# WMO-CGMS VIRTUAL LABORATORY (VLab)

## A CONTRIBUTION TO EDUCATION AND TRAINING IN SATELLITE METEOROLOGY

Established by the World Meteorological Organization (WMO) and the Coordination Group for Meteorological Satellites (CGMS), VLab is a global network of specialized training centres and meteorological satellite operators working together to improve the utilisation of data and products from meteorological and environmental satellites.

*Eight satellite operators*:
• Argentine National Commission for Space Activities (CONAE)
• Brazilian National Institute for Space Research (INPE)
• China Meteorological Administration (CMA)
• European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT)
• Japan Meteorological Agency (JMA)
• Korea Meteorological Administration (KMA)
• Russian Federal Service for Hydrometeorology and Environmental Monitoring (ROSHYDROMET)
• United States National Oceanic and Atmospheric Administration's Environmental Satellite Data and Information Service (NOAA/NESDIS)

*Thirteen training Centres of Excellence (CoEs):*
• Argentina (Buenos Aires and Cordoba)
• Australia (Melbourne)
• Barbados (Bridgetown)
• Brazil (Cachoeira Paulista)
• China (Beijing and Nanjing)
• Costa Rica (San Jose)
• Kenya (Nairobi)
• Morocco (Casablanca)
• Niger (Niamey)
• Oman (Muscat)
• Republic of Korea (Jincheon)
• Russian Federation (Moscow and St Petersburg)
• South Africa (Pretoria)



*VLab links between Centers of Excellence (represented by their national flag) and their supporting satellite operators highlighted in yellow (status: December 2012).*

The Centres of Excellence (CoEs), working closely with one or more of the satellite operators and often co-located with WMO Regional Training Centres, are established in all WMO Regions to meet user needs for increased skills and knowledge in using satellite data within their Region.

*Other organizations supporting VLab activities:*
• Cooperative Institute for Research in the Atmosphere (CIRA, USA)
• European Virtual Organisation for Meteorological Training (Eumetcal)
• EUMETSAT sponsored international training project - EUMeTrain
• University Corporation for Atmospheric Research (UCAR) COMET Training Program



*The VLab Management Group meets online three times a year. Each online meeting is held twice, with one session for the Western hemisphere and another for the Eastern hemisphere. Although much VLab business is carried out via online meetings, the VLab organises a face-to-face meeting every other year in one of the member countries. This photo shows VLab members participating in the sixth VLab Management Group Meeting held in São José dos Campos, Brazil, in October 2012.*

## Strategic Goals of the VLab

• To provide high quality and up-to-date training and supporting resources on current and future meteorological and other environmental satellite systems, data, products and applications;

• To enable the Centres of Excellence to facilitate and foster research and the development of socio-economic applications at the local level by the National Meteorological and Hydrological Services through the revision of effective training and links to relevant science groups;

• To become a global provider of training by establishing and/or strengthening each CoE's Regional training activities.

### Successes

Important successes of the VLab include the formal recognition of new Centres of Excellence and the delivery of a growing number of training services.

VLab members regularly organise training events and web meetings to discuss training activities and developments. Several Regional Focus Groups are being organised by the CoEs to widen the access to training events and training resources to other countries in their region. In addition, training in the format of 'Event Weeks', where a series of online sessions on a specific theme are presented within a week, are also organised and supported by the VLab. Some examples are the High Profile Training Event (HPTE) organised in 2006, the Mediterranean Weather Week and the Dust Week organised by EUMETSAT (2009 and 2010, respectively); and most recently, the Aviation Week organised by the VLab CoE Australia (2011 and 2012) and by VLab CoE Barbados (2012).

# VLab EVENTS



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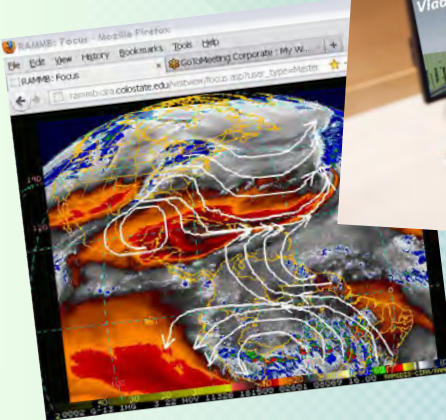
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All future training events planned by VLab CoEs are shown in the online calendar on the VLab website at http://vlab.wmo.int. The VLab calendar is shared with Collaborators and Partner Projects such as Eumetcal, EUMeTrain and the RA-II Pilot Project, showing a variety of opportunities available for training related to satellite meteorology in all WMO Regions and WMO official languages. To highlight VLab successes, future plans and to distribute VLab news to a wider audience, a newsletter is issued every 6 months.

A key success of the VLab is the greater use of blended learning, a training concept that combines online and traditional methods for training at relatively low cost. For distance learning sessions, course management systems and teleconferencing tools are being increasingly used by the VLab partners.

### The Future

In the coming years there will be major changes in the types of user communities requiring satellite related training, the way teaching and learning are carried out and the subject matter of the training. There will be significant advances in e-learning technology and increased availability of high speed low cost communications across the globe. Taking into account the dynamic expansion of VLab capabilities, sponsorship from additional satellite agencies and the inclusion of more CoEs can be expected in the coming years. This growth will ensure that all countries within a particular WMO Region can benefit from VLab training activities and where possible, that more training can be provided in all WMO official languages.

For further information about the WMO-CGMS Virtual Laboratory, please visit the website at: http://vlab.wmo.int