

VLab progress report and 5-year training strategy for endorsement

This document reports on activities within the WMO-CGMS Virtual Laboratory for Education and Training in Satellite Meteorology (VLab) along with future plans. Since CGMS-46, VLab members have offered a variety of training opportunities, with highlight to training efforts addressing the new generation of satellites, as this proved to be the major training need identified by VLab members in recent years. Furthermore, the new Five-year Strategy document for VLab activities 2020-2024 was proposed by the VLab Management Group (VLMG), and endorsed by IPET-SUP. CGMS members are invited to take note of the Strategy, provide comments and endorsement (Action i).

VLMG continued to coordinate its activities and support for training events via regular online meetings. Additionally, the Group met face to face in July 2018 for the ninth meeting of the VLab management group - VLMG-9. The meeting was hosted by the Cooperative Institute for Research in the Atmosphere (CIRA), on behalf of NOAA and WMO.

The VLab Trust Fund continued to receive a steady level of contributions from NOAA/NWS, EUMETSAT, and KMA. However, a larger number of contributing CGMS agencies is required to improve its resilience. Regular financial contributions from CGMS Members are critical to maintain technical support to the VLab (Action ii).

Since October 2017, Dr Mark Higgins (EUMETSAT Training Manager) has been a VLab co-chair on behalf of CGMS satellite operators. This co-chairmanship was established for a period of up to 3 years. Nominations need to be considered by CGMS satellite operators in order to ensure the continuation of this partnership after October 2020 (Action iii).

Action/Recommendation proposed:

- i) CGMS members to take note of the new Five-year Strategy document proposed by VLab, provide comments and endorsement.
- ii) CGMS members to provide contributions into the WMO VLab Trust Fund to ensure the continuation of technical support to the VLab. CGMS members considering to provide additional support should contact the WMO Space Programme Secretariat (wbalogh@wmo.int).
- iii) CGMS members active in VLab to nominate the next Co-Chair to represent CGMS satellite operators in the VLab (starting October 2020). Nominations to be presented to VLab by December 2019.

VLab progress report and 5-year training strategy for endorsement

Annex: Five-year Strategy for the WMO-CGMS Virtual Laboratory for Education and Training in Satellite Meteorology - 2020-2024.

1 INTRODUCTION

This document reports on the activities and plans of the WMO-CGMS Virtual Laboratory (VLab). Since CGMS-46 the VLab has:

- Updated and published the Guidelines on Satellite Skills and Knowledge for Operational Meteorologists. The updated document is available at <https://www.wmo-sat.info/vlab/satellite-skills/>;
- Responded to training needs and user requirements by offering training on the new generation of satellites;
- Collaborated with the Global Campus initiative, ensuring information about

The VLab Management Group (VLMG) has met four times in virtual meetings, and had its 9th face-to-face meeting in Fort Collins, USA, in July 2018. Also during VLMG-9, Kathy-Ann Caesar (CoE Barbados), whose long-term contribution to VLab is highly commended by all partners, communicated the need to leave her duties in the co-chairmanship of VLab. This resulted in the nomination of Marinés Campos (CoE Argentina), who was unanimously voted (VLMG meeting September 2018) to represent the VLab CoEs in the VLab co-chairmanship. Marinés Campos has since been working together with Mark Higgins (EUMETSAT), who represents the satellite operators in the VLab network.

Further details regarding the most recent activities of VLab and a short review of major training events and plans is given below.

1 MAJOR ACTIVITIES OF THE VIRTUAL LABORATORY SINCE CGMS-46

Based on the various regional training activities that were delivered by the VLab Centres of Excellence and satellite operators, the following are the major impact of VLab activities, as described by VLab members:

1.1 GOES region training

- 26 new training resources were developed by Meted and CIRA;
- The VLab Americas and Caribbean Focus Group sessions had boosted participation and interaction among meteorologists and forecasters in WMO RA III and IV (bilingual sessions). These sessions have been providing informal learning while also promoting the new data types and products from GOES and JPSS satellites;
- GOES-16 and GeonetCast Workshops were carried out in various countries;

- Collaborations with CoEs Costa Rica and Brazil supported linkages in data access associated with the new satellites and in support of GEO via AmeriGEOSS;
- CoE Brazil developed numerous resources on Goes-16 (videos, slides, and blogs) to support the various sectors using the imagery;
- CoE Argentina collaborated with COMET to produce “GOES-16 GLM Case Exercise: Buenos Aires Tornado and Hail Event”, in the context of Relampago Project. Four short online courses were delivered in WMO RA III and IV, based on Conceptual Models developed in CM4SH project (about 80 participants each) using updated GOES-16 imagery. Current examples of 3 CM were presented at RFG for America and the Caribbean.

1.2 Himawari region training

- JMA launched the Himawari Request service in January 2018 to provide National Meteorological and Hydrological Services (NMHSs) in WMO RA II and RA V with Himawari-8/9 on-demand TA-observation earth images taken every 2.5 minutes over an area of approximately 1,000 x 1,000 km within the Himawari observation domain;
- VLab CoE Australia continued organising monthly RFG meetings during 2018, with an average of at least 28 attendees, principally from WMO RAV, RAI, RAIIV. This marks the 5th year of organising monthly RFG meetings in the Region. Ongoing strong attendance by JMA, KMA, BMKG Indonesia, which frequently provide presenters for the sessions, and also increased attendance by the USA. Recorded sessions are available at <http://www.virtuallab.bom.gov.au/archive/regional-focus-group-recordings/>;
- VLab CoE Republic of Korea created a central library/repository for recorded RFG sessions and other online training events. Available at http://nmsc.kma.go.kr/html/homepage/en/ver2/component/categoryBoard/searchCategory.do?board_c_cd=001;
- AOMSUC-9 (6-11 October 2018, hosted by BMKG, Indonesia). A pre-conference Workshop was organised and had various contributors. VLab members offered 3 training sessions: JMA: “Practical training about RGB technique by using SATAID”, CoE Australia: “*Satellite Training for Trainer on RGB techniques for Meteorological Applications*”, and CoE Republic of Korea: “*Introduction of User Customized Imagery Processing Tool for Geo-KOMPSAT-2A Geostationary Satellite Data*”.

1.3 FY-4 region training

- CoEs Beijing and Nanjing China have produced and shared abundant resources including disaster risk reduction and emergency management. They offered online and classroom International courses. Plans for 2019 include application of FY-4 in disaster risk reduction for WMO RA II and V;

1.4 Meteosat region training

- CoE Oman with support from WMO / Eumetsat hosted the course “ Satellite Application Course on Tropical Cyclone” at Muscat with 18 participants from Region 2.

- CoE South Africa is working on a new resource: “Asmet Comet module” to come out soon. The CoE offered an online workshop on EUMETSAT MSG satellite for 48 trainees from WMO RAI (Africa), followed by a face to face course for 16 participants from different African countries. An EUMETSAT Climate workshop event week took place with 20 participants. The online Weather Briefings for RAI were followed by 25 forecasters.
- CoENiger, with very limited resources has carried out 7 classroom courses for 18 participants RAI (french). An EAMAC and Eumetsat blended Satellite Application course (ESAC) is planned for a near future.
- CoE Morocco offers online and classroom training on the “Application of Satellite Imagery” in Meteorology for RAI (french)
- In conjunction with WMO teams EUMETSAT has supported training on dust, land and agricultural applications in the region.

2 COLLABORATION

2.1 Collaboration between Centres of Excellence and Satellite Operators

The launching of a new generation of satellites is setting a growing demand on training needs for members of all WMO Regional Associations. Close collaboration between satellite operators and VLab CoEs is driving the response to address these training needs as they are identified.

A good example of the effectiveness of these collaborations include the **Himawari Request service**, which started in 2018 as JMA’s response to a request made by VLab CoE Australia. A recorded presentation on the “High Resolution Himawari-8 Target Area Observation case study of the recent Queensland fires” is available at <http://www.virtuallab.bom.gov.au/archive/regional-focus-group-recordings/>

The RFG of Americas and Caribbean, organised by NOAA/CIRA is another successful example. Collaborations with CoE Argentina allowed for introduction of the RFG sessions to participants in three of their courses as well as presentations from the courses to the RFG community. Collaborations with CoEs Costa Rica and Brazil supported linkages in data access associated with the new satellites and in support of GEO via AmeriGEOSS. This also supports our sponsoring agent (CGMS) and the WMO Satellite Data Requirements.

2.2 Global Campus Initiative

VLab maintains continuous collaboration with the Global Campus Initiative. In 2018, VLab contributed to the development of the WMOLearn section of WMO E-Library. The topic “Satellite Skills and Knowledge” already contains training resources developed by VLab Members, which were added during the pilot testing phase. Since VLMG-9 meeting, VLab Members agreed to submit new training resources to the Library, contributing to the growth of shareable training resources.

VLab also takes part in the technical task team for the development and maintenance of the WMOLearn Events Calendar.

2.3 Engagement with other Training Providers

Collaboration with other training providers takes place at different levels. This includes the advertising of non-VLab training events in the online Training Calendar, indication of subject matter experts for training collaborations, exchanges of technical expertise between training support officers and training project managers.

Training providers that have been most active in recent collaborations with VLab are NASA/ARSET, COMET, and the GEOS Working Group on Capacity Building and Data Democracy (WGCapD). Representatives of these programmes have been participating in VLMG meetings and engaging in discussions.

In addition, VLab has continuously collaborated with COSPAR on requests for the organisation of capacity building events. In 2018, a new memorandum of understanding was signed by COSPAR and WMO, to ensure the continuation of this collaboration, with possible extension of support in the domain of space weather.

3 VLMG-9

The ninth session of the Virtual Laboratory Management Group (VLMG-9) meeting was hosted by the Cooperative Institute for Research in the Atmosphere (CIRA) in Fort Collins, United States of America. The meeting was held at the premises of Colorado State University (CSU), from 16-20 July 2018.

VLab CoEs, Satellite Operators and Agencies, and Partner Programmes presented their latest achievements and planned activities which, together with the discussions that took place, generated actions and recommendations that were captured in the VLMG-9 report (available at <http://www.wmo-sat.info/vlab/meeting-reports/>).

The key outcomes from VLMG-9 were:

- Revisions to the new strategy that take into account the move to service driven operations, such as impact based decision support services in the NMHSs and with the new satellite and emerging and technologies on the data provider side.
- Strengthening the link between the regional data user requirements groups and the training centres to ensure that the training needs associated with new data sources and products are captured and addressed.

And of course there was discussion on sharing on how to continue to improve the quality and reach of the training, how to strengthen contribution to Global Campus and how to address outstanding training needs.

4 FIVE YEARS STRATEGY

The VLab Five-years Strategy document (2015-2019) was reviewed during the VLMG-9 meeting and a new strategy was drafted by a working group for the next period: 2020-2024. This document was circulated within the VLab Management Group (VLMG), receiving comments and suggestions that were considered in the final version.

The new document describing the VLab strategy for the period 2020-2024 was recently finalised and can be seen in **Appendix A** of this report.

The focus of the new strategy continues to be on supporting training on the use of satellite data and products as well as exploring capabilities to assist in related training areas.

VLab will strive to deliver training in line with WMO, CGMS, and GFCS strategic priorities, as well as considering the GEO societal benefit areas.

Collaboration with partner programmes will be continued and where possible, extended. VLab will also monitor the development of the WMO Global Campus initiative and explore ways to contribute and benefit from it.

Action proposed: CGMS members to take note of the new Five-year Strategy document proposed by VLab, provide comments and endorsement.

5 FUTURE ACTIVITIES PLANNED

Over the next period the VLMG plans to engage with the following activities:

- Support the 2019 WMO Course for Trainers on Blended Learning, and the CALMet/Eumetcal Conference 2019.
- Adopt the "[Compendium of Topics to Support Management Development in National Meteorological and Hydrological Services](#)" to assist in working in harmony with other initiatives across the community.
- Seek to improve the speed of transfer of new technology, and knowledge and skills into competency based training for operational personnel, by increasing collaboration among CoEs, translating training resources, and seeking funding.
- Develop satellite training support within courses and workshops developed by partner training programmes working in priority areas such as Climate Services, and IDSS.
- Foster training for users of Space weather information by collaboration among CoEs and Space Weather Programme.
- Promote regional training for technicians and provide opportunities for special sessions, including participation in meetings and conferences.
- Support the engagement of forecasters in Regional Focus Group discussions.
- Maintain an RGB forum of experts, trainers and forecasters.
- Look into possibilities for funding the continuation of successful projects, such as the Conceptual Models for the Southern Hemisphere.
- Encourage more young professionals into the field of satellite science.

6 VLAB TRUST FUND

Timely response by VLab to training needs expressed by CGMS and WMO Members has been made possible by the financial support provided by CGMS members to the VLab Trust Fund. This support has been fundamental for sustaining the capacity development activities of VLab.

The VLab Trust Fund has continued to receive a stable level of contributions over the inter-sessional period, i.e. a total of 80K USD from NOAA/NWS, EUMETSAT, and KMA. These funds are used to provide funding and travel support for the position of the VLab Technical Support Officer (TSO), who is coordinating and overseeing the VLab activities.

The previous contract between WMO and Colorado State University/CIRA for hosting the position of the VLab TSO expired on 31 August 2018. As it was not possible to extend this contract, WMO and VLab co-sponsors identified the University of Maryland as the new

hosting institution for the VLab TSO. In August 2018, a letter of agreement was signed between WMO and the University of Maryland, covering the period 1 September 2018 to 31 August 2021.

While the current financial status of the VLab Trust Fund is stable, a larger number of contributing CGMS agencies is required to improve its resilience and to respond to increasing requests for training needs.

Regular financial contributions from CGMS Members are critical to maintain technical support to the expanding range of VLab activities.

Additional contributions would allow VLab to fund further urgent activities, such as the preparation of VLab capacity development, training and promotional materials and updates required to the VLab website, which needs to be moved to a new development platform.

Action proposed: CGMS members to provide contributions into the WMO VLab Trust Fund to ensure the continuation of technical support to the VLab and to fund urgent VLab activities. CGMS members considering to provide additional support should contact the WMO Space Programme Secretariat (wbalogh@wmo.int).

7 PLANNING OF VLAB CO-CHAIRMANSHIP

It is recalled that the VLab Management Group has two co-chairs, one is nominated by CGMS among representatives of sponsoring satellite operators, the other is nominated by WMO through the CBS Expert Team on Satellite Utilization and Products (IPET-SUP) among the representatives of VLab Training Centres of Excellence.

In June 2017, CGMS endorsed the nomination of Dr Mark Higgins (EUMETSAT Training Manager), as new VLab co-chair on behalf of CGMS satellite operators, for a period of up to 3 years.

It is now time to nominate a candidate to serve as VLab co-chair, representing CGMS satellite operators in the VLab management group, starting from October 2020.

Action proposed: CGMS members active in VLab to nominate the next Co-Chair to represent CGMS satellite operators in the VLab (starting from October 2020). Nominations to be presented to VLab by December 2019.

8 ACTIONS FOR CONSIDERATION BY CGMS

- CGMS members to take note of the new Five-year Strategy document proposed by VLab, provide comments and endorsement.
- CGMS members to provide regular annual contributions into the WMO VLab Trust Fund to ensure the continuation of technical support to the VLab.
- CGMS members active in VLab to nominate the next Co-Chair to represent CGMS satellite operators in the VLab (starting October 2020). Nominations to be presented to VLab by December 2019.

9 CONCLUSION

VLab continues to make great strides in the forging of training in satellite meteorology. With the onset of a new generation of satellites, VLab is addressing new challenges as they are presented, while still working towards the achievement of the goals established in its strategy for 2015-2019.

CGMS and its membership has been a strong sponsor VLab. It is important that this support continues so that initiatives for the preparation of users of the new generation of satellites can continue.

APPENDIX A

**FIVE-YEAR STRATEGY FOR THE WMO-CGMS VIRTUAL LABORATORY
FOR EDUCATION AND TRAINING IN SATELLITE METEOROLOGY
2020-2024**

10 SCOPE AND DEFINITION

The WMO-CGMS Virtual Laboratory for Education and Training in Satellite Meteorology (VLab) is an activity of the WMO Space Programme, based on a global network of specialized training centres, named Centres of Excellence (CoEs), that are supported by one or more CGMS satellite operators (see <http://vlab.wmo.int>).

The CoEs are established in the various WMO Regions to meet user needs for increased skills and knowledge in using satellite data within their region. They are often co-located with WMO Regional Training Centres (RTCs).

VLab activities are implemented by CoEs in cooperation with CGMS satellite operators.

11 MISSION OF VLAB

To improve weather, water, climate and related environmental services by enabling WMO Members to utilize satellite data.

12 OBJECTIVES OF VLAB

1. Achieve better exploitation of data from the space-based component of the WMO Integrated Global Observing System (WIGOS) for services that are increasingly reliant on satellite data;
2. Share globally knowledge, experience, methods, and tools related to access and usage of satellite data, especially in support of WMO Members that have limited resources.

13 STRATEGIC DRIVERS AND CHALLENGES OUTSIDE VLAB THAT WE SEEK TO SUPPORT

The strategic drivers of VLab are:

- Need to address societal challenges and global development agendas such as the 2030 Agenda for Sustainable Development, the Sendai Framework for Disaster Risk Reduction and the Paris Climate Agreement;
- Responding to new and emerging service demands for weather, water and climate, such as in support of marine, land, impact-based decision support services (IDSS) and the applications in support of the Global Framework for Climate Services (GFCS);
- Improved scientific understanding and technological advances that can lead to enhanced services, and evolution in the provision of meteorological services;

- Increased diversity of services offered by WMO Member in line with the WMO Earth System approach and efforts to enhance the quality of these services;
- Improved availability of Earth Observing data to support operational service delivery in line with the expected growth of the space-based observing system component as outlined in the Vision for WIGOS in 2040;
- Increased range of resources available for user training, and the challenges users and trainers have in efficiently finding and repurposing these resources;
- Introductions of new satellites, with new data types and products, new data manipulation and handling technology, as well as new dissemination systems, including cloud hosted data sources;
- Continued need to support simple and “backup” data delivery for emergency preparedness and for WMO Members that have limited resources;
- Achieving the competence and quality control requirements, and professionalism within WMO Services, in particular noting the human resource management challenges facing many National Meteorological and Hydrological Services (NMHSs);
- Growth in social/crowd created projects and increased volume of co-creation content;
- Ideas for NMHS service improvement generated within the WMO bodies.

14 STATUS AND ACHIEVEMENTS OF VLAB FOR THE PERIOD 2015-2019

In its 20 years of existence, VLab has demonstrated its capability to deliver global scale events on training and education in satellite meteorology. In addition, all of the VLab activities support the objectives of the WMO Global Campus.

In the period 2015 to 2018, VLab conducted the following activities, implementing the VLab Strategy 2015-2019:

- 1) Training activities
 - a. Hosted more than 120 Regional Focus Group discussions (RFGs) and 350 training courses, reaching 12,500 participants.
 - b. Supported transition to new satellite systems in all WMO regions.
 - c. Provided training materials created especially for identified gaps in content and data access, which included the Conceptual Models for the Southern Hemisphere (CM4SH), ASMET modules, GEONETCast Americas broadcast, and ways to display the data through SIGMACast, McIDAS-V, and python scripting.
- 2) Collaboration and sharing
 - a. Further developed the WMO SP-12 “Guidelines on Satellite Skills and Knowledge for Operational Meteorologists”.

- b. Participated and contributed to WMO Global Campus activities and collaboration mechanisms.
- 3) Management and oversight
- a. Held two face-to-face meetings of the VLab Management Group (VLMG) and 15 online meetings to plan and oversee VLab activities.
 - b. Maintained good communication between training centres and satellite data providers around the globe, bringing research into training and operations.
 - c. Accelerated new product development and implementation in operations, such as the RGBs and the development of quick guides.

15 STRATEGY FOR THE PERIOD 2020 TO 2024

VLab will strive to meet the increasing demands of WMO Members in line with:

- [WMO Strategic Priorities](#);
- WMO Education and Training Programme;
- CGMS High Level Priority Plan ([HLPP 2018 - 2022](#));
- [GFCS Priority Areas](#);
- [Group on Earth Observations \(GEO\) Societal Benefit Areas](#).

VLab will work towards its objectives by:

- Developing and implementing training interventions, relating the intervention to the skills, competencies and qualification frameworks where they exist;
- Encouraging evaluation of the impact of the training for the use of satellite data and products and its long-term benefits;
- Encouraging the availability of more training material in WMO official languages other than English;
- Encouraging exchange of information between researchers and operational users in developing new products from current satellite data that can lead to improved meteorological services;
- Promoting the benefits of using new satellite-based products and providing technical support, where possible, to make them available to users;
- Promoting good practice in training within the WMO Global Campus network and growing relationships with other training centres in allied areas such as oceans, agriculture, and forestry to explore opportunities to collaborate and share tools and knowledge for the delivery of the VLab objectives; encouraging those programmes to use the WMO competency frameworks;
- Engaging directly with and reporting to its co-sponsors, which currently include the WMO Inter-Programme Expert Team on Satellite Utilization and Products (IPET-SUP) and the Coordination Group for Meteorological Satellites (CGMS);

- Engaging actively with the WMO Global Campus and contributing to the continuous development of WMOLearn;
- Increasing the coordination and collaboration between CoE's in order to maximise the efficiency of effort;
- Fostering the use of the User Centred Design framework of processes to maximise the discoverability and usability of resources.
- Fostering the co-creation of learning interventions utilising existing and emerging platforms, including social;
- Developing or exploring guidance for impact-based decision support services (IDSS) and Global Framework for Climate Services (GFCS) applications;
- Increasing efforts to engage with the next generation of young professionals in all fields related to the work of WMO and to create more opportunities for them to participate in and contribute to WMO activities; promoting mentoring and peer to peer learning opportunities for both students and instructors.

VLab will implement its overall strategy by:

- Developing and delivering training in the form of distance and face-to-face events, RFG discussions, and self-study resources; and by
- Supporting Regional and cross-Regional Satellite User Conferences.
- Contributing to the regional satellite data requirements dialogues, and providing briefing information on the regional data access to enable NMHS managers to ensure they have the right staff to support access and application of the satellite data;
- Providing feedback to satellite operators on the use of the available data, products, systems and services and challenges associated with full exploitation;
- Providing information using the WMO Space Programme databases, including the Observing Systems Capability Analysis and Review Tool for space-based capabilities (OSCAR/Space), the WMO Product Access Guide (PAG) for satellite products and the WMO-CGMS Satellite User Readiness Navigator (SATURN);
- Advertising training events in the VLab [Training Events Calendar](#) and [WMOLearn Events Calendar](#);
- Sharing training resources developed by VLab Members in the WMOLearn section of the [WMO E-Library](#).

The delivery of training will rely on:

- Use of digital technology where appropriate;
- Enhanced communication capabilities for data and training material;
- Classroom (face-to-face) and distance learning delivery of training where appropriate;

- Collaboration among CoEs;
- Cooperation with other entities providing training;
- Continued support from CGMS members.

In the period 2020 to 2024, VLab will pay particular attention to:

- Big data: noting that there are a number of cloud-based satellite access platforms, and anticipating a growth in cloud-based services, including hosted processing. This shall include exploiting such platforms to support application training, and training in the use of such systems.
- Impact-based forecasting and impact-based decision support services (IDSS): encourage NMHS personnel to continuously work with core partners, such as emergency personnel and public safety officials, on the production and dissemination of accurate and consistent forecast information for certain weather, water, and climate events that have a high impact, noting that not all forecasting services will adopt IDSS in the short-term.
- Knowledge transfer: acting as a bridge between the CoEs to support knowledge sharing related to new data applications, for example regarding SAR data or hydrological models.
- Technical capacity-building: supporting the technical staff involved in satellite data reception and processing, through training, provision of up to date information, and potentially a skills framework;
- Space weather: noting the growth in interest for space weather services around the world, VLab will engage and cooperate with relevant partners seeking to enhance the implementation of space weather services. To provide relevant training, a space weather competency framework needs to be developed, which will require working with partners, including the Committee on Space Research (COSPAR) and the WMO Inter-Programme Team on Space Weather Information, Systems and Services (IPT-SWeISS), that have the appropriate skills in this area.

Quality Control and Evaluation

To ensure quality of services provided by VLab, continuous internal quality evaluations will be conducted. These include undertaking evaluations of the training impact of its activities following the best available approaches, as well as establishing procedures to ensure that VLab expectations are being met. Annual reviews of achievements will be carried out to ensure focus is kept on the provision of training in the main priority areas established in this strategy.

Cooperation

The development and delivery of training, with particular emphasis on national and regional specific demands and requirements, relies on the strong collaboration between VLab CoEs and satellite operators. It is the VLab belief that a strong collaboration between CoEs and partner Satellite Operators will contribute to the economic benefit of the large investments in the space based observing system.

The continuation of VLab collaboration with other training and education programmes in the subject of meteorology, including CALMet, and the WMO Training and Education Programme is also essential for further success. VLab will further build on the partnership with the Committee on Space Research (COSPAR) and explore partnerships with the Working Group on Capacity Building and Data Democracy (WGCapD) of the Committee on Earth Observation Satellites (CEOS) and with other programmes in areas of common or complementary interest.

Resources

The VLab is an entity sustained by contributing CoEs and Satellite Operators. Technical support function is critical for the organization of online events and VLab coordination. Currently, VLab provides a broad support to CoEs activities with its central website (<http://vlab.wmo.int>) serving as a platform for collaboration and networking. The work of a dedicated Technical Support Officer (TSO), who also provides pedagogical advice to the VLab community, is mission-critical in this regard. VLab will seek to provide continuous instructional and technical support of its activities through the work of the TSO. However, this requires a long-term collaborative funding effort from CGMS Satellite Providers via the designated WMO VLab Trust Fund, as per section 5.2.3 of CGMS HLPP.