

WMO Space Programme	CGMS VIRTUAL LABORATORY MANAGEMENT GROUP Terms of Reference and Implementation Plan	SAT-ST-08 Version 1 19/02/2007
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- *These Terms of Reference and Implementation Plan were adopted in 2001 by CGMS XXIX and issued in Annex A3 of the GCMS XXIX Final Report as “Structure and Goals for the CGMS Virtual Laboratory Focus Group”.*
- *In November 2005, CGMS XXXIV agreed to the change in name of the “Virtual Laboratory Focus Group to “Virtual Laboratory Management Group” (VL-MG).*

Management structure

Co-chaired by one satellite operator and one representative from the “centres of excellence”.
Served by the WMO Satellite Activities Office as the Secretariat. Membership should include:

- representatives of science teams as appropriate;
- remaining satellite operators and “centres of excellence”;
- other interested parties as appropriate.

VL Strategic Goals

- (1) To provide high quality and up-to-date training resources on current and future meteorological and other environmental satellite systems, data, products and applications;
- (2) To enable the “centres of excellence” to facilitate and foster research and the development of socio-economic applications at the local level by the NMHS through the provision of effective training and links to relevant science groups.

VL Immediate Goal

- (1) To implement a baseline VL and to foster its logical growth.

VL Connectivity Goal

- (1) To assure links between the 6 “centres of excellence” (and supporting satellite operators) with a **minimum** data rate of 56 kbs, to support communication (email, voice), the exchange of software and limited image data sets (e.g. case studies and some near real-time data sets);
- (2) “Centres of excellence” to consider means to increase link capacity to a minimum of T-1 within 5 years;
- (3) A preferred method in the short-term would be the direct insertion of data from a ground receiving station into the Virtual Laboratory servers. As an alternative, the Internet can be used to route data and products to the VL servers.

Virtual Resource Library (VRL) Goals

- (1) To establish a list of usable training resources (includes image data sets, s/w, tools);

- (2) To implement a structure for the depository of training resources which will allow easy access by the “centres of excellence” trainers;
- (3) To populate this structure with a core set of material from the training resources list;
- (4) To consider a more general access to the resource library by students (forecasters);
- (5) To consider the provision of additional (enhanced) material from the resource library to all 6 “centres of excellence”.

VL Utilization Goals

- (1) To establish a VL user tracking and feedback mechanism, from the outset, (for analysis, refinement, reporting to VL management, and to assess overall usefulness);
- (2) To keep abreast of user requirements for the VL (baseline being WMO Pub No. 258). Assume: analysis of user responses focused on education and training to questionnaires within their region and other user feedback is carried out by “centres of excellence” and results are reported to VL management;
- (3) To train meteorological students to an operational level of expertise as well as to allow daily weather discussions during training events, near real-time data and products are a strong requirement. Near real-time data are needed to train forecasters on the effective use of new satellite reception and processing systems. Depending on the application, the need for near real-time data availability may not be as stringent.

Long-Term Evaluation of the VL

- (1) After five years, conduct a comprehensive review of the VL.

Typical activities to be undertaken to meet the goals

- Consolidate documentation of the range of skills/competencies for operational meteorologists and specialists;
- Examine which online (Web-based learning), Computer Aided Learning, CDs and hard copy learning materials are currently available for use in the Virtual Laboratory. This activity will include contacting groups such as ASMET, COMET, CIRA, EuroMET, BMTC and CIMSS who have complementary projects under way and relevant science groups (such as the EUMETSAT SAFs, the TOVS Working Group, the Winds Working Group and the proposed quantitative precipitation working group);
- Negotiate with the copyright holders of the training material rights to either link to their material and/or to acquire the rights to use their material at the designated centres of satellite training expertise (this includes the centres making the material available to on- and off-site users);
- Working with groups such as ASMET, COMET or EuroMET, design and test possible user interfaces, educational approaches for delivering the material, and examine methods for online tracking of student participation;
- On a trial basis, evaluate the proposed Virtual Laboratory material in conjunction with one of the WMO satellite training workshops for more user feedback;

- Incorporate user feedback into the educational approach and review the content of the Virtual Laboratory;
- Move to a wider implementation of the material;
- Undertake a periodic review of the Virtual Laboratory sites in conjunction with reviews of the skills and competencies of the operational meteorologists and specialists;
- Prepare sample data sets for the various data streams now being provided or planned for in the near future. The data sets would be used within the VL concept;
- Provide for continuous monitoring of user requirements for Education and Training as well as the effectiveness of the Virtual Laboratory.

IMPLEMENTATION PLAN

Action items:

Prepare an inventory of which training resources and materials are presently available for the core VRL by the end of July 2001 and provide response to J. Wilson (Wilson and all VL participants).

Each satellite operator should identify which data and products could be linked into the core VRL by the end of July 2001 and provide information to R. Francis (Francis and satellite operators).

CIRA to establish a web server for an initial set near real time data and products by the end of November 2001 and report to the VL list-server (Purdom).

EUMETSAT to establish a server for an initial site for training resources and materials by the end of July 2001 and report to the VL list-server (Francis).

Additional specific actions and timetable:

0 to 1 year

- During the next 6 months, all “centres of excellence” to evaluate content, and how and what can be maintained on a server at the “centre”;
- Train satellite operators and “centres of excellence” on the use of RAMSDIS using VISITview;
- Increase training event effectiveness through the use of VISITview;
- Add the SATAID training resource to the VRL and utilize VISITview on the use of that tool.

1 to 2 years

- Within 1 ½ years, all satellite operators to strive to have a server online and connected to the VL;
- Each “centre of excellence” will strive to have a server online and connected to the VL;
- To establish a voice channel capability within VISITview;
- To evaluate and find ways to improve the VRL;
- To evaluate the quality of submitted materials by the “centres of excellence”, completeness (e.g., speaker notes), appropriate deletion dates, compatibility issues, and virus protection.

5 years

- Conduct comprehensive review