Instruments aboard:  Resourcesat / Cartosat / Oceansat2(OCM)/ SAR/ NISAR Natural Resources Management  Scatterometer / INSAT-3D Weather Prediction  Vicarious calibration exercise conducted over   * Desert site in Rajasthan, India * Snow Site at Manali, India   Estimation of MTF for high resolution sensors  Used in-house site for sensors from India and other agencies  Microwave sensor calibration:   * NISAR * ISRO- JPL joint Calibration plan worked out * Calibration site and modes main topics * SAR Calibration site at Antarctica * Addition in corner reflectors * Active RadarCalibrator qualified * Pan-India network developed for L/C bands * Multi-temporal Sentinel-1 and ALOS PALSAR mosaic data used * SCATSAT-1 CalVal Status * Comparison with ASCAT and NCRMWF * Wind speed bias profile - Across track * Validation of NOVASAR Cal products * Development of in-house prototype Tri-hedral/Di-hedral CRs for NOVASAR Calibration * Polarimetric calibration:   Airborne SAR data (L- and S-Band) Cal using Indian site and Rosamond Cal site in USA  Optical sensors:   * Exploring additional Indian Cal-Val targets and locations for Optical, Microwave and Thermal data calibration * Identified Coal, Iron and Limestone based areas for Hyperspectral data calibration * Periodical radiometric Calibration of operational and Initial phase ISRO Resourcesat and Cartosat sensors   (7:06) |  |
| **Collaborations with other WGs and VCs** | | |
| 6:35 | WGISS – the interoperability lab | Robert Woodcock |
| (7:07) | CEOS Interoperability Terminology Report (Draft):   * + - …the terms Analysis Ready Data (ARD), interoperability, and harmonization ***are often used and, to a large extent, used inconsistently***     - Interoperability represents a continuum of compatibility for products, services, algorithms.   **Roadmap – Next steps**  Three types of interoperability   * CEOS data source to Data Cube * Data Cube APIs * Analytics notebooks and services   + CalVal Services – for CEOS and Industry use? * Roadmap:   + WGISS+SEO deploy the lab   + CEOS COAST and WG Disasters: inventory of data, analytics, etc   + Define joint interop experiments for capabilities needed by those project   + Demonstrate and validate jointly in the Lab(s)   (7:21) |  |
| 6:50 | Q&A |  |
|  | CHAT:  From Peter STROBL (Guest) to everyone:  @Rob is there a timeline?  from Robert Woodcock (Internal) to everyone:  We're expecting the lab to be up in a couple of weeks. Currently held up with some IT approvals and the July holiday season in the USA  Cindy: Timeline for joint meeting with WGISS?  Rob: No international flights until July 2021. All remaining meetings as virtual. Could do a virtual joint.  from Peter STROBL (Guest) to everyone:  @Rob, any chance the lab could host some of the DEMIX related processing?  Rob: Yes, limit is the budget. Cost of hosting in the cloud. Test and validate an interoperaopability experiment, if size is okay.  Greg to Rob: Spectral variation and band alignments between sensors. Is that something that is being tackled by the interop lab?  Rob: Lab itself, no, but the people using the lab could do, USGS LS-S2 harmonisation, place to play if needed.  Greg: Planet interoperability workshop in early October, are you attending?  Rob: Brian and GA are engaged with it. |  |
| 7:00 Adjourn | | |