



12 October 2006

EDSnet WG6 – Data Fusion, Assimilation and Modelling  
BMT Cordah Limited – 7 Ocean Way, Ocean Village, Southampton

**October 4<sup>th</sup> 2006, 2pm- 4.30pm**

## **Meeting Minutes**

**Meeting started at 2pm.**

Attendees: Keith Haines (ESSC, University of Reading), Tim Fileman (Plymouth Marine Laboratory), Simon Powell (Marine South East), Jonathan Williams (Marine South-East), David Brown (Institute of Industrial Research, Portsmouth), Catherine Mant (University of Portsmouth), Tim Parker (BMT)

Apologies: Richard Torres (PML), Dave Gunn (NERC)

Absence: Siva Reddy (Metoc)

Chairman: Z. Sabeur (BMT)

### **Introductions:**

- All attendees introduced themselves and roles at their respective organisations
- The objectives of the EDSnet initiative were introduced by Jonathan Williams as chairman of EDSnet. Jonathan noted that EDSnet is funded by SEEDA and is made up of by 6 working groups. Three of which are knowledge orientated and the other three groups are decision support applications orientated. Jonathan invited attendees, particularly those who were new to the network to visit the EDSNET portal and download the introductory presentations about EDSnet.
- Z. Sabeur introduced WG6 objectives on Fusion, Data Assimilation and Modelling (FDAM). He noted that FDAM use mathematical methods of combining information from single or multiple sensor(s) and/or data sources. Also FDAM is needed for obtaining more accurate information

about the state of the environment, while controlling the error on the prediction of a given set of environmental state variables. Zed also mentioned the aim of achieving tactical decision-making capability for a timely assessment and management of the state of the environment with FDAM technologies.

### **Presentation Session:**

- Keith Haines presented his R&D activities within ESSC. As one of the founder members of the National Centre for Ocean Forecasting (NCOF), ESSC are involved in large data assimilation computing, using grid computing technologies, supported by open web services. ECOOP is a new IP FP6 project which will start in January 2007, where oil spill applications are required to show the impact of assimilating ocean data on the oil spill predictions.
- Time Fileman presented PML R&D activities on data assimilation programmes on the ERSEM ecosystem modelling tool. Ensemble creations of optimal initial conditions for improving model predictability were also presented.
- David Brown, presented DTI funded projects, some of which specialised on the use of Artificial Intelligence(AI) techniques for tracking and identifying the motion objects and vision data integration and enhancement techniques.
- Catherine Mant introduced the work done in Portsmouth University, Civil Engineering Department. R&D work on sewage treatment technologies with the support of a laboratory for experiment programmes at Petersfield. Many funded projects from water engineering companies in the South have been conducted. Jonathan Williams mentioned the relevance of ICREW and i-Marq projects on the forecast of microbial risks at bathing waters, the water framework directives where with Catherine Mant's research activities in Portsmouth. Also Z. Sabeur noted that it was important to know about water treatment infrastructure change through time for the development of water risk management systems, based on data driven modelling techniques. This experience was acquired during the ICREW project.
- Z. Sabeur presented past and present R&D projects together with environmental information systems such as PROTEUS(offshore discharges impact on marine species), OSIS-SSOR (deep and surface oil spills) and ISAAC(noise propagation and impact on marine species) conducted at BMT. Also, an oil slick identification tool using AI and data vision has been shown. The tracking of such spills brought interest with from the Institute of Industrial Research. Also Z.Sabeur briefed the members on the EU FP6 S@NY and Orchestra projects where BMT is involved. S@NY addresses the development of open sensor network,

fusion services while Orchestra develops open environmental risk specific services.

### **Brainstorming sessions-EDS topics priority and potential selections**

The following topics involving data fusion and assimilation have been found useful for WG6. (Also useful for the other WG's in edsnet)

- Image analysis and enhancement techniques
- Ecosystem modelling and assimilation with observations
- Water quality, the EU WFD and improvement of existing decision support methods through fusion of information
- Ensemble creation of model initial conditions techniques to compute model errors in assimilation programmes.
- Open standard services for remote access to data
- Web services and web applications for decision support.

### **Actions**

- Z. Sabeur to provide the minutes of this meeting
- Attendance to EDSnet plenary on October 23<sup>rd</sup> 2006, afternoon
- Simon Powell will be sending the agenda before week ending 13/10/07
- Plan for a WG6 workshop prior to Christmas. Meeting date to be provided by Z. Sabeur

**Meeting closed at 4.40pm.**