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14. ABSTRACT

The Final Proceedings for European Upper Atmosphere Server DIAS - Final Conference, 19 May 2006 - 19 May 2006
Specification and forecasting of the ionosphere over Europe: infrastructure and development of services
- State of the art survey
- Users' needs survey
- Development of the added value products and services
- Development of the technological system (DIAS server)

Commercial exploitation of ionospheric services
- Policies for the effective exploitation of DIAS products and services
- DIAS joint venture

Feedback from the users
- Scientific and engineering simulation of usage of the DIAS system
- Round table discussion

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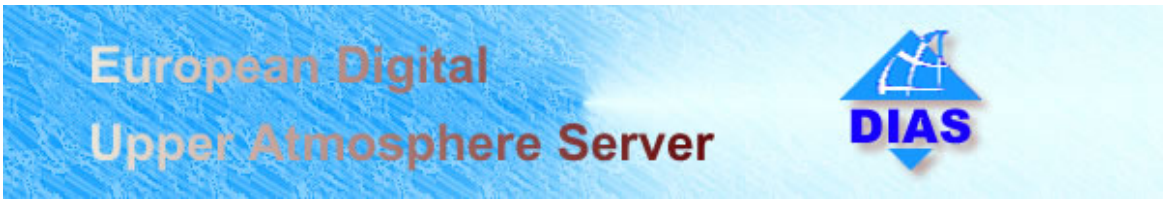

DIAS D6.8
Report on the Final Conference

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1. Introduction

The DIAS project is a collaborative venture funded by the European Commission eContent Programme. Its objectives are (1) to develop a pan-European network of stations for monitoring the state of the upper atmosphere in real-time, and for collecting historical records of such data, (2) to develop a new digital server for managing and distributing this data, and (3) to develop and promote the generation of new added-value products based on this raw data to Europe and worldwide markets.

The DIAS system is considered to be the only European service provider to offer radio propagation services based on European funding, infrastructure and know-how. Moreover, there are several points that strength the DIAS system in worldwide perspective. These points could be summarized as follows:

- DIAS is a new service
- There are many users of the demo server
- DIAS produces European maps of ionospheric parameters in time resolution and accuracy not available elsewhere
- DIAS offers real-time ionograms produced simultaneously from the most European operating ionospheric stations with autoscaling results
- DIAS provides the estimated Effective Sunspot Number for the European Region, not available elsewhere
- The DIAS system can be easily updated to incorporate new datasets, new user requirements, technology developments etc., characteristics that can be exploited in future expansion and development of DIAS
- DIAS can be applied in other regions of the world where there is a business case

As DIAS project is approaching the end of the EC funding, which officially finishes at the end of May 2006, the DIAS system is fully developed and many possibilities for the commercial exploitation of DIAS products and services have been investigated. The products and services offered by DIAS are of potential interest to a range of users with interests in HF communications, ionospheric studies and other systems that are affected by the evolution and development of solar-terrestrial events. The DIAS potential top users are considered to be in the areas of defence communications and radar planning (including military defence, civil defence and national public agencies), and communications for civilian airlines and broadcasting. The DIAS partners intend to continue the full operation of the system and the promotion of DIAS products and services on a commercial basis.

At this critical point, the DIAS Final Conference was organised as the top DIAS event, aiming to bring together data providers and users from large institutions and companies. The DIAS Final Conference represented a unique opportunity to demonstrate and test all products and services released by DIAS and to express the users' needs, opinions and comments, as well as to make direct contact with the most important DIAS potential users.

The DIAS Final Conference was held in Rome, Italy on 18 - 19 May, 2006 and was organised by the Istituto Nazionale di Geofisica e Vulcanologia (INGV), Rome, Italy.

In general, the DIAS Final Conference was divided into two thematic meetings. During the first day (18 May 2006) a *technical meeting* was held at the Conference Hall of the Istituto Nazionale di Geofisica e Vulcanologia in Rome focused on the general overview of scientific and technical tools adopted by the DIAS system, while during the second day (19 May 2006), a *users' meeting* was held at the Conference Hall of the Hotel Forum in Rome. This meeting was dedicated to the demonstration of the DIAS system in operation and to the future commercial exploitation of DIAS services. The meeting was closed with a fruitful open discussion among DIAS data and model providers, experts and potential customers who were attending the meeting.

In the following sections, the detailed Conference Programme, as well as a summary of the technical and the users' meetings are presented. The list of participants is also provided as Annex I.

The DIAS Final Conference was sponsored by the European Office of Aerospace Research and Development of the USAF (EOARD) and, in this report, DIAS partners would like to acknowledge this contribution for the success of the DIAS Final Conference.

2. Summary of the technical meeting (18 May 2006)

As already mentioned, this meeting was focused on a general overview of the scientific and technical tools implemented in the DIAS system. Anna Belehaki, as project coordinator and Bruno Zolesi as local organizer opened the DIAS Final Conference by welcoming all the participants in this meeting. An introduction to the aim and the agenda of the DIAS Final Conference was given by Anna Belehaki.
Then, in the first of the technical presentations, Anna Belehaki presented an overview of the Users' needs survey. The aims and the methodology of this survey were analyzed in order to introduce the final results of this survey, which have been used to specify the added-value products and services delivered by the DIAS system.
Then, Ljiljanna Cander presented a description of the basic principles of each scientific model adopted by DIAS community for the development of the final DIAS products and services. A brief description of the algorithms, as well as some evaluation results and scientific references were also provided.
Next, Natalia Manola presented details concerning the development of the DIAS system infrastructure. In particular, information on the DIAS architecture and configuration, methodologies adopted for the transformation of the algorithms to run online using real-time data from the DIAS ionosondes, as well as the system alternatives through the DIAS administration tool were discussed. The presentation of the development of the DIAS infrastructure was concluded with the demonstration of the mobile interface by Alessandro Zanchi.
The afternoon session of this meeting started with a short presentation of the available web tools setting up for interaction with the DIAS users' network members and of the publicity material available on DIAS web site (http://www.iono.noa.gr/DIAS). These tools aim to help in the advertisement of DIAS system worldwide and in the collection of comments and suggestions from DIAS users.
Finally, an open discussion was carried out, chaired by Ljiljana Cander with the contribution of all the participants. The DIAS system was analyzed in more technical details and its capabilities in terms of the development of new products and services in the future, such as availability of ionospheric absorption parameters, synthetic ionograms and electron density forecasting.

3. Summary of the users' meeting (19 May 2006)

This meeting was mainly addressed to the DIAS users and potential customers and therefore it was dedicated to the demonstration of the DIAS system in operation and the commercial exploitation of DIAS services.

Welcome formalities by the local organizer, Bruno Zolesi, opened this meeting.

Then Anna Belehaki presented an overview of the DIAS project, aiming to the introduction of the objectives of the project, the released products and services and their potential use to the meeting participants.

Next Natalia Manola proceeded to the on-line demonstration of the DIAS system, navigating the participants through the DIAS user interface in all available products and services.

In the next session, the DIAS consortium presented commercial exploitation issues aiming at the viability of DIAS services in short and long term. Possible avenues for the exploitation of the DIAS products and services – with some preliminary views on the commercial management structure of DIAS Joint Venture as well as the main components of the business plan for the viability of DIAS after the end of the phase sponsored by EC – were presented by Ray Larsen and Stefano Gasperini.

The users meeting was concluded with a round table discussion. This discussion was developed in a twofold way: first, DIAS users (representatives from the Italian Navy, the Frequency Management Military Office of Poland, the Frequency Management Subcommittee of NATO, and EOARD) were invited to introduce their experience extracted from the usage of DIAS products and services. Then, invited experts from non European organizations (UMLCAR-USA, and IPS-Australia) had the opportunity to comment on DIAS system functionality and its status in universal perspective. The discussion proved to be very useful and encouraging for the DIAS JV. Constructive comments were received and suggestions/requests for the development of new products and services were reported. In general, the DIAS system was recognized to be most important and satisfactory for reliable ionospheric services over Europe, useful for a variety of civil and military applications. Moreover, it was particularly interesting for our guests that the system design allows some additional services to be easily incorporated into the system. Finally, a worthy point of discussion was the potential of DIAS system to be expanded and even applied in other regions of the world, such as North and South America and Asia.

4. Conclusions

The final conference of the DIAS Project as a major awareness and dissemination event was particularly successful, considering that it was a very well attended meeting with the participation of 63 attendees, from the public and private sector, the scientific and the users' community.

Representatives from all market segments interested in DIAS products and services (Defense, Air Force, Large Organizations, SMEs, Space industry, Ministries, Academic sector, Research Institutes, Press) came to Rome for this two-days meeting to follow the latest developments of the DIAS project. It was very encouraging that all the important players in the field, worldwide, (USAF, NATO, IPS, Frequency Management Military Offices), as well as representatives from organizations operating similar systems in Australia (IPS) and in the USA (UMLCAR) attended the conference. At this point we would like to acknowledge the contribution of the European Office of Aerospace Research and Development of the USAF (EOARD) for the success of the DIAS Final Conference.

All these facts demonstrate that, within these two years of EC funded project, DIAS became already a very important provider of ionospheric services not only in Europe but worldwide, considering the high interest of key users and experts who attended the Conference. The large and varied participation is an encouraging evidence of the users' satisfaction, which is a crucial factor for the viability of the DIAS system after the end of the period funded by EC. The open debate, held at the end of the two-day

conference, generated a great deal of useful feedback, providing interesting comments and stimulating suggestions to further improve the DIAS server. From now on**,** DIAS will operate in a continuous basis providing the users' community with real-time and historical ionospheric products and services. In the next months and years, it will be our commitment to continue the work in order to improve, update and maintain the system supplying a robust and reliable service that will meet the needs of our customers for accurate nowcasting and forecasting ionospheric information.