

Eumetcal Programme Proposal for the EUMETNET Council

Establishing the virtual training organisation: The next five years from 2007 to 2012

TABLE OF CONTENTS

1. INTRODUCTION.....	3
1.1 MOTIVATION	3
1.2 NEW CHALLENGES	3
2. RESULTS	4
2.1 WEB PAGES	4
2.2 EUMETCAL INTRALIBRARY.....	5
2.3 ONLINE LEARNING COMMUNITY.....	5
2.4 WORKSHOPS	5
2.5 MODULE PRODUCTION.....	5
2.6 QUESTIONNAIRE.....	6
3. VISION AND OBJECTIVES.....	6
4. DETAILED WORK DESCRIPTION	7
WORK AREA 1: TRAINING DEVELOPMENT.....	8
<i>WP 1.1: Production of CAL Material.....</i>	<i>9</i>
<i>WP 1.2: Eumetcal Workshops.....</i>	<i>9</i>
WORK AREA 2: TRAINING RESOURCES	9
<i>WP 2.1: Website and Server</i>	<i>9</i>
<i>WP 2.2: Library</i>	<i>10</i>
WORK AREA 3: TRAINING DELIVERY SUPPORT	10
<i>WP 3.1: Syllabus Development.....</i>	<i>10</i>
WORK AREA 4: ADMINISTRATION	11
<i>WP 4.1: Programme Manager.....</i>	<i>11</i>
<i>WP 4.2: Training Support Officer.....</i>	<i>11</i>
<i>WP 4.3: Liaison and Publicity.....</i>	<i>12</i>
5. SUPPORT TO COURSE DELIVERY.....	12
6. EUMETCAL BUDGET 2007-2012.....	13
7. CONCLUSION	13
ANNEX I.....	15
EUMETCAL STEERING GROUP (ESG) TERMS OF REFERENCE	15
ANNEX II.....	18
EUMETCAL ADVISORY BOARD (EAB) TERMS OF REFERENCE	18
ANNEX III.....	20
THEMED RESOURCE WORKING GROUP (TRWG) TERMS OF REFERENCE	20
ANNEX IV	22
TRAINING SUPPORT OFFICER	22
ANNEX V	23
ANNUAL EUMETCAL MEMBER CONTRIBUTIONS TO THE PROGRAMME FOR THE PHASE 2007-2012.....	23
ANNEX VI.....	24
EUMETCAL PROGRAMME RESULTS FROM THE SECOND OPERATIONAL PHASE (EUMETCAL II 2004-2007).....	24
ANNEX VII	28
THE INTELLECTUAL PROPERTY RIGHTS (IPR) FOR ALL MEMBERS OF THE EUMETCAL PROGRAMME	28

1. INTRODUCTION

The first phase of the Eumetcal programme was agreed by the EUMETNET Council and functioned from 2002 to 2003. This pilot programme established the work methods and created the basis for the virtual training organisation of Eumetcal. The Second phase of Eumetcal, from 2004 to 2007, has been more operational in character in the sense that it carried out most of the activities that have created the core of the programme. This document presents a proposal for the third consecutive phase of the Eumetcal Programme (hereafter called “Eumetcal III”) which builds upon experience gained during the first two phases and broadens the scope of Eumetcal activities to include training delivery support, whilst providing a longer term perspective for the programme. A key objective of the Eumetcal Programme is to address the training needs of its National Meteorological Service (NMS) community and to provide meteorological staff structured virtual learning while encouraging other European NMSs to join the programme as Participating Members.

1.1 Motivation

Information sharing has reached new dimensions with the introduction of modern information and communication technologies. The world is now within our reach but not all information and material is useful and the further one delves into the professional world the less useful and up-to-date the material tends to be.

Meteorology is a specialised field that is heavily dependant upon the effective exploitation of the most modern technologies available. Operational forecasters need continuous professional development (CPD) in their daily activities to maintain high standards in weather products. The National Meteorological Services (NMSs) of Europe are facing ever tighter financial restrictions thus creating a situation where training needs cannot be met without cooperation.

Sharing, reprocessing and exchanging training material and organising material into comprehensive online training modules significantly reduces development time for the teacher and provides NMSs with ready-made packages for the student without excessive use of staff resources. E-learning methods provide a fast response to new technologies and can be used to reach a wide audience potentially spanning the entire globe.

1.2 New Challenges

The increasingly fast development of new e-learning programs and methods demands, however, dedicated personnel who are aware of the potentials and benefits of the various methods for e-learning. The current wealth of resources developed in the Eumetcal programme along with expertise in Computer Aided Learning (CAL) methods creates a natural platform to build a cooperative approach and makes Eumetcal a central solution to all of the above mentioned challenges faced by the meteorological community. The new challenges imposed by WMO Technical Publication No 258 and the Single European Sky (SES) legislation create a new situation in aviation meteorology where NMSs need to find a resource-efficient approach to competency assessment and qualification of personnel.

2. RESULTS

The key objectives of the current Eumetcal Programme operational phase from 2004 to 2007 have been to meet the evolving training requirements of EUMETNET NMSs, to provide access and resources for the training needs of weather forecasters, to strengthen cooperation on training between EUMETNET members and to provide access to CAL creation tools and the resource library.

The Eumetcal Programme management was awarded to the Finnish Meteorological Institute. The Eumetcal server and web pages are maintained by Météo France, and the UK Met Office hosts a backup site and an additional server for the training modules. The UK Met Office is also responsible for the development of library content. Six NMSs (see Annex VI) are involved in the production of Eumetcal training modules. Thus, Eumetcal draws together groups of experts in various fields to cooperate in training in a way that has not existed before the programme (for reference see Annex VI). The most concrete activity of Eumetcal to the meteorological staff of member and east-European NMSs is the annual Eumetcal Workshop hosted in 2005 and 2006 by the German Meteorological Service (DWD) drawing together some 48 participants from 26 different institutions (see Annex VI). Especially smaller NMSs may only have a handful of people directly involved in training. It is hence of the utmost importance to give meteorological staff the opportunity to exchange experiences and to learn new techniques.

Eumetcal has been very successful in its approach to deliver quality training material with minimal resources and to create training cooperation in the field of meteorology. The experiences of both trainers and students support the view that Eumetcal adds value and brings an international perspective into training whilst introducing new methods for training (see Chapter 2.6). The programme has employed meteorologists throughout Europe in module production and trained NMS staff in the use of VISITview, MeteoCAL and intraLibrary programs.

Due to the pioneering nature of the Eumetcal Programme, the virtual organisation has been developed from scratch to become the currently functioning structure. A Steering Group, an Advisory Board and a Training Support Officer have all proved to be essential for this particular type of programme and the next five-year period will significantly benefit from the systematic work done to achieve the current level of communication and functionality.

2.1 Web pages

Eumetcal resources can be accessed via dedicated web pages at www.eumetcal.org. The Eumetcal web pages developed and maintained by Météo France have been created to provide easy access to all Eumetcal assets and also to external training sites. The web pages have, among other things, access to the learning modules produced within the Eumetcal programme. The vigorous development work carried out by Météo France has led to a very clear and intuitive layout. The web pages are visited frequently by users of NMSs throughout the world (for reference, see Annex VI: Figure 2 and Figure 3).

2.2 Eumetcal intraLibrary

The Eumetcal intraLibrary is a digital Learning Object Repository with training material from participating NMS. Each member has access and can upload material into the library and make use of the pool of information available for their own purposes (For Intellectual Property Rights, see Annex VII). The library hosts a range of material from complete learning modules to individual images.

The intraLibrary has reached its seventh development version and has reached a very good level of usability and clarity as can be seen from the results of the Eumetcal user questionnaire (see Chapter 2.6). From the 21 respondents 14 (66.7%) found the Eumetcal intraLibrary to be easily accessible, 7 (33.3%) did not find it difficult or easy to access. No users found the Eumetcal intraLibrary to be difficult to access.

Following a tremendous development effort from the UK Met Office and the FMI, the amount of material in the Training Resource Library has grown to over 2400 objects and is expected to expand even further now that the functionality of the system has improved dramatically. Eumetcal III, the next operational phase, will address the issue of augmenting the material in the library according to feedback from users.

2.3 Online Learning Community

The Eumetcal web server also hosts exchange facilities using the Moodle-platform (hosted by Météo-France). This very useful tool allows the creation of virtual working groups in order, for example, to create new teaching material. It includes the ability to chat, discuss, exchange and comment material during the development process. The usage of the platform is growing slowly as its development progresses.

2.4 Workshops

The Eumetcal Workshops have brought together trainers from member NMSs to discuss training in meteorology, exchange good practices, information and techniques. The workshops also discuss new e-learning techniques and help trainers to find useful information for their training. The Deutscher Wetterdienst (DWD) has kindly hosted the two first workshops in Langen, Germany. The workshops have been very successful (see Annex VI: Table 3) and have given trainers a wealth of information and ideas for their training needs. In the Eumetcal user questionnaire 9 out of 14 (64.3%) respondents who had attended the workshop found the workshop to be extremely useful in providing tools for trainers, 5 out of 14 (35.7%) found it to be somewhat useful and no participant was dissatisfied with the workshop.

2.5 Module Production

The production of complete e-learning modules has been a tremendous effort from the participating NMSs and has produced to date four high-quality training packages in such topics as Polar Lows, Rapid Cyclogenesis, Forecast Verification and Cyclogenesis in the Mediterranean.

There are still several modules in development (e.g. Radar Meteorology, Vorticity and Verification of probability forecasts) and the programme will have produced (depending on additional requirements) approximately nine training modules by the end of the current operational phase of Eumetcal. The participating countries and learning modules produced in the Eumetcal programme are given in Annex V.

2.6 Questionnaire

A questionnaire was distributed to all member NMS in spring 2006 to evaluate the Eumetcal programme midway through its operational phase and to get input from members for this programme proposal. The questionnaire received 21 responses. In general, the responses were positive and supported the programme activities. The Questionnaire was divided into four categories: The frequency and ease of use of the training resources, contents of the Eumetcal intraLibrary, the contribution of the website and workshops to Eumetcal activities and the Eumetcal programme.

Responses to the Questionnaire showed that all participants found the Eumetcal web site and workshops to be useful and, furthermore, indicated that Eumetcal has achieved many of the key goals of this phase of the programme. They also show that we are only at the beginning of the full exploitation of the potential that e-learning and computer assisted learning provide us.

The results from the Eumetcal activities carried out so far and user comment arising from the questionnaire support the fact that there is a need for a sustainable solution to the training needs of NMSs. The Eumetcal programme has succeeded in its key objectives it set out prior to the operational phase. The current Eumetcal deliverables need to be maintained, extended and developed further which is why the proposal not only builds upon the intraLibrary, web site and module production but also develops these resources and their applications further.

Nevertheless, the results identify some areas for improvement and to tackle these issues will be the highest priority in the next phase of the programme. When asked about the programme, 7 out of 20 (35%) felt that the programme had accomplished its goals quite well and 13 out of 20 (65%) gave the programme a satisfactory mark. This questionnaire identified aspects where Eumetcal can improve and better its results in future questionnaires. The actions taken directly from the user questionnaire include establishing Eumetcal as the reference for training, improved promotion of the programme assets with a dedicated work package and keeping training resources a focus of the programme.

3. VISION AND OBJECTIVES

The vision for the five-year *Eumetcal III* programme from 2007 to 2012 is to strengthen the position of Eumetcal as the European/EUMETNET virtual training organisation in the field of meteorology thus stabilising the virtual organisation and creating a functioning capability for support to, and coordination of, training delivery building upon existing resources and tools. The programme resources created in previous phases need to be maintained and developed to protect the valuable investment and to provide a foundation upon which more activities can be built.

The programme objectives for 2007-2012 are to continue to ensure that evolving training requirements of EUMETNET NMSs are met, to maintain and further develop the programme's resources (web pages, Moodle-environment, intraLibrary and server), to strengthen cooperation on training between EUMETNET members and to look for solutions for the training needs of meteorological staff.

In order to fulfil its vision and objectives the Eumetcal programme will provide a forum which will allow trainers and meteorological staff of member NMSs and partners to discuss and develop new ideas, give access to emerging training material, reduce development time of training material, add quality to teaching material through pooling knowledge and create course syllabi according to members' needs.

The development of future resources will take into account the results of the 2006 questionnaire and be based upon recommendations of both the Eumetcal Advisory Board and Steering Group. The Eumetcal vision supports a programme where all NMS can take up or join in activities, express their opinions and where all members have an equal voice.

4. DETAILED WORK DESCRIPTION

The Eumetcal III programme comprises three Work Areas (WA) and five Work Packages (WP), as illustrated in Figure 1. The Work Area 3 – Training Delivery Support, is a new addition to the Eumetcal programme, building upon the results from the first two work areas of Eumetcal I and II (Training Resources and Training Development). Work Area 3 responds to the evolving training needs of member NMS, as described in section 1.2 above.

Communication and interaction between the different Work Areas is ensured by the Programme Management. As Eumetcal is the European/EUMETNET Virtual Training Organisation in the field of meteorology, it is essential that the various entities involved work together. This cannot always be done by physical meetings. Therefore distance cooperation and teaching virtually is an important cornerstone of Eumetcal III and will also be used in the Eumetcal Courses.

The Eumetcal Steering Group (ESG) (see Annex I) will receive reports from the different work packages and control the overall direction of the programme. The Eumetcal Advisory Board (EAB) comprises representatives from each member country and gives scientific opinions concerning the Eumetcal activities (see Annex II). The Eumetcal Themed Resource Working Groups (TRWGs) are scientific expert groups responsible for the development of the content of training modules (see Annex III). It should be noted that the costs associated with the meetings of the ESG and EAB will not be covered by the Eumetcal Budget.

The organisation of, and responsibility for each work package will be subject to a tender process open to Eumetcal member NMSs. Third parties (e.g. universities) can be used as subcontractors by responsible members of work packages. In addition to the Programme Manager, the programme will also employ a full-time Training Support Officer who will be in charge of the day-to-day activities of the programme (see Annex IV).

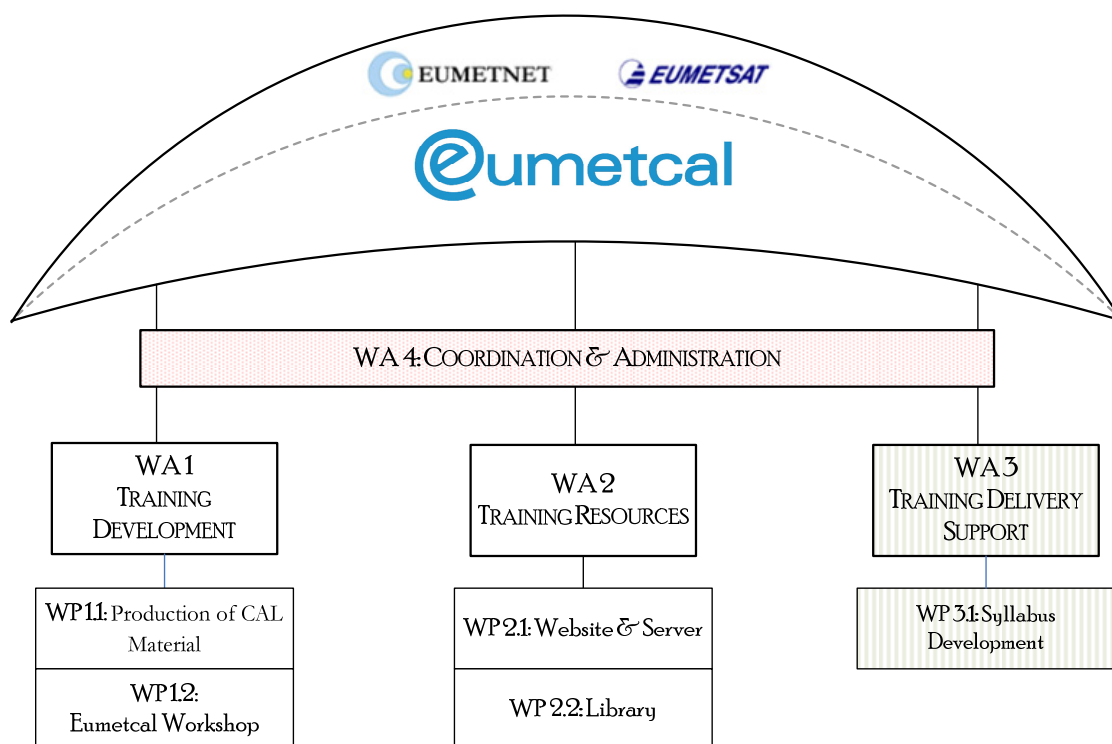


Figure 1: Eumetcal III Work Organisation Chart

Work Area 1: Training Development

The Work Area 1 of the Eumetcal Programme will ensure the effective development of training material for the meteorological staff of its member NMSs. This work area is divided into two work packages, namely the production of CAL material and the Eumetcal workshops. The storage and dissemination of the materials produced in this work area will fall under Work Areas 2 and 3, respectively.

The Production of CAL Material (as defined by the TRWG, EAB and endorsed by the ESG and Eumetcal Workshops) in new and developing topics in the field of meteorological training is a core function of Eumetcal, aimed at providing NMS trainers with tools, and their staff with self-study material.

The initial TRWGs address topics such as Satellite Meteorology, Radar Meteorology, Synoptic/NWP Meteorology, Climate, Hydrology and Oceanography. These six Working Groups will consist of subject experts that have experience in training and will produce a yearly curriculum for topics relevant to their theme. TRWGs will be responsible for harmonising training in Europe and providing NMSs with detailed suggestions on issues that require training (see Annex III). The role of the TRWG is, thus, to act as the primary authority in Europe for training in a specific topic.

WP 1.1: Production of CAL Material

<i>General description</i>	Funding for Training Material defined by the Eumetcal TRWG, EAB and endorsed by the ESG.
<i>Deliverable(s)</i>	<ul style="list-style-type: none"> ○ Recommendations on current training topics ○ Annual European Training Curriculum ○ Training cooperation between subject experts ○ Update and review of training material ○ Dedicated Training Material
<i>Cost</i>	125 000 €

WP 1.2: Eumetcal Workshops

<i>General description</i>	Eumetcal Workshops will bring together European trainers and training managers in the field of meteorology to give them a forum for the exchange of good practices, information and teaching techniques.
<i>Deliverable(s)</i>	Eumetcal workshop(s)
<i>Cost</i>	50 000 €

Work Area 2: Training Resources

The Eumetcal Training Resource Library has been developed in close cooperation with the NMSs and currently hosts well over 2400 learning objects covering a vast spectrum of topics addressing meteorology and related topics. The maintenance and development of the Eumetcal training resources is essential for all Eumetcal activities and forms the core of the programme.

WP 2.1: Website and Server

<i>General description</i>	All Eumetcal resources are available via the programme website. This Work Package is thus in a central role for the success of the programme.
<i>Deliverable(s)</i>	<ul style="list-style-type: none"> ○ Eumetcal website ○ Eumetcal intraLibrary and web servers
<i>Cost</i>	88 000 €

WP 2.2: Library

<i>General description</i>	The Eumetcal intraLibrary has formed the core of the programme and will continue to be the most valuable asset of the programme. It therefore needs active maintenance, further development, and flexible licensing solutions.
<i>Deliverable(s)</i>	intraLibrary maintenance and development
<i>Cost</i>	62 000 €

Work Area 3: Training Delivery Support

The scope of the Eumetcal Programme deliverables will expand from training resource development and exchange to include the coordination and development of structured virtual learning courses and relevant support to training delivery by a EUMETNET NMS or Consortium of NMSs. The ESG will endorse the Eumetcal label to those courses that comply with the Eumetcal standards of quality and accessibility and follow the Eumetcal IPR requirements.

The Eumetcal courses will comprise e-learning material, distance learning methods and traditional classroom sessions (the combined method hereafter referred to as “blended learning”). These courses will be delivered outside the Eumetcal programme, but using Eumetcal material and based on a commitment to Eumetcal requirements and standards. Delivery of blended learning courses is required to respond to the growing need of training in meteorology provided by the advances in current technology. It should be further noted that costs associated with the delivery of these courses is not included in this Work Area (see Chapter 5 for more details).

WP 3.1: Syllabus Development

<i>General description</i>	Eumetcal will be responsible for the central development of course syllabi in cooperation with the training providers to achieve the standards and uniformity required for qualification of trainees. The syllabus will be a reference for giving the Eumetcal label to a course.
<i>Deliverable(s)</i>	Course syllabi
<i>Cost</i>	25 000 €

Work Area 4: Administration

The programme will be governed by the ESG comprising NMS wishing to actively contribute to the Programme. The ESG Terms of Reference are detailed in Annex II. The Eumetcal Responsible Member will establish relevant legal relationship with Eumetcal Programme Participants and will then provide legal arrangements with the consortium partners. When the Economic Interest Group (EIG) of EUMETNET is established, the legal relationship with Eumetcal programme participants will be replaced by a unique legal relationship between the Eumetcal Responsible Member and the EIG.

The management of the Eumetcal programme is divided into three main work packages. The total budget for the Programme management is €280K for the five year period that comprises of the staff costs for the full-time Training Support Officer (€180K), part-time Programme Manager (€50K) and Liaison and publicity (€50K).

WP 4.1: Programme Manager

<i>General description</i>	The Programme Manager is responsible for the overall management and coordination of the various work packages of the programme. This activity also includes the promotion of the programme to NMSs in relevant conferences, meetings, etc and discussions with potential additional participants in the programme. The cost covers remuneration, social charges, travel and subsistence for the part-time Manager
<i>Deliverable(s)</i>	<ul style="list-style-type: none"> ○ Management and coordination of the programme ○ Representation and promotion of Eumetcal in various forums
<i>Cost</i>	50 000 €

WP 4.2: Training Support Officer

<i>General description</i>	The Training Support Officer will carry out the daily support and training activities of the programme as well as represent, promote and develop the resources. The cost covers remuneration, social charges, travel and subsistence for the full-time officer
<i>Deliverable(s)</i>	<ul style="list-style-type: none"> ○ Support the Programme Manager in the day-to-day management of the programme, in particular quality control of the Eumetcal Training Resource Library and resource creation tools, web announcements of Eumetcal lectures and Workshops and so on ○ Assist NMSs with the creation of training resources ○ See Annex IV for further details
<i>Cost</i>	180 000 €

WP 4.3: Liaison and Publicity

<i>General description</i>	This activity ensures active communication between the programme partners and key international organisations and provides the resources for the active promotion and informing of the programme assets to the NMSs. The costs will be made up of publications, travel, conferences, etc. dissemination activities.
<i>Deliverable(s)</i>	<ul style="list-style-type: none"> ○ Dissemination of programme resources ○ Fliers, posters and hand-outs ○ Conference attendance
<i>Cost</i>	50 000 €

5. SUPPORT TO COURSE DELIVERY

The delivery of blended learning courses described in Work Package 3 will be carried out according to Eumetcal standards and requirements, but outside the programme and under separate funding. This separation of funding allows a more flexible and cost-effective use of the training resources developed in the previous phases of the programme. The financial responsibility arising from the delivery of the courses shall be with the organising organisation/consortium. Eumetcal will not fund the delivery of the courses nor collect any registrations fees potentially connected to the courses.

The ESG will endorse the Eumetcal label to those courses that comply with the Eumetcal standards of quality and accessibility and follow the Eumetcal IPR requirements. The Eumetcal courses will be delivered by a member NMS or a consortium thereof using Eumetcal material and based on a commitment to Eumetcal requirements and standards with particular focus on criteria of quality, accessibility and cost-effectiveness of the course delivery.

NMSs will be fully responsible for the expenditure and revenue associated with holding the course, but they will not make a profit by delivering Eumetcal courses. The non-profit nature of Eumetcal courses is defined in the Eumetcal Intellectual Property Rights (IPR, see Annex VII). Eumetcal will promote courses to NMSs and provide support associated with the delivery of Eumetcal courses. The Eumetcal Courses will be designed by Eumetcal, who will also make sure that the delivered courses are compliant with Eumetcal requirements and standards and hence deserve the Eumetcal label.

Eumetcal will also be responsible for arranging that course attendees and NMS staff can access its resources. Eumetcal courses will adapt to the developed syllabus and can be existing packages or completely new packages composed by any member or participating NMS.

6. EUMETCAL BUDGET 2007-2012

The Eumetcal III Programme budget (see Table 1) will cover the expenses arising from the different Work Areas, Work Packages and Programme Management. The management cost covers salaries, social charges, travel and subsistence and office facilities for the five-year phase of the programme. The detailed division into work packages is subject to change following development in the project but is subject to reporting to, and approval of the ESG. The member contributions are also subject to change should any new members choose to join the programme.

Work Package	Title	5 years	Annual	2005	2006
WA 1	Training Development				
WP 1.1	Production of CAL Material	125 000 €	25 000 €	35 000 €	23 000 €
WP 1.2	Eumetcal Workshop	50 000 €	10 000 €	11 340 €	12 000 €
WA 2	Training Resource				
WP 2.1	Website and Servers	88 000 €	17 600 €	12 144 €	14 617 €
WP 2.2	intraLibrary and maintenance	62 000 €	12 400 €	28 433 €	26 033 €
WA 3	Training Delivery				
WP 3.1	Syllabus Development	25 000 €	5 000 €		
WA 4	Administration				
WP 4.1	Programme Management	50 000 €	10 000 €	20 000 €	20 000 €
WP 4.2	Training Support	180 000 €	36 000 €		36 000 €
WP 4.3	Liaison and Publicity	50 000 €	10 000 €	8 000 €	
Total		630 000 €	126 000 €	114 917 €	131 650 €
EUMETNET Contribution (75 % of total budget)		472 500 €	94 500 €	91 620 €	93 269 €
EUMETSAT Contribution (25% of total budget)		157 500 €	31 500 €	30 540 €	31 090 €
Total		630 000 €	126 000 €	122 160 €	124 359 €

Table 1: The Eumetcal Programme Budget for the five-year period 2007-2012 and comparison to 2005 and 2006

The annual fees per member NMS are illustrated in Annex V.

7. CONCLUSION

This proposal introduces the scope and envisaged activities of the next operational phase of the Eumetcal Programme, called Eumetcal III. The excellent results and positive experiences from earlier phases of the programme create a solid basis upon which the future phases of the programme will be founded.

The Eumetcal III programme will introduce a wider exploitation and continuing development and maintenance of existing Eumetcal training resources. The reducing volume of trainees (especially new weather forecasters), the increased requirements of the curriculum resulting from

the enhanced WMO/ICAO training documentation, and the particular demands of aviation forecaster standards resulting from the Single European Sky legislation, make training increasingly expensive. This is therefore an appropriate time for the creation of Eumetcal courses. The Eumetcal programme is responding to the growing need from the NMSs to provide cost-effective and high quality blended training arising from international agreements and suggesting a centralised approach that will distribute the work to members thus allowing more input and a wider view for the training development.

ANNEX I

EUMETCAL STEERING GROUP (ESG) TERMS OF REFERENCE

1 INTRODUCTION

This document contains the Terms of Reference for the Eumetcal Programme Steering Group, the activities of which will be performed during the period of the Programme. It covers the following aspects:

- Composition of the Eumetcal Steering Group (ESG);
- Terms of Reference;
- Rules of Procedure.

2 COMPOSITION OF THE STEERING GROUP

The Eumetcal Steering Group (ESG) will be formed of representatives from a Consortium of EUMETNET Member (Programme Support Members (PSM)) and other support entities (together called Programme Support Entities) and EUMETSAT.

The members will have a duty to represent the views of all members of Eumetcal – there will be allocation of countries to certain Steering Group members so that they must consult the countries ahead of the ESG meetings.

The following representatives shall participate to the Steering Group:

- a) The Programme Manager;
- b) The Eumetcal Training Support Officer;
- c) From the Programme Support Entities, at least four representatives;
- d) From EUMETSAT, two representatives;
- e) An external expert in the field of meteorology training or a representative from EUMETNET member states;
- f) A Chairperson, elected by the Steering Group;

A Vice-Chairperson and a Secretary will be elected from the Steering Group members.

Upon request other external experts, either from National Meteorological Services (NMSs) or other Organisations might be invited to support Steering Group activities on an ad hoc basis.

3 TERMS OF REFERENCE

The Steering Group will supervise the progress of the Eumetcal Programme and will provide guidelines to ensure that all its objectives are met and relevant, and that a proper coordination of technical, financial and managerial aspects is carried out. In that respect, the Steering Group shall

take decisions affecting the planning (schedule, delivery dates, milestones, etc.) of all deliverables and on any required adjustments to the allocation of funds.

The Steering Group shall assess the results of Reviews, endorse their recommendations or request modifications, and task the Programme Responsible Member to implement them.

The Steering Group shall assess the status and progress of Eumetcal activities on the basis of regular reports from the Programme Manager and documented user feedback.

For any review, the Steering Group shall approve the composition of Review Boards, which may include external experts proposed by the Steering Group and the Programme Responsible Member.

The Steering Group will seek to reach consensus when making decisions, as far as possible, especially for decisions with significant impacts on the resources. If this is not possible the chairman has the final say when there is disagreement.

4 RULES OF PROCEDURE

§1

The Steering Group will meet in ordinary sessions twice a year. Routine business will, as far as possible, be conducted via email.

§2

At least three weeks before the Steering Group meetings, the Programme Manager shall inform the Steering Group on the Programme Status, on the critical issues to be considered and on documents that may be subject to decisions. This report will form part of the regular reports to be issued for providing the Programme Responsible Member, the Cooperating Support Entities and EUMETNET Council with a clear visibility of the progress of the Programme.

§3

In case a member of the Steering Group is unable to attend a meeting, either she/he will nominate another member of the Steering Group to represent her/him, or the Programme Responsible Member, by default, will represent the missing member.

§4

During Steering Group meetings, the Programme Manager will report on Programme activities. If necessary, she/he will be supported by members of the Consortium.

§5

The Secretary will propose and prepare an agenda in consultation with the Programme Manager. He/she will prepare the minutes for the Steering Group meeting and will be responsible for writing the Minutes of meetings, including a record of actions and list of agreed decisions. The list of decisions will be sent to all members of the Steering Group within one week after the meeting. The Minutes will be distributed within three weeks and any comments from the members of the Steering Group shall be provided within one month from the reception of the minutes.

§6

In preparation of any formal Review, the Steering Group shall authorise the release of the relevant information package and shall take any necessary action to be performed in due time for the Review. To this aim, written procedures will be used as necessary (including electronic mail).

§7

The Steering Group may decide on any additional or detailed procedures to be set up for supervision and monitoring of the Eumetcal Operational Phase activities.

ANNEX II

EUMETCAL ADVISORY BOARD (EAB) TERMS OF REFERENCE

1 INTRODUCTION

This document contains the Terms of Reference for the Eumetcal Advisory Board, the activities of which will be performed during the three-year period of the Programme to end June 2007 and in the possible next programme phase. It covers the following aspects:

- Composition of the Eumetcal Advisory Board (EAB)
- Terms of Reference
- Rules of Procedure

It will be recalled that the activities of the Eumetcal Operational Programme are managed, on behalf of EUMETNET, by a Programme Manager and governed by the Eumetcal Steering Group.

2 COMPOSITION OF THE ADVISORY BOARD

The Eumetcal Advisory Board will comprise representatives from the Eumetcal Programme Members, other support entities, as invited, on a case by case basis, and EUMETSAT. At the first meeting it will elect a Chairperson with a term of office of 2 years.

The following representatives shall participate in Advisory Board meetings:

- a) The Programme Manager;
- b) Representatives from Eumetcal Programme Members;
- c) One representative from EUMETSAT;
- d) One representative from each Themed Resource Working Groups (TRWG) (these may be from b) above;
- e) External experts in the field of meteorology training or a Theme, from EUMETNET Member States; invited on a case by case basis

The Training Support Officer will act as Secretary of the Advisory Board.

3 TERMS OF REFERENCE

The Advisory Board will receive reports from the TRWGs and the Programme Manager and monitor the status and progress of ongoing activities.

On the basis of this monitoring activity, the Advisory Board may make recommendations to the Eumetcal Steering Group that it place actions on the TRWGs and/or the Programme Manager, or seek guidance from the Steering Group.

Advisory Board Members will assist the Training Support Officer in the collection of training resources from within their countries, and will act as national focal points for the Eumetcal Programme.

4 RULES OF PROCEDURE

§ 1

The Advisory Board will meet in ordinary sessions once per year. Routine business will, as far as possible, be conducted via email.

§2

At least three weeks before an Advisory Board meeting, the Programme Manager shall provide the Advisory Board with the latest report on the Programme status, and on critical issues that have to be considered, and on documents that may require a recommendation. This report will form part of the regular reporting cycle, and will be updated verbally to reflect the current status of the Programme at the meeting itself.

§3

The Training Support Officer, as Secretary to the Advisory Board, will propose meeting agendas, in consultation with the Advisory Board Chairman and the Programme Manager. He/she will also prepare the Minutes of Advisory Board meetings and will include a record of actions and a list of agreed recommendations. A draft list of recommendations will, as far as possible, be agreed at the end of each meeting and mailed to all members of the Advisory Board within one week. Once fully agreed, the Chairman will send a copy of the Recommendations for the attention of the Steering Group.

§4

Minutes of Advisory Board Meetings will be distributed to Members of the Board as soon as possible. Comments on these Minutes from Members shall be provided within one month of reception.

ANNEX III

THEMED RESOURCE WORKING GROUP (TRWG) TERMS OF REFERENCE

1 INTRODUCTION

This document contains the common Terms of Reference for Eumetcal Themed Resource Working Groups (TRWG). Assuming approval by EUMETNET, the TRWG activities will continue to, at least, December 2012.

The following aspects are addressed in this document:

- Composition of a TRWG;
- Terms of Reference;
- Rules of Procedure.

It will be recalled that the activities of the Eumetcal Operational Programme are managed, on behalf of EUMETNET, by a Programme Manager and governed by the Eumetcal Steering Group. A Eumetcal Advisory Board, also reporting to the Steering Group, will supervise the preparation and delivery of training resources produced by the TRWGs

2 COMPOSITION OF A TRWG

A TRWG will comprise participants from the Membership of Eumetcal, and other support entities and experts, proposed by these participants, and willing to accept the conditions of participation. As soon as possible after its establishment, TRWG participants will elect a Chairperson and a Secretary, with renewable terms of office, to be decided by the participants.

3 TERMS OF REFERENCE

The TRWG is established to create and deliver training resources focussing on specific topics or themes required by European NMSs, within the framework of Eumetcal. Emphasis will be placed on the creation of distance learning and computer aided learning resources (hereafter called “resources”). Before initiating the creation of resources, TRWGs will have followed a sequence of preparatory activities. Following positive recommendation from the Eumetcal Advisory Board (EAB), and financial approval and authorisation to proceed from the Eumetcal Steering Group (SG), the work package(s) to create the resources will commence.

The EAB will monitor the progress of TRWG activities, advising as necessary, through regular reports submitted by the TRWG Chairperson. The EAB will periodically provide an overall status report on TRWG activities to the SG. On the basis of its monitoring activity, the EAB may make requests for modifications to resource creation activities, informing the SG accordingly, and seeking its approval.

4 RULES OF PROCEDURE

§1

Each TRWG will meet in plenary sessions once a year. Routine business will, as far as possible, be conducted via email.

§2

At least two weeks before a TRWG plenary session the Chairperson will request that participants provide sub-reports on the progress and delivery of work packages, highlighting any critical issues requiring urgent attention.

§3

Draft Summary (bullet) Minutes from each plenary meeting, including any actions and recommendations, will, as far as possible, be agreed at the end of each meeting and emailed to all TRWG participants for any further comments within one week. Once finalised, the Chairman will send a copy of the Summary Minutes to the EAB. Comments on these Minutes by the EAB shall be provided, through its Chair, to the Chairperson of the TRWG (with a copy to the SG) within three weeks of reception.

§4

The Training Support Officer, as Secretary to the EAB, will keep fully abreast of the status of activities of each TRWG, and act as the primary point of contact with the Chairpersons of each TRWG outside of the reporting periods outlined above.

ANNEX IV

TRAINING SUPPORT OFFICER

The Training Support Officer will work under the authority of the Eumetcal Programme Manager, and the duties will include the following tasks:

1. Support the Programme Manager in the management and quality control of the Eumetcal Training Resource Library and resource creation tools;
2. Primary point of contact for and coordinator of all contributions to the Library;
3. Providing advice on the use of the Library;
4. Support the Programme Manager in the promotion of Library features to the National Meteorological Services (NMS) and to other training entities;
5. Arrange (together with other NMS) Eumetcal training workshops;
6. Coordinate Eumetcal on-line training sessions;
7. Organize the translation of Library resource material, on a case by case basis, and when offered free of charge by interested NMS;
8. Support the wider use of the Eumetcal training platform;
9. Seek out new training resources, useful links, etc. for the Library and to inform NMS accordingly via regular on-line Newsletters
10. Secretary to the Eumetcal Advisory Board
11. Assist NMSs with creation of training resources

ANNEX V

**ANNUAL EUMETCAL MEMBER CONTRIBUTIONS TO THE PROGRAMME FOR
THE PHASE 2007-2012**

Member Countries	GNI (M US\$) 2001-03*	GNI Scale (%) 2001-03	Annual Contribution 2007 and 2008** (€)
Austria	647 016	2,231	2 108,61 €
Belgium	793 114	2,735	2 584,74 €
Denmark	534 720	1,844	1 742,64 €
Finland	414 361	1,429	1 350,39 €
France	4 614 234	15,913	15 037,68 €
Germany	6 291 630	21,698	20 504,27 €
Greece	424 188	1,463	1 382,42 €
Hungary	188 262	0,649	613,54 €
Iceland	25 816	0,089	84,13 €
Ireland	314 699	1,085	1 025,60 €
Italy	3 716 057	12,815	12 110,54 €
Latvia	27 468	0,095	89,52 €
Luxembourg	61 922	0,214	201,80 €
Netherlands	1 299 766	4,482	4 235,91 €
Norway	581 262	2,005	1 894,32 €
Portugal	371 152	1,280	1 209,58 €
Spain	2 139 986	7,380	6 974,16 €
Sweden	760 156	2,622	2 477,33 €
Switzerland	898 305	3,098	2 927,55 €
UK	4 892 719	16,873	15 945,26 €
total (NMSs)	28 996 833	75,00	94 500 €
EUMETSAT		25,00	31 500 €
Grand Total			126 000 €

The above figures were calculated using the 2001-2003 GNI scale and represent the annual contributions for the years 2007 and 2008. These figures may vary slightly if any new Participating Members were to join the Programme.

* From 2009-2011 Members contributions will be revised according to the 2004-2006 GNI scale.

** As this Programme phase is expected to start on 1st July 2007, the contributions for 2007 should be equal to half of the above amounts.

ANNEX VI

**EUMETCAL PROGRAMME RESULTS FROM THE SECOND OPERATIONAL PHASE
(EUMETCAL II 2004-2007)**

Eumetcal Programme Activities and Active Members

Activity and Results	FMI	MF	DWD	INM	UKMO	Met Éireann	MSC	GRAHI	Total
MeteoCAL module: "Cyclogenesis in the Mediterranean"				I					9
MeteoCAL module: "Rapid Cyclogenesis"					I	I			
MeteoCAL module: "Vorticity"	I		I		I				
MeteoCAL module: "Verification of Continuous Variables"	I						I		
MeteoCAL module: "Verification of Categorical Forecasts"	I						I		
MeteoCAL module: "Verification of Probability Forecasts"	I						I		
Learning Module: "Radar Meteorology"	I		I					I	
MeteoCAL module: "The METAR Code"					I				
MeteoCAL module: "Rapidly Deepening Systems"					I	I			
Eumetcal intraLibrary Development					I				6
Eumetcal website and server maintenance		I							
Eumetcal mirror site and backup server maintenance					I				
First Eumetcal Workshop and Advisory Board Meeting Organisation			I						
Second Eumetcal Workshop and Advisory Board Meeting Organisation	I		I						
Eumetcal Programme Management	I								
Total	7	1	4	1	6	2	3	1	15

Table 2: *Eumetcal Activities and Results as distributed by active participating member NMSs*

Participating Country	First Workshop	Second Workshop
Australia (BoM)	1	1
Austria (ZAMG)	3	3
Bulgaria		1
COMET	2	
ECMWF	1	
EUMETSAT	7	4
Finland (FMI)	5	6
France (MF)	4	2
Georgia (MetGeorgia)		1
Germany	9	10
GRAHI	1	
Hungary		1
Iceland (IMO)	1	1
Ireland (Met Éireann)	1	1
Latvia (MetLat)		1
Lithuania (LHMS)	1	1
Macedonia (HMSM)	1	
Netherlands (KNMI)	1	1
Norway (Met.no)	2	2
Portugal (IM)	1	1
Romania (MetRo)		3
Spain (INM)	2	1
Sweden (SMHI)	1	3
UK (Met Office)	3	2
Ukraine		1
WMO	1	1
Total	48	48

Table 3: *Eumetcal Workshop participants by institution for the first two Eumetcal Workshops held in Langen in 2005 (First Workshop) and 2006 (Second Workshop)*

Web Usage Statistics

Statistics presented here are based on the daily and monthly averages for the period from end May 2005 to begin June 2006. Due to the nature of the Eumetcal programme there are currently

no reliable usage statistics before May 2005. This is a result of a lack of web analysis tools in the first phases of the programme. Usage statistics have since been acknowledged as extremely valuable to the programme.

Main website and server (hosted by Météo-France)

The main website has seen a steady increase in usage. Average monthly visits reached 5700 in 2005 but rose to around 12000 in the first half of 2006. Daily averages have consequently doubled from 150 to an average 300 visits per day in 2006. Unique visitors per month averaged 4000 in 2005 and 9500 in 2006.

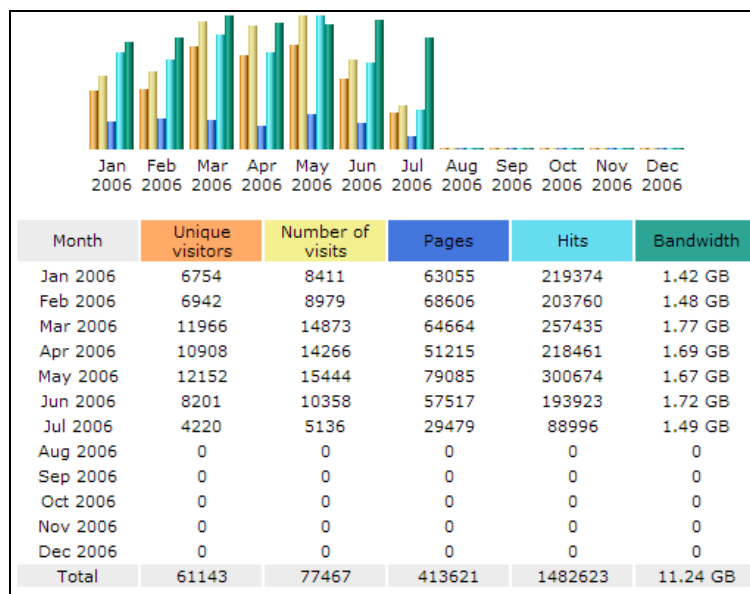


Figure 2: Eumetcal website usage statistics for the first half of 2006

The site currently has around 200000 hits per month. Usage in terms of visitors to the site peaked in May 2006 with 15444 visits and 12152 unique visitors with a daily average of 500 visits and 9700 hits per day. The average duration of visit on the website is 4 minutes. The site is mainly connected directly or through internet search engines and around 1.5 Gb of bandwidth is used monthly.

The intraLibrary login page is viewed approximately 2000 times per month. The Library has some 120 identified guest users and 20 Librarians and hosts 2432 learning object entries (26 July 2006).

Backup server and mirror site (hosted by the UK Met Office)

The backup server hosted by the UK Met Office is used less than the main website, but usage has slowly increased and peaked in March 2006 with 5109 visits per month (daily average 164

visits). The UK site has roughly half the hits and visits than that of the main website with an average of 120 visits per day and 3500 visits per month.

Summary by Month										
Month	Daily Avg				Monthly Totals					
	Hits	Files	Pages	Visits	Sites	KBytes	Visits	Pages	Files	Hits
Jul 2006	5600	2883	3189	138	1258	601304	2500	57419	51910	100816
Jun 2006	3493	1781	1737	133	2067	1284282	4019	52117	53447	104815
May 2006	3784	1726	1733	146	2172	1592583	4536	53747	53535	117304
Apr 2006	2820	1272	1278	125	1901	1035162	3776	38340	38169	84603
Mar 2006	5516	3905	2912	164	2171	5597397	5109	90280	121058	171000
Feb 2006	3943	3000	2068	135	1521	6854439	3799	57923	84015	110423
Jan 2006	2728	1801	1400	121	1276	1205198	3752	43418	55852	84596
Dec 2005	3256	2484	1803	106	1178	1245735	3287	55908	77010	100963
Nov 2005	4845	4267	2367	131	1496	4306692	3957	71010	128020	145370
Oct 2005	4392	3675	2269	106	1187	1228292	3302	70366	113941	136154
Sep 2005	2855	2218	1272	86	1115	1126612	2603	38173	66542	85677
Aug 2005	2840	2283	1382	81	946	851663	2540	42858	70795	88050
Totals						26929359	43180	671559	914294	1329771

Figure 3: Eumetcal UK backup website usage statistics from August 2005 to July 2006

The usage of Eumetcal internet resources is growing steadily as the programme has been developing new and innovative solutions to the meteorological community. The website is highly used and has valuable information of training in the field of meteorology.

ANNEX VII**THE INTELLECTUAL PROPERTY RIGHTS (IPR) FOR ALL MEMBERS OF THE
EUMETCAL PROGRAMME**

The intellectual property which all members of the Eumetcal programme bring to the programme will become transformed into a telematic form integrated with material from other partners during the project. The original material, in its original form, will remain the intellectual property of the partner (Originator). The integrated material, in telematic form, and any related IPRs (Hereafter referred to as “Programme Material”) are owned and protected by the Eumetcal Responsible Member (RM), without prejudice to the intellectual property rights for those parts of any Acquired Knowledge for which a single Originator can be identified.

Participating Members of the Eumetcal Programme shall be granted, without cost, a non-exclusive licence by the RM and if necessary by the Originators of any part of the Acquired Knowledge, so that they are free to exploit such Acquired Knowledge for all purposes agreed within the Programme Decision. When Acquired Knowledge is capable of industrial or commercial applications outside the scope of the Programme, the Participating Members shall set out the terms of use in the relevant Programme Decision. Members departing from the Programme shall only have rights to the Acquired Knowledge created during the period within which they contributed, unless otherwise agreed by the EUMETNET Council.

The Eumetcal Steering Group (ESG), a body representative of all the project members, has been established and will continue throughout the duration of the project. During this period the ESG will be responsible for deciding the conditions under which the Programme Material may be used. Recommendations from the ESG will be passed to the EUMETNET Council for endorsement. All project members will be free to use the Programme Material in the normal course of their business.

The Eumetcal Steering Group will be responsible for granting any permission for use of the Programme Material outside the consortium. All such decisions will, however, be passed to the EUMETNET Council for endorsement. Some such requests may come at an early stage enabling other bodies to make contributions to the construction of the Programme Material while other requests may come after the Programme Material is completed. A substantial contribution, in resources or funding, will be required from the external organisation and no EUMETNET funding can be used to support any such external organisations.

The Eumetcal Steering Group will be responsible for assuring the future exploitation of the Programme Material beyond the end of the funded part of the project.