

**MINUTES OF THE 6th MEETING OF THE CEOS
LAND SURFACE IMAGING VIRTUAL CONSTELLATION (LSI-VC)**

**5-7 September 2018
Ispra, Italy**

Key Outcomes

1. A schedule for the continual update of the CARD4L Product Family Specifications (PFS) was agreed (see page 3).
2. Surface Brightness Temperature (SBT) is not needed as a CARD4L product – there is no clear user base. The Land Surface Temperature (LST) PFS will be retained, with references to SBT removed in the next update cycle.
3. It was agreed: at LSI-VC-7, we plan to prototype the self-assessment template, which will define what needs to be provided to the CEOS Working Group on Calibration & Validation (WGCV) for each of the PFS fields. In the meantime, agencies will make their self-assessments more robust – up to the point where they are ready to engage WGCV. This will inform the discussion on a template at LSI-VC-7, and will progress these assessments toward the WGCV review stage by LSI-VC-7 (February 2019) after which they can rapidly be submitted to WGCV.
4. The following approach was agreed for CEOS ARD promotion going forward:
 - a. Develop an information pack capturing the key value of CARD4L, using the information notes as a basis.
 - b. Communicate actively with the commercial sector using the information pack and networks including UK Catapult, DIAS providers, and EARSC.
 - c. Increase communication with remote sensing agencies, scientists, and commercial providers through the ESA Living Planet Symposium, IGARSS, the ESA Ground Segment Coordination Body (GSCB), and other forums such as the World Geospatial Forum.
 - d. Act on the suggestions from the CARD4L survey.
 - e. Promote datasets via the CEOS ARD website (i.e., the CARD4L stocktake) and also through the relevant WGISS systems (e.g., Connected Data Assets (CDA)).
5. It was agreed that we need to formalise what we mean by ‘interoperable’ before further work can be done on the Moderate Resolution Interoperability (MRI) tasks.
6. Steve Labahn replaced Jenn Lacey as the USGS LSI-VC Lead.

Wednesday September 5th

Session 1: Welcome and Introductions

Welcome and Introductions

LSI-VC Leads Adam Lewis (GA) and Jenn Lacey (USGS), also on behalf of LSI-VC Lead Susanne Mecklenburg (ESA) who was not able to join on the 5th, welcomed everyone to the sixth meeting of the LSI-VC and initiated a *tour de table* of introductions.

Action Review

Matt Steventon (LSI-VC Secretariat) reviewed the outstanding actions from LSI-VC-5. He reported that of the 26 actions recorded, 22 have been/will be completed as of LSI-VC-6. Actions that will be closed as of LSI-VC-6 are mainly related to the trial assessment and production of CARD4L, as well as new SAR PFS.

Of the outstanding actions, LSI-VC-5-02 and LSI-VC-5-19 were carried forward as the following two actions, and LSI-VC-5-21 and LSI-VC-5-24 were considered closed (tracking at LSI-VC level not necessary).

LSI-VC-6-01	Ake Rosenqvist and Brian Killough to explore alternative options for ALOS-1 data processing.	December 2018
LSI-VC-6-02	Adam Lewis to follow up with Dave Hudson regarding identification of a Chinese LSI-VC contact.	December 2018 <i>Adam emailed Dave on 27 September; Steve Labahn will also meet with Dave in December.</i>

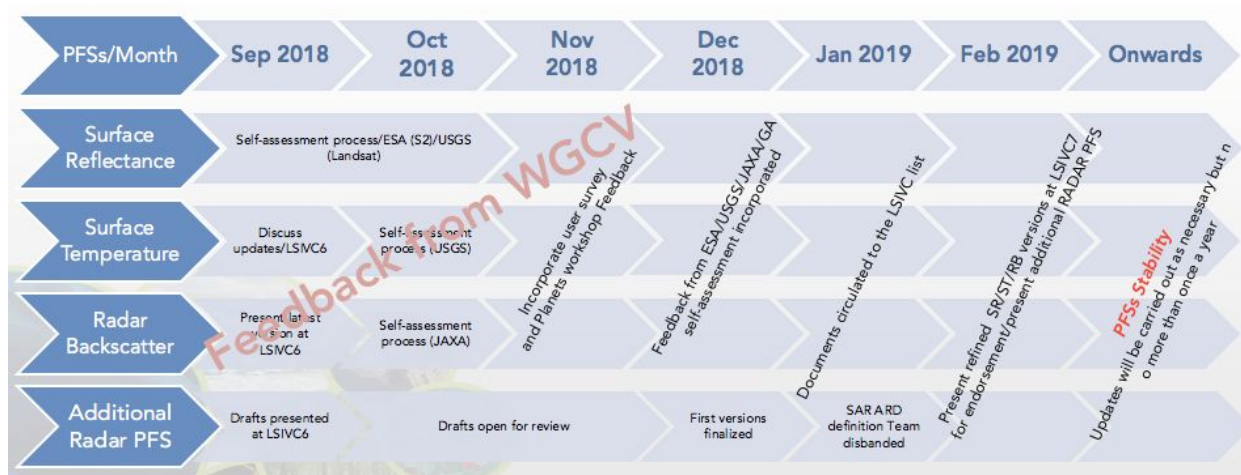
Session 2: CARD4L Product Family Specifications (PFS) & Product Assessments

Review: Overall Status and Outlook for the PFS

Andreia Siqueira (GA) reported the [current status of the CARD4L PFS](#). All three PFS are now at the trial assessment stage, and these trial assessments and productions are being undertaken initially by USGS and ESA (surface reflectance and land surface temperature) and JAXA (SAR backscatter). Details of these trial assessments will be presented during this meeting.

Andreia also noted the five additional SAR PFS currently under development: polarimetric covariance, polarimetric decomposition, interferometric line-of-sight, interferometric coherence, and geocoded SLC. Further details will be presented by Ake later during this meeting.

Andreia presented a proposed schedule for the continual update of the CARD4L PFS:



Jenn Lacey and Adam Lewis thanked Andreia. The overall timeline presented was agreed.

Steve Labahn (USGS) suggested that the CARD4L survey also be sent to commercial data providers. Matt noted that this wasn't done yet, as the focus for the survey initially is the user communities (especially those close to CEOS, e.g., GFOI, GEOGLAM).

Land Surface Temperature (LST) PFS Feedback

Darren Ghent (University of Leicester) presented detailed feedback from his assessment of the LST PFS from a Sentinel-3 perspective (see slides 7-10 [here](#)). Overall, he noted the need to balance usability and data quality. In particular, it was noted that:

- Metadata access should be via a single DOI reference – the literal interpretation of the requirement is confusing and implies the need for many separate references.
- Sentinel-3 LST is not map projected, so 1.7 of the PFS is not applicable. While this might be a reasonable threshold request for surface reflectance, it will not be applicable for LST.
- 1.16: overall data quality is absolutely critical. The PFS needs to be reviewed in this area.
- 2.6 on cloud shadow: this is nice to have, but not essential. A visible pixel in cloud shadow will still be accurate, just lower temperature.
- 2.7: viewing geometry information is critical due to angle dependent emissivity and also for comparing products.
- 2.8: this is useful information to help users understand sudden changes in gradients, but is not critical.
- 3.2: Although Sentinel-3 operational products do include a Brightness Temperature data product at Level 1 at TOA, there is no Brightness Temperature at BOA (SBT). Darren noted that the GlobTemperature workshop concluded that there would be no users for an SBT product.

A discussion followed, and Adam summarised the four major points of discussion and conclusions:

1. In cases where the LST community is ahead of the CARD4L PFS, we should update the PFS so that it is consistent.
2. The literal reading of the metadata requirement needs to be addressed to avoid overpopulation of DOI references. A single DOI reference should be sufficient to cover all requirements.

3. Regarding georeferenced data that is not map projected: the importance of map projections for usability needs to be discussed – not just for LST, but in general.
4. SBT is not needed as a CARD4L product – there is no clear user base. The LST PFS will be retained, with references to SBT removed in the next update cycle. It was agreed that top of atmosphere BT is a useful product for users, and is already supplied as an operational Level 1 product for Sentinel-3, however this is outside the scope of the LSI-VC CARD4L.

Discussion

Matt reviewed the CEOS Work Plan tasks related to the PFS. It was agreed that:

- FDA-07 is complete.
- VC-31 remains, but we need to add two specific sub-points for the pilot activities (e.g., as being discussed by the SDCG for GFOI) and also the continuation and expansion of the CARD4L survey, including with commercial partners.
- VC-33 is a perpetual action that will likely remain open. Steven Hosford (ESA/CNES, CEOS Executive Officer) will check with the SIT Chair team on their desired convention regarding the closing/continuation of CEOS Work Plan tasks.

LSI-VC-6-03	Steven Hosford to check with the SIT Chair Team on their desire for continual oversight of PFS maintenance, and on their desired convention regarding the closing/continuation of CEOS Work Plan tasks.	December 2018
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Reports from Agencies Piloting the CARD4L Production and Assessment Process

ESA Surface Reflectance

Rosario Iannone (ESA) presented his trial assessment of the surface reflectance Sentinel-2 product against the CARD4L SR PFS. He noted that the geometric correction of the Sentinel-2 product will be compliant in Q2 2019, once the Global Reference Image (GRI) is released. He also noted the issues with the DOI references, as pointed out by Darren earlier.

Steve Labahn (USGS) noted the ‘processing steps’ requirement detailed in the PFS. He thinks this is not feasible to include in full in the metadata, but a reference to a source that details these steps could be included. The requirements related to this in the PFS need to be reviewed.

LSI-VC-6-04	Andreia Siqueira to review all feedback on the CARD4L PFS and prepare update proposals for review. This should include a rethink of the metadata DOI requirements.	December 2018
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New Synthetic Aperture Radar PFS

Ake Rosenqvist (JAXA) reviewed the progress of the SAR Definition Team, which was established following LSI-VC-5 to prepare new SAR PFS. The team is led by ESA (Nuno Miranda), JAXA (Takeo Tadono, Ake Rosenqvist) and NASA JPL (Bruce Chapman). Ake shared details of the proposed PFS and

the lead authors:

Polarimetric

- Polarimetric decomposition – Marco Lavelle & Bruce Chapman (JPL), Takeo Tadono & Ake Rosenqvist (JAXA) and Zheng-Shu Zhou (CSIRO)
- Polarimetric covariance – Francois Charbonneau (NRCan)

Interferometric

- Geocoded SLC specification – Bruce Chapman (JPL)
- Geocoded interferograms (formerly LOS velocity) – Medhavy Thankappan (GA)
- InSAR coherence – Medhavy Thankappan (GA) and Nuno Miranda (ESA)

Ake asked whether (and how) the SAR specifications might be combined, to minimise the number of SAR PFS. It was noted that the polarimetric decomposition and covariance could be expansions of the backscatter PFS, and that the interferometric PFS could similarly be combined. In this case, we could conclude with just three SAR PFS: backscatter, polarimetric, and interferometric.

Discussion

Adam agreed that the backscatter PFS should remain as-is for now, noting that there is nothing preventing updates in the future.

It was agreed that ideally the data providers themselves would be responsible for producing these products. ‘On the fly’ production is a possibility, though it is yet to be seen how this works in practice.

Steven Hosford suggested that the WGCV SAR subgroup meeting being held 6-7 December could be a good opportunity to float these PFS with a broader community. Drafts of the PFS should be provided well in advance to allow for discussion during the meeting. This meeting is well timed with respect to the annual update cycle for the PFS.

Ake noted that Alex Held (CSIRO) would like CARD4L to serve as the basis for the standard NovaSAR products that will be generated by CSIRO/Australia.

LSI-VC-6-05	Ake Rosenqvist to connect with Paul Briand (CSA) regarding assessment of the SAR backscatter PFS at various Canadian test sites.	LSI-VC-7
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Cont. Reports from Agencies Piloting the CARD4L Production and Assessment Process

USGS

Steve presented the results of USGS’ self-assessment of Landsat surface reflectance products against the CARD4L PFS ([document #1](#), [document #2](#)). Steve presented some key general takeaways:

- Some requirements may need to be tweaked/revised, as some room for interpretation still remains when trying to conduct the self-assessments.
- USGS takes the approach that the ‘static’ mission/sensor information does not need to be provided in every metadata file (it doesn’t change, and it only bloats the metadata file itself). With Collection 2, USGS plans to use a single DOI (Digital Object Identifier) to link to our online documentation that

branches to additional information from there. If that approach is sufficient to meet the intended requirements, some of the DOI-related requirements should be adjusted to explicitly allow this.

- Should we have a common self-assessment template, which better supports the traceability and verification needs of WGCV?

While no thought has been put into the minimum documentation required for self-assessments at this stage, it is expected that this will be decided in cooperation with WGCV (their proposal regarding the assessment process will be heard later in the meeting). It was agreed that no matter the process and specific requirements, the process will be supportive, with an ample amount of feedback to data providers.

Geoscience Australia

Medhavy Thankappan (GA) [presented on a number of GA’s related activities](#), including Digital Earth Australia, Terria-Cube, and GA/DEA’s approach to the validation of ARD products – focused on quantifying uncertainty. Medhavy also noted the operational processing of Sentinel-1 SAR ARD in Australia through a DEA InSAR project, which will be implemented for the Australian state of Victoria and validated for scaling up to a national product.

Medhavy reported that GA will be undertaking pilot CARD4L assessments for a number of their ARD products soon, once a restructuring of their data collection is complete. Medhavy also noted an ARD session planned for the ESA Living Planet Symposium, 13-17 May 2019 in Milan. Fifteen abstracts are needed for a viable session. A similar session is planned for IGARSS 2019 a few months later.

<p>LSI-VC-6-06</p>	<p>Andreia to coordinate the ESA Living Planet Symposium and IGARSS sessions on ARD (including securing enough presentations/papers to make the sessions viable).</p> <p>It is important to not only present CARD4L in general, but also specific implementations of the CARD4L specifications, to show the practical side.</p>	<p>IGARSS Abstract Due October 5</p> <p>Living Planet Symposium Abstract Due November 11</p>
<p>LSI-VC-6-07</p>	<p>Medhavy to follow up Brian Killough regarding representation in the ESA Living Planet Symposium ARD session (Brian will already be there for Open Data Cube).</p>	<p>November 11</p> <p><i>Medhavy is coordinating a session on ARD and has been in contact with Brian.</i></p>

WGCV Report on CARD4L Product Assessment Peer Reviews

Kurt Thome (NASA, WGCV Chair) presented [WGCV’s proposed approach to CARD4L product assessment peer reviews](#), which was prepared in response to LSI-VC’s request for support.

Discussion

A discussion followed:

- Matt reported that the LSI-VC Secretariat might have capacity available to play the general liaison role. Specific subject matter experts as POCs for each of the PFS are also needed. No further nominations were heard.
- Jeff Masek (NASA) suggested that a template be prepared for CARD4L self-assessments. A consistent format might be helpful. Kurt responded that a template is not as important as the content, due to the expected back-and-forth working dynamic and iterative process.
- Matt suggested that some of the initial assessments we've seen today could be used for trial engagements with WGCV, through which we can gain an understanding of the general requirements, which could help shape a template.
- It was agreed: at LSI-VC-7, we plan to prototype the self-assessment template, which will define what needs to be provided to WGCV for each of the PFS fields. In the meantime, agencies will make their self-assessments more robust – up to the point where they are ready to engage WGCV. This will inform the discussion on a template at LSI-VC-7, and will progress these assessments toward the WGCV review stage by LSI-VC-7 (February 2019) after which they can rapidly be submitted to WGCV.

LSI-VC-6-08	Andreia to work with JAXA (TBD), USGS, and ESA to prepare CARD4L assessment packages (up to the point of engagement with WGCV) by LSI-VC-7, so that they can be used to inform the discussion at LSI-VC-7 around a self-assessment template and can be submitted to WGCV as a trial shortly after LSI-VC-7.	LSI-VC-7
LSI-VC-6-09	All to consider nominating as PFS subject matter expert POCs for the WGCV self-assessment peer review process.	December 2018

Session 3: CEOS ARD Promotion

Discussion

Adam Lewis (GA) led the discussion which sought to answer: how could we better promote CARD4L to potential users, data producers, and data hosts; and how could the discovery and access of CARD4L be further improved?

- It was agreed that a common message to non-CEOS communities would be helpful.
- Steven Hosford recalled a finding from the Planet ARD workshop: that the commercial community has an interest in a 'confidence stamp' from the cal/val side of the space agencies. They would like to benefit from the vast experience of space agencies. The recent WGCV meeting indicated that there are many resources (e.g., ACIX, RadCalNet) which could be pushed in the direction of that community to help bootstrap their efforts. Steven suggested that in general, CEOS should work with these communities more to learn how space agencies can support their goals.
- It was agreed that an information package would be useful for approaching external communities. These materials would ideally communicate all aspects of CEOS' work.
- Regarding the engagement of outsiders in CARD4L, Steve Labahn (USGS) suggests that CEOS agencies not currently engaged in the LSI-VC are the ideal first targets, followed by non-CEOS

agencies, and then the commercial/private sector. Adam suggested that the commercial/private sector might be higher up the list given their proactivity on ARD.

In 2017-18, LSI-VC has promoted CARD4L through a number of forums, including by publishing in the proceedings of IGARSS and adding references to CARD4L in journal articles on the calibration and validation of Landsat and Sentinel data. LSI-VC has also engaged with industry in conferences (e.g., Pecora 2017), industry workshops (e.g., UK Catapult workshop, September 2017; and the Planet ARD workshop, August 2018). The following approach was agreed for CEOS ARD promotion going forward:

1. Develop an information pack capturing the key value of CARD4L, using the information notes from Matt as a basis.
2. Communicate actively with the commercial sector using the information pack and networks including UK Catapult, DIAS providers, and EARSC.
3. Increase communication with remote sensing agencies, scientists, and commercial providers through the ESA Living Planet Symposium, IGARSS, the ESA Ground Segment Coordination Body (GSCB), and other forums such as the World Geospatial Forum.
4. Act on the suggestions from the CARD4L survey:

How could the promotion and discovery of CARD4L be improved?

- **Community platform** to regularly post information
- **Promotion via the individual agencies** providing the data.
- **Promoting information products based on ARD for decision making processes**, showing the cost efficiency of this type of data.
- **Capacity development and institutionalization**.
- **Routine operational production of ARD products by suppliers**, which signals a clear intention to sustain such production.
- Demonstrate the value proposition of ARD products through **targeted cost/benefit studies** that encourage user adoption.
- **Repository and alert system**. A directory of data (preferably on http servers with STAC) would be good.
- **ARD test sites** where ARD is consistently produced so that demonstration can be made and resources sought for upscaling to national-scale
- Rapidly **increase the diversity of the standards and partner with non-CEOS groups** to further this diversification.
- **Researchgate**.
- Promotion at appropriate **remote sensing forums** (e.g., IGARSS, AGU, etc.).
- **Providing APIs** for access through scripting languages.
- Be brokered by the **GEOSS platform**.

LSI-VC-6 / SDCG-14 / GEOGLAM Joint Meetings
5

5. Promote datasets via the CEOS ARD website (i.e., the CARD4L stocktake) and also through the relevant WGISS systems (e.g., Connected Data Assets (CDA)).

LSI-VC-6-10	All to provide feedback on Matt’s CARD4L information notes, so they can be finalised for the CARD4L communication package.	28 September
LSI-VC-6-11	Zoltan Szantoi and Michael Berger to follow up the EARSC and DIAS provider promotion angle once we have our CARD4L communication package agreed.	December 2018 <i>Michael investigating possibility of publishing an informational note on CARD4L in a future issue of the EARSC Newsletter.</i>

Session 4: GEO-LEO

Review Application Case Study using CARD4L from Multiple GEO and LEO Satellites

Kevin Gallo (NOAA) [presented the latest on this initiative](#), which has been progressed in response to CEOS SIT action SIT-33-14.

A discussion followed, led by Steve Labahn (USGS):

- There are a host of issues related to interoperability that remain to be addressed.
- The plan is to expand this pilot from one day to twenty days. Volunteers are needed for this expansion, as well as for the expansion to other areas and datasets.
- There were no nominations from those present to lead any of the expansion activities. Steve Labahn suggested waiting until we have feedback on the work done to date before committing to any expansion.
- It was agreed that the next step is for Kevin to send these results to CSIRO (Alex Held) for review and guidance on the next steps. CSIRO was involved in the initiation of the topic several years ago (the Non-Meteorological Applications for geostationary satellites (NMA) CEOS Chair initiative).

LSI-VC-6-12	Kevin Gallo to share the GEO-LEO work done to date with Alex Held, and to seek his opinion on the way forward with respect to the expansion to a twenty day timeframe, other areas, and an increased number of datasets.	COMPLETE Additional material will be provided to Alex Held so that he can explore additional resources and contributions from the Australian side.
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Wrap up

Adam Lewis (GA) closed the day with a review of the joint meeting agenda for the following day. He noted discussions in the SDCG meeting around a CARD4L pilot in Vietnam for forest monitoring. This could be a topic of discussion, as well as the ongoing discussions around possibly merging the three groups – noting the SIT Chair’s priority of achieving increased consistency and clarity on the life cycles of CEOS ad hoc teams.

Friday September 7th

Session 5: Moderate Resolution Interoperability (MRI)

Susanne Mecklenburg (ESA) opened the discussion session, noting that we need to discuss our MRI CEOS Work Plan tasks and achieve clarity on what we are doing currently and where we plan to get to. A discussion followed:

- Steven Hosford (ESA/CNES, CEO) [reviewed the two actions \(VC-30 and VC-36\) and presented some thoughts on what interoperability means in this context](#). Steven also summarised the current related work: parallel CARD4L assessments for Landsat and Sentinel-2, the ESA-USGS bilateral on Landsat/Sentinel-2 ARD products, NASA HLS, and Sen2Like.
- Steve Labahn (USGS) noted that the LSI-VC has had no MRI task lead since last year, and only bilateral activities are ongoing. Jenn recalled that the actions in the CEOS Work Plan are much broader than the bilateral activities currently taking place.
- Mark Dowell (COM) asked if the WGCV LPV subgroup have been involved at all. Jenn noted that Kurt Thome has been engaged. Mark suggested involving contacts from LPV directly. Jeff Masek (NASA) suggested floating this topic with WGCV LPV before going too far, as they went through a similar discussion about a year ago.
- It was agreed that there is a broad spectrum of definitions of ‘interoperable’. An agreed and documented definition is needed. There are also two approaches to using different datasets together: harmonising the different sources into a single dataset (making pixels look the same) or combining the end results/information at the end of the analysis process.
- To be interoperable, extra steps are needed on top of CARD4L. CARD4L is necessary for interoperability, but it is not sufficient.
- It was agreed that an action to formalise what we mean by ‘interoperable’ is necessary before further work can be done in this direction.

LSI-VC-6-13	Matt to close CEOS Work Plan task VC-36 and create a new task on preparing a discussion paper on the definition of ‘interoperability’. The due date for VC-30 will also be changed to Q4 2019.	December 2018
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Session 6: Other Matters & Closing

- Steve Labahn is replacing Jenn Lacey as the USGS LSI-VC Lead. Everyone thanked Jenn for her effort and dedication to the LSI-VC over the past 3 years.
- Stephen Ward noted the Australian SARCube meeting in Hanoi, around the week of LSI-VC-7. It was agreed that it would be better if LSI-VC-7 were held earlier in the week followed by the SARCube meeting. The dates for LSI-VC-7 have been chosen in the interest of travel efficiency for those participating in the 2019 Open Data Cube Conference in Canberra, Australia, the week prior.
- It was agreed that LSI-VC-8 should be held just before SIT Technical Workshop 2019 in the same location. This will likely be somewhere on the US East Coast or Hawaii. Susanne noted that the first week of September is not convenient for most European participants, as this is generally the first week back from the summer break. Jenn suggested that if SIT Technical Workshop were three days

(Wednesday – Friday), LSI-VC-8 and the joint meetings could be held Sunday to Tuesday.

LSI-VC-6-14	Present and discuss potential LSI-VC-7 topics at the October LSI-VC team teleconference.	October Teleconference
LSI-VC-6-15	Jenn to suggest to Kerry Sawyer (NOAA, SIT Chair Team) that SIT Technical Workshop 2019 be targeted for the end of the week in which it occurs, so that LSI-VC-8 and the joint meetings could be held Sunday to Tuesday prior.	SIT Technical Workshop 2018

Matt reviewed the actions. A number of changes were made live. The final action record can be found on the last page of these minutes.

The LSI-VC Leads thanked everyone for attending and closed the meeting.

APPENDIX A

Attendees

Organisation	Name
CSA	Paul Briand
EC/JRC	Zoltan Szantoi
ESA	Michael Berger
ESA	Rosario Iannone
ESA	Susanne Mecklenburg
ESA/CNES	Steven Hosford
ESA	Stephen Ward
ESA	Matt Steventon
GA	Adam Lewis
GA	Andreia Siqueira
GA	Medhavy Thankappan
JAXA	Takeo Tadono
JAXA	Ake Rosenqvist
NASA	Dave Jarrett
NASA	Jeff Masek
NASA/SEO	Brian Killough
NASA/SEO	Shaun Deacon
NASA/SEO	Syed Rizvi
UK Catapult	Dan Wicks
University of Leicester	Darren Ghent
USGS	Jenn Lacey
USGS	Steve Labahn

APPENDIX B

Actions Record

LSI-VC-6-01	Ake Rosenqvist and Brian Killough to explore alternative options for ALOS-1 data processing.	December 2018
LSI-VC-6-02	Adam Lewis to follow up with Dave Hudson regarding identification of a Chinese LSI-VC contact.	December 2018 <i>Adam emailed Dave on 27 September; Steve Labahn will also meet with Dave in December.</i>
LSI-VC-6-03	Steven Hosford to check with the SIT Chair Team on their desire for continual oversight of PFS maintenance, and on their desired convention regarding the closing/continuation of CEOS Work Plan tasks.	December 2018
LSI-VC-6-04	Andreia Siqueira to review all feedback on the CARD4L PFS and prepare update proposals for review. This should include a rethink of the metadata DOI requirements.	December 2018
LSI-VC-6-05	Ake Rosenqvist to connect with Paul Briand (CSA) regarding assessment of the SAR backscatter PFS at various Canadian test sites.	LSI-VC-7
LSI-VC-6-06	Andreia to coordinate the ESA Living Planet Symposium and IGARSS sessions on ARD (including securing enough presentations/papers to make the sessions viable). It is important to not only present CARD4L in general, but also specific implementations of the CARD4L specifications, to show the practical side.	IGARSS Abstract Due October 5 Living Planet Symposium Abstract Due November 11
LSI-VC-6-07	Medhavy to follow up Brian Killough regarding representation in the ESA Living Planet Symposium ARD session (Brian will already be there for Open Data Cube).	November 11 <i>Medhavy is coordinating a session on ARD and has been in contact with Brian.</i>
LSI-VC-6-08	Andreia to work with JAXA (TBD), USGS, and ESA to prepare CARD4L assessment packages (up to the point of engagement with WGCV) by LSI-VC-7, so that they can be used to inform the discussion at LSI-VC-7 around a	LSI-VC-7

	self-assessment template and can be submitted to WGCV as a trial shortly after LSI-VC-7.	
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LSI-VC-6-11	Zoltan Szantoi and Michael Berger to follow up the EARSC and DIAS provider promotion angle once we have our CARD4L communication package agreed.	December 2018 <i>Michael investigating possibility of publishing an informational note on CARD4L in a future issue of the EARSC Newsletter.</i>
LSI-VC-6-12	Kevin Gallo to share the GEO-LEO work done to date with Alex Held, and to seek his opinion on the way forward with respect to the expansion to a twenty day timeframe, other areas, and an increased number of datasets.	COMPLETE Additional material will be provided to Alex Held so that he can explore additional resources and contributions from the Australian side.
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