CEOS LSI-VC-4 / SDCG-12 / GEOGLAM Trial Joint Meetings
5th – 8th September 2017
ESA/ESRIN, Frascati, Italy

CEOS has long sought a more holistic approach to land surface imaging activities, including shepherding relevant observing requirements and associated CEOS strategies. This meeting seeks to trial the approach of an 'expanded' LSI-VC meeting, co-located with thematic teams/sessions related to forests (SDCG-12) and agriculture (Ad-hoc WG for GEOGLAM). The meeting seeks to test the value of the concept and will include both joint plenary and parallel thematic sessions. The joint sessions will focus on topics of common interest to all groups that are consistent with the vision for a single group with overall responsibility for requirements and strategies relevant to LSI. These are:

1. **CEOS Analysis Ready Data for Land (CARD4L)** *[A Lewis (LSI-VC) to formulate and chair this session]*

   This is core LSI-VC business but with significant effort across all groups. The session will review overall status, take stock of activities in each group, and ensure that resources are adequate.

   Expected outcomes: Communicate the status and discuss the way forward on CARD4L (topics include: an approach/strategy to engaging data providers in the provision of CARD4L; the strategy and schedule for fine-tuning the baseline definitions, with a benchmarking versus ongoing Agency activities; defining an approach for periodically updating the CARD4L definition and Product Family Specifications and the status of each Agency versus these; the CARD4L Assessment Framework; and the CARD4L/LSI-VC role in a broader CEOS ARD strategy).

   Understand how LSI-VC and the thematic activities can work together to encourage more data providers to see the need to provide CARD4L compliant data.

   A statement of ARD needs for thematic pilots.

2. **Moderate Resolution Sensor Interoperability (MRI)** *[E Fosnight to formulate and chair this session]*

   The MRI chair initiative supports foundational work bridging the gap between ARD and multi-sensor data sets for use with FDA including Data Cubes. The MRI initiative for 2017 consists of the MRI Framework, the initial Landsat 8 and Sentinel-2 case studies and the MRI Survey.

   Expected outcomes: Review 2017 deliverables. Discuss way forward into 2018 for MRI, including organizational structure, update of Framework, new case studies and survey of the state of the art. Review and discuss the input to the MRI submission to CEOS SIT Technical Workshop and Plenary.

1. **Pilots: Global Data Flows and FDA** *[B Killough (SEO) Formulate/Chair session]*

   The joint session will review the conclusions of the SDCG Global Data Flows study which was identified by the community as a precursor to the broader CEOS FDA initiative. The GEOGLAM user perspective would help to build on the GFOI perspective in the initial study, and support consideration of the impact on priorities for CEOS LSI activities going forward. The 2017 pilots are within the purview of the FDA team, but these demonstrations often relate to CEOS initiatives such as GFOI and GEOGLAM and are dependent on the ARD work being led by LSI-VC. The joint session is an opportunity to review the status and exchange

views among the groups as to next steps on these pilots and ensure a coordinated approach across the various activities.

Expected outcomes: Review and discuss high-level conclusions from the GDF and FDA reports and how these findings might influence CEOS pilots and Agency implementations of future data architectures with a focus on coordinating activities for increased impact.

2. **Land Surface Imaging Requirements and CEOS Integrated Observing Strategy** *[J Lacey (LSI-VC) to formulate and chair this session]*

Explore a common approach to the collation of requirements for land surface imaging, and the path for those requirements to inform a CEOS LSI observing strategy, that could be promoted by LSI-VC, to support the CEOS Chair 2018 priority on: *Operational data provision (optical and SAR) to support global initiatives on land, land use and forestry (e.g. GEOGLAM, GFOI), with additional efforts where necessary to respond to the CEOS Carbon Observation Strategy from Space*. LSI-VC has identified that the methods developed by GEOGLAM could potentially be used as a general 'template' for new application areas that may arise, and this should be discussed. The session will seek to develop a common understanding of the overall requirements for LSI across the main CEOS activities, including GFOI, GEOGLAM, the CEOS Carbon Strategy, and perhaps including relevant ECVs; land surface and coastal water; and, disasters. Each group will be asked to bring a version of their requirements in a single consistent format that will allow creation of a unified statement.

Expected outcomes: an agreement on the approach for a consolidated CEOS LSI observing strategy and initial actions, in support to the strategic Goal of the incoming CEOS chair EC.

The first day of the joint sessions (Wednesday afternoon, Thursday morning) will address these four topics. The closing half-day session will address:

3. **Future LSI-VC Work Plan**

Each group will communicate the key activities within their work plans with a view to developing an understanding as to which are common among the groups and should be within a future LSI-VC Work Plan, and whether they are included in the current plans.

Arrive at an understanding of how the different parts of the CEOS FDA strategy will go forward and impact each of the groups – individually and collectively.

Expected outcomes: awareness of each Agency of plans with regard to the above topics, in particular ARD generation.

4. **Next steps brainstorming**

Of the process for building on the trial meeting to achieve a 'future' LSI-VC, if indeed it is concluded to be appropriate. The session will include:

– Practical considerations presented by all groups, around the annual calendar of their respective constituencies, their representation, membership and leadership, their capacity and work plans, logistics around larger meetings, etc.;

– Discussion of which issues or functions can best be achieved in a more 'centralised' model, and which must remain within the expert thematic groups and which issues are suitable for joint discussion;

– A review of lessons learned from the trial meeting; and,

– A high level 'road-map' of the steps involved in moving to a 'future' LSI-VC state (ideally prepared in advance).

Week at a Glance

Week of Monday 4th September (timings to be confirmed when all meeting applications have been received and attendance reconciled with room sizes).

Monday 4th	Tuesday 5th	Wednesday 6th				Thursday 7th			Friday 8th
GFOI Early Warning TF	SDCG-12	Joint Session				LSI	SDCG	GEOGLAM	Joint Session
SDCG Early Warning	SDCG-12	LSI	SDCG	GEOGLAM		Joint Session			*Travel*

Agendas for the individual parallel meetings LSI-VC-4, SDCG-12, and GEOGLAM will be provided separately. Joint session agendas are outlined below.

Identification: Please bring passport or ID card daily for access to ESRIN.

ESRIN Staff Bus: ESA shuttle bus leaves from Frascati (Piazza di Roma, close to the newspaper stand. It has usually an ESA sign behind the windscreen) 8:05, 8:30 and 9:05. 8:30 bus suggested for the meeting participants. Return buses at 17:20, 18:15 and 19:00. Priority will be given to ESA staff but if places are available also visitors can ride.

From 6 to 8 Sep we booked the following transfers:
06 Sep Car 1 - 08:00 Frascati Piazza Marconi (Town Hall) to ESRIN
        Car 2 - 07:45 Villa Tuscolana- about 08:00 Frascati Piazza Marconi (Town Hall)to ESRIN
         Car 1 and 2 - 18:00 ESRIN (Building 1) to Frascati and Villa Tuscolana

07 Sep Car 1 - 08:30 Frascati Piazza Marconi (Town Hall) to ESRIN
        Car 2 - 08:15 Villa Tuscolana- about 08:30 Frascati Piazza Marconi (Town Hall)to ESRIN
        Car 1 and 2 - 18:00 ESRIN (Building 1) to Frascati and Villa Tuscolana

08 Sep Car 1 - 08:00 Frascati Piazza Marconi (Town Hall) to ESRIN
        Car 2 - 07:45 Villa Tuscolana- about 08:00 Frascati Piazza Marconi (Town Hall)to ESRIN
         Car 1 and 2 - 12:30 ESRIN (Building 1) to Frascati and Villa Tuscolana

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Wednesday 6th September
Joint Sessions
Room Magellan

	08:30 – 09:00	Welcome Coffee

Session 1		**Welcome**

J1:	09:00 – 09:10	Welcome Remarks	Co-Leads: LSI-VC, SDCG, GEOGLAM
		– *Tour de table* introductions	

J2:	09:10 – 09:20	Overview and Recap	S Ward (SIT Chair Team)
		– Motivation and Objectives – Framing final Session discussions on future joint activities – Joint Topics – Agenda Outline	

J3:	09:20 – 10:00	Core Mission Status *Provide a common background for all participants on the status of core land surface missions (e.g. technical, programmatic, product)* – Landsat-7, -8, -9+ (10 min, J Lacey) – Sentinel-2A, -2B, + (10 min, B Hoersch) – Sentinel-1A, -1B, + (10 min, P Potin TBC) – Sentinel-3A,-3B, + (10 min, TBA)	

Session 2		**Analysis Ready Data** *A Lewis (LSI-VC) Chair*

J4:	10:00 – 10:10	CARD4L Overview and Status	Adam Lewis (LSI-VC)
		– **Status report on the CARD4L efforts and outlook** – Discussion of the broader CEOS ARD strategy – Discussion: *How can **LSI-VC** and the thematic activities **work together to encourage more data providers to see the need to provide CARD4L***	

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compliant data?

J5:	10:10 – 10:30	**CARD4L-Compliant Product Generation** *Status, plans, roadmap* – USGS (Landsat, 10 min) – ESA (Sentinel-2, 10 min)	USGS <mark>TBA</mark>, ESA <mark>TBA</mark>
J6:	10:30 – 10:40	**ARD Needs and Plans for Thematic Pilots** – GFOI, GEOGLAM, Data Cubes – Sentinel-2 Surface Reflectance products for CEOS pilots – Discussion: *How can the thematic pilots help in terms of validation data for CARD4L product assessments and ongoing QA, and in providing a feedback loop on the 'business case' for ARD?* – Outcome: A statement of ARD needs for thematic pilots.	B Killough
J7:	10:40-10:50	**GOES-16 Surface Reflectance Products** – Discussion on CARD4L potential and value for land applications (forests, ag, others)	All
J8:	10:50 – 11:10	**Discussion** – Broader CEOS ARD Strategy	All
	11:10 – 11:30	Break and Photo	
Session 3		**Moderate Resolution Sensor Interoperability** *E Fosnight Chair*	
J9:	11:30 – 11:45	Overview – Framework – Case study – Survey	E Fosnight

J10:	11:45 – 12:00	Harmonized Landsat Sentinel-2 – HLS case study	J Masek
J11:	12:00 – 12:15	EC/ESA MRI-related activities	All

J12:	12:15 – 13:00	Discussion time
		 Spread across the session and in conclusion
		
		  – Synergy among CARD4L, MRI, FDA, GFOI, and GEOGLAM
		  – MRI transition to 2018: organizational structure, update of framework, case studies, and Survey
		  – Demonstrating generation of the HLS data set and future data cube ingestion
			All

	13:00 – 14:00	Lunch	

14:00 – 18:00: *Parallel meetings LSI-VC-4, SDCG-12, and GEOGLAM.*
20:00 -: *Group Dinner (No-Host), Ara Anua (http://www.ristorantearaanua.it/contatti/)*

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	13:00 – 14:00	Lunch	

Session 4	**Pilots: Global Data Flows and FDA** *B Killough (SEO) Chair*	

J13:	14:00 – 14:10	Session Overview	B Killough
J14:	14:10 – 14:20	Review of Global Data Flows Study	G Dyke
J15:	14:20 – 14:50	FDA Update and Implications – Current and future activities – Plenary recommendations and decisions	S Ward
J16:	14:50 – 15:00	Report on Copernicus Data and Information Access Services (DIAS)	B Rosich (TBC)
J17:	15:00 – 15:20	Data Cube Pilots – ODC Status and Vision – Status of Pilots: Switzerland, Colombia, Vietnam, Taiwan, Uganda – Lessons Learned	B Killough
J18:	15:20 – 15:45	Discussion	All
	15:45 – 16:00	Break	

Session 5	**Land Surface Imaging Requirements** *J Lacey (LSI-VC) Chair*	

J19:	16:00 – 16:30	Land Imaging Requirements Assessment – Requirements tables and approach – Example from GEOGLAM, including	A Whitcraft

2017 "refresh"
- Inclusion of *in-situ* requirements
- Identifying common requirements across applications
- Carbon assessment plans

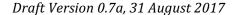|			
J20:	16:30 – 17:00	Systems Engineering Tools for Integrated Land Surface Imaging – CEOS Tools for Land Imaging Assessments – MIM Database API plans (gap analysis queries) – COVE Tool updates (new coverage analysis tool, demo) – Lesson Learned (gap analyses, integrated observing strategies)	B Killough
J21:	17:00 – 18:00	Discussion: Land surface imaging requirements and CEOS integrated observing strategy – Including gap analysis objectives	All

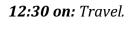***09:00 – 13:00:*** *Parallel meetings LSI-VC-4, SDCG-12, and GEOGLAM.*

Friday 8th September
Join Sessions
Room Magellan

	08:30 – 09:00	Welcome Coffee	

Session 5		**Review of Meeting Outcomes**	
J22:	09:00 – 09:15	GEOGLAM Meeting Main Outcomes	GEOGLAM Co-Leads
J23:	09:15 – 09:30	SDCG-12 Main Outcomes	SDCG Co-Leads
J24:	09:30 – 09:45	LSI-VC-4 Main Outcomes	LSI-VC Co-Leads

Session 6		**Review of Joint Way Forward and Closing**	
J25:	09:45 – 10:00	Options for Joint Way Forward	SIT Chair Team
J26:	10:00 – 10:30	Discussion of Options for Joint Way Forward	All
	10:15 – 10:30	Break	
J27:	10:30 – 11:00	Discussion of Options for Joint Way Forward (continued) – Potential for harmonisation – Next steps brainstorming – Future meetings	All
	11:00 – 11:15	Presentation of Joint Meeting Outcomes to SIT Technical Workshop – Coordination of a joint briefing from the LSI-VC, SDCG, and GEOGLAM ad hoc WG Co-Leads to SIT TWS	All

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J28:	11:15 – 12:00	Additional discussion on coordination topics	All
J29:	12:00 – 12:15	Review of Actions	Secretariat
J30:	12:15 – 12:30	Closing Remarks	Co-Leads: LSI-VC, SDCG, GEOGLAM
	12:30	Lunch	

12:30 on: *Travel.*

GoToMeeting Details

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United States: +1 (571) 317-3129
Australia: +61 2 9087 3604
Austria: +43 1 2530 22520
Belgium: +32 28 93 7018
Canada: +1 (647) 497-9353
Denmark: +45 32 72 03 82
Finland: +358 923 17 0568
France: +33 170 950 594
Germany: +49 692 5736 7317
Ireland: +353 15 360 728
Italy: +39 0 230 57 81 42
Netherlands: +31 207 941 377
New Zealand: +64 9 280 6302
Norway: +47 21 93 37 51
Spain: +34 932 75 2004
Sweden: +46 853 527 827
Switzerland: +41 225 4599 78
United Kingdom: +44 330 221 0088

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