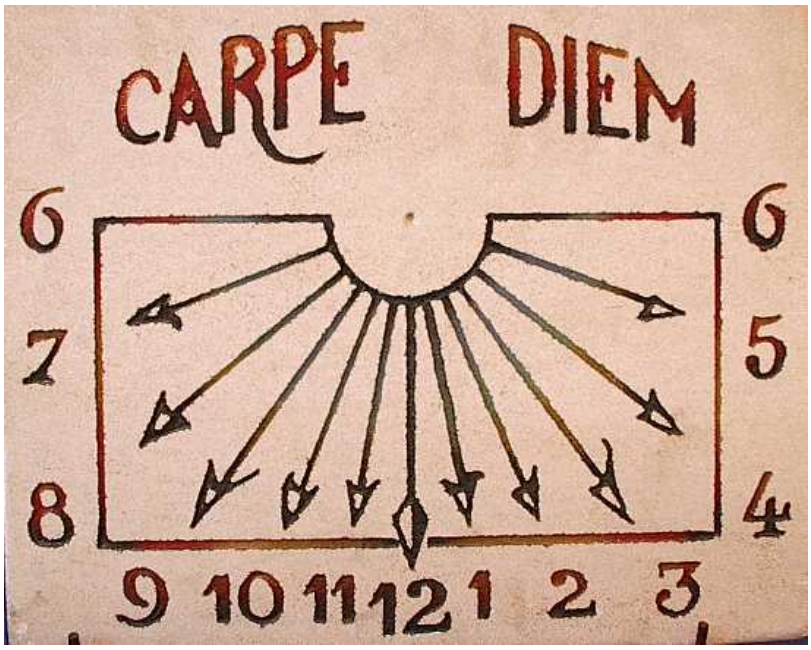
CARPE DIEM

Critical **A**ssessment of available **R**adar **P**recipitation **E**stimation techniques
and
Development of **I**nnovative approaches for **E**nvironmental **M**anagement



Contract N° EVG1-CT-2001-00045

5th Meeting
DUBLIN – 15-16 December 2003

MINUTES

AGENDA

15 December 2003

09:00 – 09:30	Welcome address	ARPA – SMR UCD
09:30 – 10:30	***WP1 – Project Management*** – *FIRST SESSION*	ARPA – SMR All CARPE DIEM partners
10:30 – 11:00	Coffee Break	
AREA 1 – Data assimilation and NWP improvements *chair by Nils Gustafsson*		
11:00 - 12:30	WP 2 EXTRACTION OF INFORMATION FROM DOPPLER WINDS WP 3 DATA ASSIMILATION	SMHI ARPA-SMR UESSEX FMI UBARCELONA
12:30 – 14:00	LUNCH	
14:00 – 14:30	WP 4 ASSESSMENT OF NWP MODEL UNCERTAINTY INCLUDING MODELS ERRORS WP 5 ASSESSMENT OF IMPROVEMENTS IN NWP	SMHI PROGEA ARPA SMR ISAC-CNR
14:30 – 15:00	Discussion among partners on AREA 1 status-of-the-action	
AREA 2 – Improve radar products by using NWP results *chair by Madhu Chandra*		
15:00 – 15:30	WP 6 ANOMALOUS PROPAGATION	UESSEX UBARCELONA
15:30 – 16:00	WP 8 USE OF POLARIMETRIC RADAR DATA FOR IMPROVING THE RADAR RAIN ESTIMATES	UESSEX DLR
16:00 – 16:30	Coffee break	
16:30 – 17:30	WP 7 ADVANCED SURFACE RADAR-BASED RAINFALL ESTIMATE	FMI
17:30 – 18:00	Discussion among partners on AREA 2 status-of-the-action	
	DINNER	

16 December 2003

AREA 3 – Flood forecasting *chair by Ezio Todini*		
09:00 – 09:45	WP 9 ASSESSMENT OF THE BIAS, SPATIAL PATTERN AND TEMPORAL VARIABILITY OF ERRORS IN THE DIFFERENT SOURCES OF AREAL PRECIPITATION ESTIMATES	SMHI PROGEA NUID ISAC-CNR
09:45 – 10:30	WP 10 OPTIMAL USE OF RADAR, NWP AND RAINGAUGE DATA IN PRECIPITATION FORECASTS FOR IMPROVING FLOOD FORECASTS IN URBAN AND RURAL CATCHMENTS	PROGEA SMHI NUID ARPA-SMR
10:30 – 11:00	Coffee Break	
11:00 – 11:30	WP11 – END-USERS' LEVEL-OF SERVICE REQUIREMENTS	NUID ARPA – SMR SMHI FMI UBARCELONA
11:30 – 12:30	*WP 1- Project Management*	ARPA – SMR All CARPE DIEM partners
12:30 – 14:00	LUNCH	
14:00 – 16:00	*WP1 – Project Management*	ARPA – SMR All CARPE DIEM partners
16:00 (aprox.)	End of meeting	

CARPE DIEM – 5th Meeting – PARTECIPANT LIST

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Presentation shall be made available on the project's web site.
http://carpediem.ub.es

INTRODUCTORY PRESENTATIONS
Michael Bruen, Nui, University college of Dublin, Dublin, Ireland
Michael Bruen, as a local organiser, gives a short introduction and welcome address speech.

WP 1 – Project Management
Pier Paolo Alberoni, ARPA.SMR, Bologna, Italy
According with the adopted agenda the following topics have been discussed:

- Review of the TSC report
- Review of the Prof. Sempere Torres report
- Status of the project
- 2nd Year report – Cost statement
- E-TIP
- Organisation of the Final Workshop
- Possible follow-up proposal

1 – Review of the TSC report
According with the project timetable a second meeting of the TSC was carried out during the mid-term project meeting. A report that contains TCS view of the actual project state was prepared and it is reviewed during this meeting. Shortly we can highlight here that "TSC acknowledges the good progress reported in the individual module" . A discussion about main TSC comments have take place with the participation of all project partners. Further the TSC strongly recommended that education and training of the end users and decision makers can play an important role, this suggestion could be considered as a point for the next project workshop.

2 – Review of the Prof. Sempere Torres report
Prof. Daniel Sempere Torres, from the UPC Barcelona, was invited as an external evaluator at the midterm meeting and at the first project workshop. As part of his tasks he have prepared and delivered to the Commission Project Officer an assessment report on the project status. This report was deeply analysed and discussed during the WP 1 session. The report underline that: "The advance of the activities and workpackages follows what has been proposed on the project plan and, from what it has been seen, there is not any significant danger for the advancement of the project. From what has been presented the deliverables of the project will be reached without significant delay." The report of Prof. Sempere Torres give also a number of relevant suggestion to improve more the objects of CARPE DIEM.

3 – Status of the project
According with the time-table the end of the second year of the project is approaching and we need to focus our work in the next months on the reporting activity. A general survey of CARPE DIEM shows that the project is well in track except only part of the work of WP8. Some workpackages have anticipated the work, one have reshuffle its time-plan and few problems have delayed few workpackages.

Most of the project deliverables have been delivered in time, as anticipated in the previous Management Reports.

No particular problem have been reported during the last six months period. The only exception, as stated before, is part of WP8. This point is discussed later in the WP8 session discussion.

At the meeting was present Dr. Thomas Börner, from DLR (partner 3). He have informed the project partners and the project coordinator that he have substitute Prof. Chandra as DLR responsible for the project. As a consequence of this the scientific coordinator of Area 2 is temporally cover by the project coordinator.

4 – 2nd Year Report – Cost Statement
At the end of the project year a complete and exhaustive report is required together with the Cost statement forms. These are essential contributions for the evaluation of the project done by the Commission and the subsequent financial contribution. We want to stress here about the necessity to prepare a complete report and deliver it to the Commission within the end of February.

The report is composed of three sections and include, further, a draft of the Technological Implementation Plan (T.I.P.) and cost statements

The Periodic Report provides information on the progress made in the project and for the EESD Programme has a periodicity of 12 months.

SECTION 1, corresponding to the Management Report, covers the last 6 months or 12 months of the reporting period, depending on what stated in Annex to the Description of Work.
In order to fill this section each partner shall provide to the coordinators, within the following deadline, the information to fill the financial and man-months tables.

Reporting period :			01/07/03	31/12/03
Partner	Partner name			
Comparison between planned and used resources				
	Man Power		**Financial Resources**	
WP	**U**	**P**	**U**	**P**
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

SECTION 2 contains an executive summary describing the main results achieved in the project during the reporting project. This summary is to be used to inform interested parties including policy makers and public authorities about the results of the project and should be publishable by the Commission, i.e. on CORDIS.

Each area coordinator should provide to the coordinator a short description (1 page) of the objectives, achievements, socio-economic relevance and policy implications and conclusions about their area or responsability.

Each partner should provide to the coordinator a complete list of their pubblications[1], in the format specified by the following tables.

Peer Reviewed Articles:

Authors	Date	Title	Journal	Reference

Non refereed literature:

Authors / Editors	Date	Title	Event	Reference	Type[2]

Others: (Patents, CD ROM's, videos,…)

Planning of future publications: (type, date, contents, …)

[1] Two copies of publications issued during reporting period should be annexed to the report, specific cases should be agreed by the Project Officer

[2] Type: Abstract, Newsletter, Oral Presentation, Paper, Poster, Proceedings, Report, Thesis

SECTION 3 is dedicated to the progress made, organised per work package. The individual contributions of each partner should be described. This will give an opportunity to closely follow the progress made in each work package and to inform all the partners of the overall progress of the project.
This section is organised on a Workpackage base, this means that for each WP a complete description should be provided within the following schema:

- Objectives
- Methodology and scientific achievements related to Work Packages including contribution from partners
- Socio-economic relevance and policy implication
- Discussion and conclusion
- Plan and objectives for the next period

Each workpackage leader should provide to the coordinators a complete description of the correspondent WP before the end of January.

A complete draft of the annual report should be ready and disseminate to the partnership, for a final check, within the 10 February and the final version shall be delivered to the Scientific Officer within the 20 February.

A complete timetable for the preparation of the Annual Report is following:

ACTION	RESPONSIBLE	At who	Deadline
Section 2 Description of the area	Area Coordinator	Project coordinator	End of January
Section 2 Information about Project pubblication	Each partner	Project Coordinator	End of January
SECTION 3 Complete description of each WP	WP Leader	Project Coordinator	End of January
Cost Statement	Each Partner	Project Coordinator	End of January – First week of February
Annual Report Draft version	Project Coordinator	Partners	10 February
Comments on the Draft version	Partners	Project coordinator	15 February
Annual Report Final Version	Project Coordinator	Scientific Officer	20-25 February
Cost Statement	Project Coordinator	Scientific Officer	20-25 February

5 – e-TIP
Together with the annual report a draft of the Technological Implementation Plan should be delivered to the Commission.

According with the instruction sent by the Scientific Officer the T.I.P. should by provided in e-format. A specific web site has been prepared by the Commission to support project teams.

http://etip.cordis.lu/

An entry in the Commission database for the project has been prepared by the Coordinator, as well as a login for each different partner, the following table report user-id and password for each partner and for the project as a whole.

Partner	User –id	Passwd
Project	Carpediem	carpediem
Progea	progea	progea
Dlr	Dlr_cd	Dlr_cd
Smhi	Smhi_cd	Smhi_cd
Fmi	fmi	Fmi
University of Essex	Uessex	uessex
University of Barcelona	Ubarcelona	Ubarcelona
Isac	isac	Isac
NUID	nuid	Nuid

Each partner is committed to verify the information provided for the contact person for their institution and to fill the information for their results.

The draft version of the TIP shall be delivered together with the annual report.

The PowerPoint presentation prepared from the Commission to present the TIP is available on the project web site.

6 – Organisation of the Final Workshop
A discussion about the organisation of the next project workshop have take place. A number of possible alternatives have been exanimate with regards the TSC suggestion and the result of the first project workshop. The possible alternatives exanimate are:

- Put the final workshop within the ERAD 2004 conference (Sept. 6-10 2004)
- Insert the final workshop with the EGS Plinius – topical conference on Mediterranean storms. Possible dates mid-oct 2004 (17-24).
- Organize it in Bologna, possible period November.

As an external point there a Prof. Todini suggests to organise the second end-users project workshop, again, jointly with the project MUSIC and with the project MANTISSA.

After a discussion, the project partners agree to try to organise the workshop together with the other two EU projects. A possible period is mid of june 2004 in Helsinki (Finland) during the 6th project meeting.

Further, in order to address the request from the end-users and the suggestion from TSC we will explore the possibility to organise a radar-risks management school, which should be held in Bologna in November 2004 during the final project meeting.

7 – Possible follow-up proposal
A discussion about a possible follow-up proposal have take place.

AREA 1 – Data assimilation and NWP improvements
Chair by Magnus Lindskog on behalf of Nils Gustafsson – SMHI

WP 2 – Extraction Of Information From Doppler Winds
Günther Haase, SMHI, Norrkoiping, Sweden
Gunther Haase present the new methodology developed to dealiasing Doppler radar wind data. Briefly the aliased data are projected over a torus where they appear as continuous, then they are projected back to taking into account the right Nyquist interval. A number of cases was presented using data from the Vantaa (Fin) and Hemse (S) radars. This technology seems to be very promising in a quasi uniform wind situation, further no extra information are needed to produce da-aliased data. Some work is need in the next period in order to: validate the new de-aliasing algorithm for convective precipitation events, generate de-aliased superobservations and to prepare a real-time application.

Yong Kheng Goh, University of Essex, Colchester, United Kingdom
Yong Kheng Goh present the update situation of DARWin (**D**oppler **A**nalysis and **R**etrieval of **W**ind **In**formation). This software is now ready to read SMR data (Bologna & Gattatico), convert data from radar grid point to a common cartesian grid place in the Dual-Doppler area, produce graphic visualisation both 2-D

(PPI, RHI, VAD) and 3-D (Velocity vectors), retrieve the dual Doppler wind and save the fields in ASCII format.
Some case studies have been presented.

WP 3 – Data Assimilation

Miquel Picanyol, University of Barcelona, Barcelona Spain
A presentation of the some results from the IUA data assimilation scheme used have been done. Major conclusion are: the best results occur in 3-hour frequency assimilation cycle, IAU tends to overestimate precipitation, 3-hour nudging assimilation minimizes the total precipitation RMSE, RMSE severely penalizes mislocation errors and other verification methods could be applied. [Ebert & McBride, 2000].

Magnus Lindskog, SMHI, Norrkoping, Sweden
Magnus Lindskog Briefly recall the timetable of the intercomparison experiment following the Bologna meeting. The summary is available on the project web site.

Francesco Boccanera, ARPA-SMR, Bologna, Italy
A presentation of the activities carried out in framework of the intercomparison experiment was done. The non-hydrostatic model LM have been used on the MAP IOPs 14 and 15 both in normal and in the nudging-based assimilation cycle. Major result are:

IOP 14

- The run with data assimilation provides an improvement of precipitation forecast over North-Western Italy (when compared to the control run), although a maximum not observed is also predicted.
- The nudging assimilation scheme has a negligible impact on the forecast of temperature and wind fields

IOP 15

- The run with data assimilation has a non-negligible impact on the forecast of precipitation, but does not bring a substantial improvement.
- The use of the nudging assimilation scheme does not have an appreciable impact on the forecast of temperature fields; on the other hand, it allows the generation of different structures in terms of wind forecast.

WP 4: Assessment of Nwp Model Uncertainty Including Models Errors

Sara Riccardo, PROGEA, Bologna, Italy
First results on the use of Kalman filtering (KF) and Maximum Likelihood (ML) approach, as suggested by Dee, for Hirlam data assimilation have been presented. The main idea is the estimation of innovation and background error covariances. A set of algorithm ML to estimate covariance parameters have been preparred and tested over some types of observations (es. wind and temperature). In the future the work will address the following topics: application for other observations innovation, use algorithm for each time step analysis, aplication of covariance information in kalman filter.

WP 5 Assessment of Improvements in NWP

Pier Paolo Alberoni, ARPA-SMR, Bologna, Italy
According with the intercomparison experiment plan the MAP IOPS 14 and 15 have been exanimate and presented. The VSRF chain have been presented based on the coupling between LAPS and LM. First results of this chain, tested on the MAP IOPs 14 and 15 have been presented.

***AREA 2 – Improve radar products by using NWP results* – Thomas Börner, DLR**

WP 6 – Anomalous Propagation

David, Bebbington, University of Essex, Colchester, United Kingdom
General presentation of the status of the software application. Some cases of anomalous propagation occurred in the Catalunya have been presented.

WP 7 – Advanced surface radar-based rainfall estimate

Heikki Pohjola, FMI, Helsinki Finland
An update of workpackage was given. A number of event was presented.

WP 8 – Use of polarimetric radar data for improving the radar rain estimates

Thomas Börner, DLR, Wessling, Germany

Thomas Börner introduce itself as a new project responsible for DLR. Since some problem still remain with the POLIRAD system a discussion on what could be done within this project wp was done. DLR will provide an update plan of its activities for recover the problems occurred during the first two project years within the mid of january 2004.

***AREA 3 – Flood forecasting* – Todini Ezio, PROGEA**

WP 9 – Assessment of the bias, spatial pattern and temporal variability of errors in the different sources of areal precipitation estimates

Günter Haase, SMHI, Norrkoping, Sweden

Günter Haase informs that Barbro Johansson will not longer involved in CARPE DIEM and that Jonas Olsson take the responsibility of wp9 for SMHI.
A comparison between rainfall field estimated by radar, gauge and forecasted by NWP was presented a complete report is available in the project deliverables section of the web site.

Vincenzo Levizzani, ISAC-CNR, Bologna, Italy

A presentation on the applications of a rainfall estimation technique based on PMW and IR satellite data: assessment of reliability of instantaneous rain rate maps in the Mediterranean was given. Shortly a case study based on the Algerian flood (9-10 November 2001) have been discussed highlighting the peculiarity on the RU and comparing the results of this technique with the TRRM dataset.

WP 9 – Assessment of the bias, spatial pattern and temporal variability of errors in the different sources of areal precipitation estimates

WP 10 – Optimal use of radar, nwp and raingauge data in precipitation forecasts for improving flood forecasts in urban and rural catchments

Michael Bruen, NUID, Dublin, Ireland

A single presentation covering WPs 9 and 10 was given by Michael Bruen. The TOPKAPI model (provided by the University of Bologna) have been installed at NUID and it was calibrated and is running over the datat provided for the project.

WP 11 – End-users' level-of service requirements

Michael Bruen, NUID, Dublin, Ireland

Michael Bruen present a report, produced with Prof. J.C.I. Dooge, which summarize the results of the 1st project workshop, held in Neuss Germany on the 27th 28th May 2003. the report is available in the project web site. A discussion over the points raised up during the workshop have been done.

Next Meetings

The partners have decided the following meeting timetable

MEETING	PLACE	DATE
6th meeting	Helsinki, Finland (tentative)	Together with the 2nd workshop, mid of june 2004
7th meeting	Bologna, Italy	Together with the school, November 2004