

Critical Assessment of available Radar Precipitations Estimation techniques and Development of Innovative approaches for Environment Management

CARPE DIEM (EVG1-CT-2001-0045)

**Report of external scientific evaluator on behalf of the EC
Meeting held on 26-27 May 2003**

This report has been written from the impressions the evaluator has got during the CARPE DIEM meeting, held at NEUSS on 26-27 May 2003 (mid-term progress meeting and joint workshop CARPE DIEM-MUSIC), and it intends to provide external scientific recommendations as requested by the EC.

1. OVERALL IMPRESSION

The present project is a very ambitious and complex one, aiming to deal with the whole chain of the hydrometeorological forecasting issues: from the meteorological techniques of forecasting, passing through the radar methodologies for precipitation estimation and up to the hydrological modeling required to use them for flood forecasting.

As it is a very complex subject, the project has been built in a pragmatic way, and it is focused on some selected aspects that have been identified as the key problems of this complex chain. So some subjects are covered in detail, some are just identified and others are not studied on the project.

These peculiarities lead to some challenges to be faced by the project.

2. MANAGEMENT

The project seems to be excellently coordinated and the management structure presents outstanding features.

The project management is divided into the main 3 working Areas: meteorology, radar and hydrology; with a head of area taking care of the specificities of each one. Additionally, there is an external Technical Scientific Committee, composed by outstanding key scientist on the 3 areas covered by the project (Andrea Rossa, Dusan Zrnica and Paolo Burlando) that are supporting the coordinator and the heads of area to lead the advancements of the project and to solve the on-road problems.

These two great key points are crucial to ensure the successful coordination of this complex project.

During the progress meeting the management issues have been reduced at the minimum expression and the majority of time has been devoted to discussion about the work in progress, showing that the coordination is effective and efficient.

Finally the remarkable friendly atmosphere between partners is also a key point to ensure that the integration that is currently in progress will be successfully reached.

3. ADVANCEMENT

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.

4. STATUS ASSESSMENT

POINT	PRESENT STATUS	COMMENT
Overall impression	Good	Over the mean
Coordination	Excellent	Outstanding
Advancement	On the plan	No significant dangers
Deliverables	On the plan	Not significant delays
Relation among partners	Very good	Over the mean
Integration different groups	Actions planned	To be improved
End-users oriented results	End users identified	Still low integration in the project
Scientific results	In progress	High quality publications to be promoted
Applicability of the results	In progress	To be improved

5. CHALLENGES TO BE FACED

By construction, the project is somehow fragmented, and there is not a clear continuity/integration between all the tasks of the project, which in some cases seem just parts of a wider problem. This lead to the potential danger of having several tasks to be pushed in parallel, in independent ways, and to the requirement of an extra effort to integrate the work of the partners.

Given this complexity, there are some partners who could experience serious difficulties to fully understand what the others are doing and follow their advancements (specially those working on aspects that are in the extremes of the chain). Interaction and discussion should be promoted as much as possible.

The relevance of the selected working lines is not homogeneous, some of the selected tasks are less crucial than others, and the degree of advancement is also very diverse from task to task.

There is not a clear plan to provide applicability to the developments of the project (probably

because it's not a project directly oriented to the key action, but to the general program), however the project should promote that all the partners address their developments to obtain results that could be useful to the other partners or to end-users.

In front of these challenges, most of them common to any ambitious EC projects, the present one has proposed some original ideas to deal with them, suggesting an interesting management structure and also suggesting very nice actions to face these challenges. However the coordinator and the head of areas should be vigilant to lead the ensemble of the partners to correctly face these challenges.

6. SUGGESTIONS

There are several actions currently in progress that could help to significantly advance on the project. I suggest trying to stress these actions should and even put them among the top priorities of the project

The realization of a common intercomparison between the 3 groups working on NWP, comparing the 3 different tools proposed in the project (hydrostatic/non hydrostatic/with(out) assimilation) in a common location and common events is ESSENTIAL. This can be a key action to crucially integrate the results of the project, at least in Area I.

I suggest trying to give as much relevance as possible to the external experts and end-users, and try to encourage them to help the partners to promote interaction and integration of their research results.

A major advancement could be reached if the hydrological applications could take into account all the proposed improvements on the precipitation estimations, and not merely deal with raw radar data. It would be crucial if they could be used to assess their utility in improving the QPE in real time.

Identify the developments that can be potentially used and stress them on the project looking for at least a verification or pilote implementation. The operational agencies of the project should be able to test/verify in their operational environments the developments of the project. Specially, the PVR identification and correction algorithm, the anaprop identification methodology and the NWP prediction, could be significantly improved if verification in operational framework is provided.

Identify the gaps that have been not studied during the project and offer them as a list of interesting objectives to undertake in the future.

In the measure of the possible, ask the two hydrological teams to use their models on the data of the others, and cross-verify the results of the colleagues. Even if the models are not perfectly suited for this transposition, very interesting conclusions could be derived from this effort.

Try to organize the next workshop really oriented to discussion and technical in depth scientific expositions, to make easier the comprehension of the different partners between themselves. Avoid the reiteration on explaining the different WP and go to the discussion of the results and of their application.

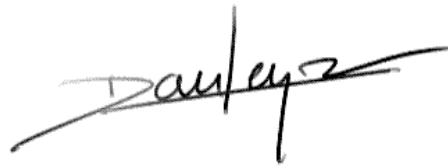
7. CONCLUSION

The project is ambitious and complex. However the high quality of partners and the outstanding management structure offers a good guarantee for a successful project.

There are no major dangers or delays on the deliverables to be worried for.

The advancements currently in progress could be seriously improved if an extra effort to increase interaction and integration among partners, and to provide applicability to the results is promoted (there is still enough time to succeed in it). Some suggestions have been proposed in this sense.

As conclusion, the project is advancing properly and it has strong potential to deliver noticeable results.



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