

ECSN Quarterly Report April-June 2005

Prepared by the ECSN Manager and the Project Leaders

General remarks

The 10th ECSN Advisory Committee (EAC) Meeting has taken place in Copenhagen, Denmark, 8-10 June 2005. The ECSN Manager, Walter Kirchhofer, thanked the organizers of the Danish Meteorological Institute, especially Claus Kern-Hansen, for their invitation and for their kind hospitality. Again, it was an interesting and fruitful meeting, also with regard to new activities.

With the retirement of Volker Vent-Schmidt, DWD, the EAC has lost an engaged Delegate and Chairman. The EAC Members expressed their thanks for his active role he has played within ECSN.

As new Chairman of the EAC, Aryan van Engelen, KNMI, was unanimously elected.

The ECSN Manager reported on the current projects and new activities:

- a) European Climate Assessment & Dataset
- b) Generate Climate Monitoring Products
- c) ENSEMBLES

The proposal for a new project „High Resolution Temperature Climatology in Complex Terrain“ has been approved by the EUMETNET Council at its 24th Meeting in April 2005.

In order to create a realistic EUROGRID database of gridded climatological data covering Europe, a EUROGRID show-case study will be worked out first.

The first combined Conference of the European Meteorological Society together with the European Conference on Applied Climatology, EMS/ECAC, has taken place in Nice, 26-30 September 2004.

The combined Conference of EMS with the European Conference on Applied Meteorology, EMS/ECAM, will take place in Utrecht, 12-16 September 2005. This EMS/ECAM Conference will also contain a Climatology part.

About 500 abstracts have been submitted, 40 for ECAM, 100 for EMS Climatology and 360 for EMS as such.

The 5th ECSN Data Management Workshop will take place in De Bilt, Netherlands, 7-9 December 2005. The following 4 main topics are identified: Data Rescue (DARES), Databases, Gridding and UNIDART.

Volker Vent-Schmidt, DWD, has invited the ECSN Manager to an informal Consulting Meeting to Offenbach, 5-6 April 2005. In a sense of a preparatory approach for the EAC Meeting in Copenhagen, the status of the actual projects and the implementation of new projects activities have been discussed.

The ECSN Manager has taken part at the GCOS Regional Workshop for Eastern & Central Europe, Leipzig, Germany, 26-28 April 2005.

The Conference EMS/ECAC-2006 will take place in Ljubljana, in the Centre Cankarjev Dom, 3-7 September 2006.

The scientific part of the ECAC will again be managed by ECSN with the ECAC Advisory Board.

European Climate Assessment & Dataset (KNMI)

After the formal presentation of ECA&D at the ECAC in Nice, September 2004, the functionality and performance of the website has shown no problems. About 2000 page hits are counted every day at <http://eca.knmi.nl>, coming from visitors that download public available daily data as well as retrieving climatological analyses.

Currently, effort is taken to update the data series to be as accurate as possible. At ECA&D, synops are used to 'extend' the data series from the ECA&D participants. However, these synoptical messages are not validated, and have in general a lower quality compared to the validated data that come from the participants. In March 2005, each ECA&D participant, and the director of the NMHS's, received a letter from the ECA&D project leader, where it is asked for updates of the already available data series in ECA&D. Also for new elements (humidity, sunshine duration and snowdepth) to be added in ECA&D to enable climatological analyses for these new elements as well.

Together with the letter, as described above, the partners are asked to provide data to be used for the ENSEMBLES project, as well as data from other projects (EMULATE, data from the GCOS Synoptical Network, STARDEX). One of the goals of ENSEMBLES is to achieve a grid resolution of about 0.1°. ECA&D will serve as the infrastructure to hold the data that is needed for ENSEMBLES. ENSEMBLES will develop and produce

gridding techniques that will not be part of ECA&D.

The infrastructure of ECA&D is quite capable of handling these vast amounts of new data and stations. It became clear, however, that it is too laborious to process all data by hand (extracting the data in the right format and store it in the database). In the very near future, Web tools will be developed to support the process of handling and storing data. This will be available to the participants too.

One of the effects of a much larger density of data in ECA&D, is that the currently created maps will be quite unclear (too many analyses on the same map, plotted too close to each other). Therefore, the need is identified to introduce GIS-techniques with zooming-functionality, which enables retrieving detailed information at a regional level or even at the level of an individual station.

As a last remark, new elements introduced in ECA&D involves the development of new quality control procedures. Together with already available quality control procedures in ECA&D, finetuning of these procedures is a continuous process that will result in better quality of daily data over time.

ENSEMBLES (KNMI, MeteoSwiss)

In 2004, the European project ENSEMBLES has started. ENSEMBLES consists of 10 research themes, while each research theme is divided into several work packages. KNMI and MeteoSwiss co-operate in the work package that involves the development of a daily resolution gridded dataset for Europe. Two recently recruited researchers, namely Lisette Klok, KNMI, and Evelyn Zenklusen, MeteoSwiss, started in February 2005 with the collation, quality control and homogenization

of data which will be used for the gridding. The gridded datasets will include several climate variables, as minimum/maximum temperature, precipitation, air pressure and snow cover. The datasets will go back as far as station availability allows, 45 years or possibly even longer.

The resolution of the gridded datasets should be high enough to capture extreme weather events. Therefore the eventual grid resolution is chosen at 25km. The gridded datasets are going to be built on a dense network of daily station data. The data of the ECA&D project serves as a good start for this network. Daily series collated within several other national and international projects will also be included in the ENSEMBLES database, for instance datasets of the EU FP5 projects STARDEX and EMULATE. Historical data of about 50 stations from the GCOS Surface Network have just been included in the database. ECA&D partners have been requested to send additional station series for the gridding project. So far, about 50% of the partners have responded positively to this letter that was sent to all ECA&D partners in March this year. However, most of these series have not yet been sent. So far, nearly 700 European stations have been collected in the ENSEMBLES database. Since 4200 stations would be needed for a station density of one station per 2500 km², many more data have to be collected!

At this stage, the development of the gridded datasets focuses therefore on the collation of more daily series from NMSs. KNMI and MeteoSwiss are investigating several methods for the quality control procedure to be applied to the ENSEMBLES database, and testing several methods to detect inhomogeneities in the series. In September this year, the British ENSEMBLES partners (Oxford University and CRU) will start the development and evaluation of several gridding me-

thods. The daily gridded datasets should be produced by the end of 2007, and will be accompanied by estimates of data uncertainty.

At the EAC Meeting the question of data owners has been discussed. In order to prevent a chaos in European data policy, the Delegates have decided that the ECA&D data policy has also to be applied to the ENSEMBLES data. That is to say, the National Weather Services remain the data owners, also for the gridded ENSEMBLES data sets.

Generate Climate Monitoring Products (DWD)

The project Generate Climate Monitoring Products, which was completed early in 2004, is continued since then in a quasi operational stage. The climate monitoring products distributed under GCMP are accessible through www.gcmp.dwd.de. The number of participating European NMS's are still going up, presently 18 Services are taking part. It is envisaged to extend the participating countries to the WMO Region VI.

The efforts continue to enhance the participation and co-operation, leading to additional monitoring products on the GCMP Web site.

It was decided to continue with this platform in a quasi operational mode until the new platform of EuroCLIS with a high sophisticated system will take over the distribution of climate monitoring products at national and European levels on a routine basis.

Alpine Tmap (ZAMG)

Recently the ECSN Climate Atlas of Europe, led by Météo-France, has been made available a CD-ROM, providing monthly normals and additional statistical information for selected parameters. In the Atlas project proposal it was stated that the Atlas will be made available without maps. Maps could be added at a later stage when the GIS project reaches a conclusion.

In the meantime the Austrian Meteorological Institute, together with other ECSN Members, has taken the initiative and prepared a draft proposal for a new EUMETNET-ECSN project "High Resolution Temperature Climatology in Complex Terrain - demonstrated in the test area Greater Alpine Region (GAR)". The proposed project will provide a high quality data product for a special European region based on the experiences and knowledge of the involved countries. However the results and findings can be generalised and transferred to other European countries with a complex orography and therefore with sub-grid scale problems in spatial interpolation. That is to say, the results and the findings can also be used and applied in a new EUROGRID project.

The Members of the ECSN Advisory Committee support this project initiative with the following amendments:

- The time table should be enlarged to two years;
- The computation period should be 1971-2000, this in correspondence with the ECSN Climate Atlas of Europe.
- It should be stated that the "Alpine Tmap" project has to be synchronized with the planned project EUROGRID.

The project proposal „Alpine Tmap“ has been approved by the EUMETNET Council at its 24th Meeting in April 2005. ZAMG will act as Respon-

sible Member, with Dr. Ingeborg Auer as project leader.

Taking into account the comments of the ECSN Advisory Committee, the proposed project has a 2-year time-table, but it will compromise on the computation period by splitting the time-frames into two separate steps. Firstly 1961-1990, which is the WMO period and has optimised network density, and secondly 1971-2000, the „modern period“ which endorses the Climate Atlas of Europe, but which has problems of the data availability after 1995. In this way, the two steps will include regionalisation and vertical gradients with full network density, with a projection of the 1961-1990 findings to 1971-2000.

The main deliverable will be a mean monthly temperature field in a 1km resolution. In addition to its value as a classical state of the art climate product, the results will serve as direct, and so far not existing, basic data input for a large field of applications in related climate-sensitive research areas.

ZAMG will provide computer resources and permanent staff to handle the operational activities. Two workshops will be organized in order to strengthen the collaboration of European Weather Services: the first one after the phase of data collection to direct the follow-up activities, and the second one during the evaluation period. It should be noted that all ECSN Members should get an invitation for these two workshops.

At present the proposal of ZAMG is, to proceed with the real work as foreseen, but to wait for the formal contract with ZAMG as Responsible Member for the change of EUMETNET in an EIG, which could happen with 1 January 2006.

Dr. Walter Kirchhofer
MeteoSwiss