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REPORT ON EUMETSAT TRAINING ACTIVITIES

This Working Paper reports on the training activities carried out by EUMETSAT since CGMS XXXIII.

CGMS Members are invited to take note.

REPORT ON EUMETSAT TRAINING ACTIVITIES

1 INTRODUCTION

Since the last report to CGMS (XXXIII) EUMETSAT has continued to organise and support several training events in Europe and Africa, and more recently in South America. For details please see below:

2 TRAINING ACTIVITIES IN 2005

Date	Location	Event	Comments
10-12 October	Moscow, Russia	3 rd Joint Training Workshop for NHMS staff from CIS and Baltic Countries	Introduce methods of satellite data processing, interpretation and use for operational forecasting and research.
10-14 October	Mikulov, Czech Rep.	Workshop on MSG applications in nowcasting and climatology	Training course for meteorologists from Central and Eastern Europe.
17-19 October	Langen, Germany	MeteoCAL workshop	Co-ordinate the production of CAL modules based on the MeteoCal tools; instruct new developers; organise the future generation of modules.
17-18 November	Lisbon, Portugal	Annual Visit to Member States	Introduce EUM programmes to the staff of the Portuguese Met. Services, with an emphasis on MSG applications.
19 Nov. – 2 Dec.	Niamey, Niger	ESAC-IVF course	Satellite data applications course for French speaking countries in Africa.
28 Nov. – 2 Dec.	Pretoria, South Africa	WMO Nowcasting workshop	Provide hands-on experience with Nowcast concepts and systems.
7-9 December	Antigua, Guatemala	Workshop on Earth Observation	To present the initiatives carried out by the Group on earth Observation encouraging the participation in this Group of the Latin American countries.

Other 2005 activities

- 18 October 10th Anniversary SATMANU, Vienna
 26 October EUMETSAT, Visit View session Distance learning on “Early detection of Rapid Cyclogenesis”.
 23 November EUMETSAT , Visit View session Distance learning presentation on “Monitoring Severe Convection with MSG”.

3 TRAINING ACTIVITIES IN 2006

Date	Location	Event	Comments
11-22 February	Muscat, Oman	EUMETSAT Satellite Application Course for the Middle East region, ESAC-ME-II	The goal of the course was to optimise the use of Meteosat data in this region, keeping in mind the importance of the Indian Ocean data Coverage service, currently provided by Meteosat-5. 24 participants from seven countries took part in the course.
14-16 February	Langen, DWD	MeteoCAL workshop for the generation of CAL materials	The goal of the course was to promote and explain the use of the MeteoCAL tools to beginners by creating a new module; discuss the new trends and possibilities of the tools and how to implement them. Participants from eight countries took part in the course.
22-23 February	Sofia, Bulgaria	Visit to Bulgaria	Two days training at the NIMH Bulgaria, on RGBs and the latest developments, convective clouds, use of MSG WV channels, Rosenfeld tool and preliminary preparation for the course in September 2006.
8-10 March	Lisbon, Portugal	Visit to Portugal	The purpose of this visit was a Land SAF workshop and MSG course preparation in October. It was agreed to organise a training course on the use of MSG receiving stations of the PUMA type, for the benefit of African meteorologists in the Portuguese speaking countries, and ten meteorologists from IM, including the service in Azores.
		African Satellite	The ASMET Team met at EUM

27 March – 6 April	EUMETSAT	Meteorology Education and Training (ASMET 5) first meeting	Headquarters to discuss the development of a new training module for the African community based on MSG data.
29 March - 4 April	Helsinki, Finland	Nordic Meteorological Competence Training course (NOMEK)	Meteorologists had the opportunity to learn more about satellite and radar meteorology, numerical weather prediction and products, case studies and verifications. More than 30 participants from ten countries took part in this course.
3-5 May	Genoa, Italy	MSG Nowcasting Course	Twelve participants from the Ligurian Met Service took part in this three day course. The agenda of the course was focused on convective clouds and practical exercises to classify clouds.
8-12 May	Krakow, Poland	Krakow International Summer School on Applications with the newest Multi-Spectral Environmental Satellites	EUMETSAT provides financial support to the Polish Institute of Meteorology and Water Management to organise this event. Twenty eight participants from Poland and the region met for a five day course to learn about the sounding instruments and high resolution imagers on polar orbits, AIRS and MODIS.
29 May -2 June	Langen, DWD	DWD-EUM-ZAMG Training Workshop on Satellite Meteorology	This workshop was organised by the DWD. Some of the topics were: satellite techniques and systems, meteorological products from Meteosat, physical basics of satellite meteorology, nowcasting. EUMETSAT offered financial support to eleven participants.
6-8 June	Vinicne, Slovakia	SHMI-EUM workshop on MSG Applications in Nowcasting, precipitation detection and forecasting, based on microwave sensors and radar.	27 hydrologists and meteorologists from the Slovak Republic and neighbouring countries met for this workshop. During the course, Hans P. Roesli gave a Visit View lecture on SEVIRI 3.9 μm channel. Many participants showed high interest about the possibility of using this tool in their countries.

19-23 June	EUMETSAT	High Profile Training Event Planning	Six trainers partners from Kenya, Niger, Oman and South Africa met in EUMETSAT to prepare for the HPTE, scheduled from 16-27 Oct. These training partners of EUMETSAT will present lecturers through the internet to other colleagues and students around the world. This initiative will demonstrate that distance learning will offer unprecedented opportunities to students in satellite meteorology around the globe.
26-28 June	Zagreb, Croatia	Visit to Croatia	Purpose of this visit was to attend the EUMETrain meeting and coordinate the preparation of the Training Workshop on the Use of Satellite Data for Climate Monitoring, in the framework of a wider GCOS regional Training Project for Eastern and Central Europe, scheduled for December 2006.
27 June -7 July	Cachoeira Paulista, Brazil	MSG Satellite Applications Course	This is the fourth time that courses on met. satellite applications, with a focus on opportunities opened by EUMETCast for weather monitoring and climate research in South America, have been held in Brazil. Forty three participants from Bolivia, Brazil, Cape Verde, Colombia, Costa Rica, Cuba and Venezuela.
17 -28 July	EUMETSAT	African Satellite Meteorology Education and Training (ASMET 5) second meeting	The ASMET Team met at EUM Headquarters to continue the development of a new training module for the African community based on MSG data.
27 -28 July	Valencia, Spain	Postgraduate course on New Observation and Watch Technique in Met. and Climatology	Second Course for postgraduate students, supported by EUMETSAT and organised in cooperation with Uni. Valencia.
7 – 18 August	Nairobi Kenya	ESAC -VE	Training course in the applications of satellite data & products for English speaking African countries

18 – 22 September	Antigua, Guatemala		3 rd Iberoamerican course on satellite meteorology
25 – 29 September	Sofia, Bulgaria		Workshop on MSG applications and Nowcasting

Other activities in 2006

During 2006 a lot of effort was invested to further develop the concept and techniques for presenting distance learning lectures, using VisitView. Now regular lectures are delivered by EUMETSAT and in addition the distance learning activities in Europe are coordinated through the Virtual Organisation for Meteorological Training – EUMETCAL – in which EUMETSAT is a major contributor. These activities are reflected in the list of events below.

- 23 January Visitview lecture on “*Airmass RGB*”. Five countries took part. Objectives: learn how to generate the Airmass RGB (Recipe); how to use/interpret the WV6.2; WV7.3 and the IR9.7 - IR10.8 brightness temperature difference (BTD); understand the relationship between the IR9.7 - IR10.8 BTD and the total ozone content; short overview of WV image interpretation; interpretation of colours of the Airmass RGB; use of the Airmass RGB composite for monitoring jet streams, cyclogenesis, PV maxima etc. and verify the above through a number of tests/quizzes. The VV lecture was repeated on 7 March to those countries that could not participate in January.
- 23 Jan -2 Feb Mr. Humaid Ali Al-Badi, meteorologist at the Dir. Gen. of Civil Aviation and Meteorology at the airport in Muscat and Mr. Andy Kwarteng from the Sultan Qaboos University from Oman, visited EUMETSAT to prepare part of the material for the course on 11 Feb.
- 20 Feb – 17 Mar Ms. Anina Cirillo, a student from the University of Parthenope in Napoli, Italy, made an Internship at the User Service Division and worked together with Jochen Kerkmann on the presentation “*Interpretation of Meteosat-8 Imagery, studying the eruption of Mount Karthala in 24-26 November 2005*”.
- 7 Mar Visitview lecture on “*Airmass RGB*” (lecture was repeated on this day).
- 20-21 Mar EUMETrain meeting – All representatives from the participating institutes (ZAMG, FMI, KNMI, DWD, DHMZ, EUMETSAT and UK Met Off) met to discuss about the scientific work and its progress for this year. Eight case studies and four CAL modules will be produced in this year. At this stage four Visitviews have been created and will be put online. SATMANU - nine conceptual Models are being revised; two conceptual models are new.
- 23 Mar Training Officer, Jose Prieto, gave a lecture related to “Preventing and mitigating natural disasters”, during the *World Meteorological Day*, celebrated in the head office of the INM in Madrid, Spain.
- 3 May VisitView lecture on “*SEVIRI window channels in the infrared*”. Eight countries participated through a telephone conference via Internet. Objectives

of the session: learn which are the window channels in the infrared portion of SEVIRI; review the general characteristics of window channels; understand the behaviour of channels at 8.7, 10.8 and 12.0 μm for different ground surfaces and cloud types; practice and exercise on scene identification through window channel differences, like 10.8 – 12.0 μm ; review the concept of semi-transparency; applications to precipitation, sea surface temperature and ash monitoring.

- 12-16 June *EUMETSAT Meteorological Satellite Conference*, in Helsinki – contribution to the High Profile Training event 2006 of the Virtual Laboratory for Education and Training – presentation by the Head of USD.
- 29 June VisitView lecture on “*The use of MSG Channel 7: 8.7 μm* ”. Objectives of the presentation: understand the importance of the 8.7 μm for applications such as: desert monitoring, sand and dust storms, volcanic ash, SO₂ emissions, cloud phase identification, fog identification; the behaviour of channel 8.7 μm for different ground surfaces and cloud types; the usefulness of the 8.7 μm channel in RGB applications; brightness temperature differences (BTD) between the 8.7 μm and the other channels and the characteristics of the 8.7 μm channel.
- 10 July -08 Aug Mr. Akihiro Shimizu, Technical Officer from the Japanese Meteorological Agency, visited EUMETSAT to learn about the preparation of Visitview lectures and distance-learning presentation tools addressing satellite meteorology; for a mutual exchange of information on satellite systems and for the participation in joint-logistical planning of the JMA and EUMETSAT contributions to the global WMO/CGMS High Profile Training Event, foreseen in October 2006.
- 4 – 5 September Participation in WMO ET Meeting, Geneva
- 13 September VisitView lecture on the detection of Volcanic ash and SO₂ in MSG images. Objectives to provide background info: aviation and health hazards, overview of techniques for ash and SO₂ detection with MSG, in particular, understand the concept of “reverse absorption” for ash clouds, learn how to generate the Ash RGB composite (recipe), interpretation of colours of the Ash RGB, short introduction to quantitative ash and SO₂ products and show limitations of ash and SO₂ detection.
- 14 – 22 September Participation in several training related meetings, CMA, Nanjing.

4 TRAINING EVENTS CURRENTLY PLANNED FOR 2007

Training events are planned to take place in 2007 in the following countries, Bolivia, Brazil, Croatia, Denmark, France, Germany, Greece, Italy, Nairobi, Niamey, Muscat.

In addition the regular distance learning activities to develop the concept of focus groups further will be extended in 2007.