

Financial/Administrative co-ordinator

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Executive Summary

Main Achievements

- Continued development of working Data Broker Interface prototype ('mock-up')
- Mermaid Presentation at the SeaTech Week Conference in Brest, France
- Second User Workshop in Brest (Nov)
- Demonstration of mock up at the 10th ROI meetings in Brest (Nov)
- Agreement on Overall System Architecture
- Agreement on technologies to be used
- Identification of High-level design components and communications interfaces
- Tasking Allocation agreed

Progress in implementation of the 'Description of Work'

- Continued enhancement of existing EDMED metadata standard
- Research into required technologies, such as Oracle, and MS Site Server
- Development of low-level design
- Research and development of E-commerce Engine

Problems encountered

- Realisation of illogical sequence of workpackages as originally proposed
- Realisation of unfeasibility of completing all deliverables for WP3 and WP5 as originally proposed

Highlights for next reporting period

- First Annual Review in Brussels.
- Project Meeting
- 2nd Concertation meeting in Brussels.
- Completion of Low Level (detailed) design for WP3 and WP5 components.
- Kick-Off Meetings for WP4 and WP6

Anticipated problems for next reporting period

- Unfeasible objective of completing all the design and specification documents *and* compiled code by end of February. This is due to the realisation that communications and interface protocols due for development during WP4 (commencing March 2001) need to be developed in conjunction with the design of components required for WP3. The sequence of development detailed in the Description of Work is no longer logical, and the deliverables need to be re-scheduled.

1 – Overview

1.1 Objectives

<i>Objectives</i>	<i>Progress towards achieving objectives</i>
<ul style="list-style-type: none"> ❑ Workpackage 1: ❑ Ensure the smooth running of the project ❑ Maximise exchange of data and information between project participants ❑ Ensure the optimal focusing of effort towards meeting the project objectives ❑ Ensure the timely delivery of high quality deliverables to the EU ❑ Workpackage 3 ❑ Design and implementation of data broker central data warehouse and buffer dataset formats, based on data structures specification database ❑ Design and development of suitable high speed search utilities to search and retrieve data subsets based on spatial, temporal, data type and other search criteria ❑ Specification and establishment of metadata database to support all identified data types ❑ Design and implementation of data packaging suitable for compression and parameterisation of supported data types for fast transmission 	<p>Regular correspondence by e-mail to assess the status of each partner.</p> <p>Small-scale Project Meetings in November, and December 2000 in the UK and France</p> <p>Partnership agreement on use of a modified version of EDMED as the base for the metadata database structure. Continued extension of EDMED to fulfil project requirements.</p> <p>Agreement that Mermaid will potentially support GRIB2, the new 4D data format developed and sanctioned by the WMO, and due for release in April 2001. Research into this format will begin as soon as details of GRIB2 are available. Meanwhile, 3 or 4 other suitable data formats will be identified, and search routines developed for these to demonstrate the technology. GRIB2 will be incorporated as a supported format at a later stage.</p> <p>Research into Oracle and SQL Server as technologies for the Data Warehouse and Data Products (Metadata) Databases.</p> <p>Agreement to use a standard compression utility (such as PKZIP) for the compression and parameterisation routines, as requested by Users through the workshops.</p> <p>Completion of High Level Design Document, identifying all key components and communications interfaces.</p> <p>Commencement of Low Level Design of Data Broker components.</p>

❑ Workpackage 5

- ❑ Site creation, customisation and maintenance, with the adoption of conceptual presentation language to permit designers to describe site presentation at a high level of abstraction.
- ❑ Dynamic merchandising for capturing and publishing information changing with time and continuously refreshed by sources.
- ❑ Order Purchasing Interface, to handle targeted functions – such as service billing, product tax, shipping and handling charges, payment authorisations, inventory checks and interface to invoicing programs – according to specific business rules.
- ❑ Industry-standard security to create a secure environment for customers, partners and site/application administrators with strong, integrated HTTP Authentication and Windows Challenge Response.
- ❑ Business analysis, to let users create custom reports for in-depths analysis of site usage data.

Continued development of mock-up application, including further development of the e-commerce engine, based on MS Site Server. This has included generating the ability for users to logon and browse the 'dummy' database to gain information regarding costs, shipping fees and taxes for each dataset.

Research and development of administration reporting and user profile updating components in the e-commerce engine.

Research into standard e-merchants and other e-commerce applications with regard to invoicing and billing.

Research into 3rd party credit card and bank detail authorisation companies. Decision to test the freely available credit card authorisation service available through the Internet.

Continued research into Security systems.

1.2 Milestones- Foreseen

<i>Milestone</i>	<i>Planned date</i>	<i>Actual date</i>	<i>Comments</i>
M03.1 Completion of High Level design specifications	31/12/2000	22/12/2000	HLD Document agreed and completed on schedule
No other milestones planned for the reporting period. Those foreseen are:			
M03.2 Completion of code and documentation	28/02/2001	-	Re-scheduling of this deliverable. Design and documentation of components has begun, but coding will not be complete by the end of Feb.
M05.1 Completion of designs for E-commerce Engine	31/03/2001	-	Work on the e-commerce engine through the mock-up development is progressing and is on schedule.
M05.2 Completion and testing of code and documentation	31/03/2001	-	Work expected to be complete on schedule

1.3 Deliverables - Foreseen

<i>Deliverable Code & Name</i>	<i>Planned delivery date</i>	<i>Actual delivery date</i>	<i>Comments</i>
No Deliverables were due in this reporting period. Those planned for the forthcoming period			
D2. Design, code and Documentation for the data warehouse, and supported data structures, incorporating high speed search utilities	28/02/2001	-	Design and documentation of data structures, and data warehouse, including search routines is progressing, and on schedule. Completion of compiled code has been re-scheduled for completion by month 16.
D3. Designs, code and documentation for the metadata database	28/02/2001	-	Design and documentation for the metadata structure, and metadata database progressing and on schedule. Completion of compiled code has been re-scheduled for completion by month 16.
D4. Designs, code and documentation for compression and parameterisation routines for data packaging	28/02/2001	-	After discussions at the User Workshops, it was decided to utilise standard compression routines (such as PKZIP) for data packaging. This deliverable is therefore obviated.
D7. Designs, code and documentation for the E-commerce engine	31/03/2001	-	Work progressing in the form of the evolving Mock-up, and is on schedule.
D7.1 Designs, code and documentation for the websites development environment for E-commerce	31/03/2001	-	Work progressing in the form of the evolving Mock-up, and is on schedule

1.4 Deviations from Plan

<i>Causes and Description</i>	<i>Corrective actions</i>
<p>Changes to Project Schedule.</p> <p>As the detailed design of the MERMAID system has progressed, it has been necessary to reschedule a number of project activities. All activities planned for execution at this time are well underway, but some have become conditional on other activities scheduled later in the project, or on external factors. As a result, certain activities have been brought forward in the schedule and others have been delayed in terms of finalising deliverables.</p> <p>WP2 (Requirements Analysis) has been completed exactly as planned. WP3 (Data Management) is scheduled for completion by the end of Month 14 (end February). WP4 (Data Broker Interfacing and Comms) is scheduled for completion in Month 20, WP5 (E-commerce Integration) by Month 15, and WP6 (Data Broker Prototyping) by Month 27.</p> <p>Three deliverables (under WP3) are scheduled for Month 14. D3 (Metadata Database design) is on target for completion as scheduled. D2 (Data Warehouse) and D4 (Data Packaging) may be slightly delayed (4-6 weeks). The finalisation of D3 has become contingent on high level definition of the Interfacing and Communications activities (WP4) which will affect the configuration of databases. It has also been affected by the decision to use the new GRIB2 data format for the large 4D datasets. This international standard data format is felt to be important in the open-systems design of MERMAID. The data structures are presently being examined using the draft specification documentation. It is expected that the specifications will be finalised in April 2001 and then adopted by meteorological and oceanographic institutions around the world. It was requested by external users during WP2 to use standard compression utilities, rather than to design new packaging routines. This element of D4 (Data Packaging) is therefore no longer required.</p>	<p>The consortium proposes to complete and deliver by the end of February (the due date of WP3 deliverables) the following (please note that not all of these are project deliverables, but rather internal reports/milestones):</p> <ol style="list-style-type: none"> 1) the selection, design and documentation of 3-4 supported data structures (not including GRIB2) –D2 (WP3) 2) the base design of the data warehouse and search routines (not complete)– D2 (WP3) 3) the selection, design and documentation of the metadata structure and database – D3 (WP3) 4) the design and documentation of the overall system architecture – internal milestone (WP3/5) 5) the high-level design and documentation of the key components – internal milestone (WP3/5) 6) the high-level design and documentation of the component interfaces and communications protocols – internal milestone (WP4) 7) the design and code for the prototype data broker Graphical User Interface, including e-commerce and search engine interface prototypes – D5 (WP4), D7 (WP5), and D8 (WP6), <p>Please note that although we will not be in a position to deliver the compiled code for the data warehouse, or the metadata database (as originally proposed for the end of Feb), we will be delivering the designs for these. In addition, we will be able to deliver the designs and documentation for other aspects (points 4, 5 and 6 above) originally scheduled for later in the project.</p> <p>Although we are waiting for the official release of GRIB2 in April to fully design the data warehouse and search routines, we will begin this process in the meantime, based on the design of 3-4 other complimentary data structures (point 1 above), whilst bearing in mind the requirements of GRIB2. The base design will therefore be complete.</p> <p>The planned re-scheduling should have no effect on the overall project plan. Significant future planned activity has been undertaken so that WP4, WP5 and WP6 are in a more advanced state than anticipated for this stage in the project.</p>

2 – Contractual Arrangements

The partner MCED are still officially in the consortium, although they do not have a role to play until Workpackage 6, which commences in March 2001. The issue will be resolved by then. Unfortunately despite our continued efforts, it is looking increasingly unlikely that the Israel partner, MCED will be able to remain in the consortium, especially considering the current political situation in Israel.

3 - Project Meetings (held and foreseen)

<i>Title</i>	<i>Data and Place</i>	<i>Main conclusions</i>
Technical Review Meeting	16 th November 2000 – BMT Offices, Southampton	BMT, TXT and MO present. Overall System Design agreed in principle. Development to continue using two, mirrored sites at the TXT and BMT offices, with regular exchange of updates. Key components identified, and tasking and approximate timescales agreed. Agreement to adopt GRIB2 as one of the supported data formats, when available in April 2001. Therefore, requirement to postpone final Data Warehouse and search routine designs. Agreement that Deliverable timetable not logical, and requires re-scheduling.
Secondary Technical Meeting	4 th /5 th December 2000 – TXT Office, Milan	BMT and TXT present. High Level Design, and selection of key components agreed.

4 - Dissemination / Promotional Information

4.1 Conferences and/or Workshops attended/organised/foreseen by the project

<i>Date</i>	<i>Title</i>	<i>Number of persons attended + other information</i>
28-29 November 2000	RIO2000 (10 th Marine Instrumentation Systems Meeting), within the Brest Sea Tech Week.	Platform presentation of MERMAID, its goals and objectives, by the project coordinator, in plenary session to an audience of some 100 delegates, on 28 th November. 2 ^d user workshop in the premises of the Conference, with 4 MERMAID project members and 7 attendees, including presentation of a first mock up version and results of the users requirements survey, on 29 th November
28 th Nov- 1 st Dec 2000	WMO CBS Conference - Geneva (This is the bi-annual meeting of high-level representatives of all national meteorological services, at which data exchange protocols and associated issues are discussed and agreed.)	2 Mermaid representatives (from MO) attended major WMO conference. A poster presentation on the MERMAID project was made as a contribution to the technical part of the meeting. Informal discussions were held with representatives of many of the European national meteorological services, to explain the background to and purposes of the MERMAID project. An explanatory leaflet (flyer) was distributed.

4.2 Articles Published , Press coverage, development web sites, etc.

<i>Date and Type</i>	<i>Details</i>
28 th November 2000 – Web newsletter ‘La vacation du littoral’	Article advertising MERMAID and its user workshop in Brest.
7 th Nov 2000 - Oceanspace Issue no. 283	Article advertising the conferences in Brest, France (detailed above) including coverage of the Mermaid Workshop

5 – Main results

<i>Description</i>	<i>Details</i>
URS	The Final User Requirements Specification is the only scheduled result of the project so far. This document is the synthesis of the first 7 months of research into the project, and will form the basis of the second, design phase of the project, scheduled to run from August 2000 to March 2001.
Data Broker Mock-Up Prototype	The Mermaid Mock-up Prototype is continuously under development, but was complete enough to demonstrate at the 2 nd User Workshop in Brest in December

6 - Reporting per partner and per workpackage**Partner name: BMT (CO 1)****WP 1: Project Management**

Activities:

- Preparation for and hosting of the Technical Meeting in Southampton (16th November)
- Preparation for and attendance at SeaTech conference week in Brest (28th November)
- Preparation for and attendance at the 2nd User Workshop in Brest (29th November)
- Preparation for and attendance at the technical meeting in Milan (4/5th December)
- Preparation and delivery of project reports
- General Administration

WP 3: Data Management

Activities:

- Continuation of extension of EDMED metadata format
- Research and development of multi-dimensional data structures to be supported
- Design of Overall System Architecture, and selection and specification of key components
- Identification of key communications interfaces
- Research into Oracle and SQL Server database technologies
- Continued studies into servlets and applets communication protocols

WP 5: E-commerce Integration

Activities:

- Discussion of E-commerce issues with other partners

WP 4: Data Broker Interfacing and Communications

Activities:

- Identification and Selection of Interfaces and Communications required

WP 6: Data Broker Prototyping

Activities:

- Advice on design and testing of Mock-up prototype

Partner name: TXT (CR 2)**WP 1: Project Management**

Activities:

- Preparation for and attendance at the technical board meeting in Southampton
- Preparation for and hosting of technical meeting in Milan to define the overall project architecture
- Preparation for and attendance at the 2nd User Workshop in Brest, where the Mermaid mock-up was demonstrated

WP 3: Data Management

Activities:

- Studies where performed on the following areas
possible metadata languages/structures
overall system architecture and components specification

WP 5: E-Commerce Integration

Activities:

- E-Commerce issues where analysed and investigated
- The choice of MS SiteServer Commerce Edition as a base e-Commerce platform was agreed, and software development was started

- possible e-Commerce engine integration issues were discussed

WP 4: Data Broker Interfacing and Communications

Activities:

- Identification and Selection of Interfaces and Communications required

WP 6: Data Broker Prototyping

Activities:

- Advice on design and testing of Mock-up prototype

Partner name: CEDRE (CR 3)**WP 1: Project Management****Also general Project Promotion**

Activities:

- Reporting
- Arrangement, at the RIO2000 conference (10th Marine Instrumentation Systems Meeting) in the Brest "SeaTech week" of a presentation of Mermaid by BMT to an audience of some 100 specialists of oceanic measurement, modelling and marine environment monitoring.
- Preparation and organisation of the 2^d user workshop in the premises of the Conference, with general presentation by BMT, presentation of a first mock up version by TXT and results of the users requirements survey. Attendees were clearly satisfied by the technicalities of the mock-up and subsequent discussions concentrated more on data ownership and marketing strategy than on technical matters. MERMAID partners took the opportunity to stress that marine data broker would offer an e-commerce facility, and that it was intended to be market driven. Particularly discussed matters were the ownership question and the terms and conditions of transactions, in relation with added value at various stages of the data exchange. Other important questions concerned the administration fees and languages that would be available on the marine data broker website.

Partner name: MO (CR 4)**WP 1: Project Management**

Activities:

- Preparation of material for poster presentation at WMO CBS Conference in Geneva (27-28 Nov)
- Familiarisation by new MO Project Manager of work in hand and overall project framework

WP 3: Data Management

Activities:

- Further consideration of the various data format options, bearing in mind the formats in use (and planned) by the meteorological community
- Discussion with project partners to decide which formats will be implemented
- Further work on design and documentation of data delivery system
- Further work on structure of product catalogue
- As expected (and encouraged by MO), the decision was taken by WMO/CBS to accept GRIB-2 as an official data exchange format for the meteorological community. This means that this format can now be considered as an additional option for use in MERMAID.

WP 5: E-commerce Integration

Activities:

- Advisory discussions with other partners on available technologies
- Attendance at WMO/CBS meeting to explain/promote the project to the meteorological community

Partner name: IMGW-OM (CR 5)

WP 1: Project Management

Activities:

- Reporting

WP 3: Data Management

Activities:

- Improvement of the Polish WWW page linked to MERMAID (<http://baltyk/imgw.gdynia.pl/medas/>)
- The meetings with the subcontractor BMT MC in Gdansk to discuss the main issues of the application to be prepared at the next stage

WP 9: Dissemination and Use

Activities:

- The correction of the revised publication: “The use of the coast environment information through the Internet in practice (MERMAID – Internet data broker concept)”.

Partner name: NC (CR 7)

No activities were scheduled for this reporting period

6 – Project Effort

Effort for the reporting period (person-hours) (preferably presented as an Excel sheet either per partner or per person)											
Contractor designation	Acronym	WP 01	WP 02	WP 03	WP 04	WP 05	WP 06	WP 07	WP 08	WP 09	Total
CO1	BMT	122	-	564	80	140	30	-	-	-	936
CR2	TXT	27	-	364	-	896	-	-	-	-	1287
CR3	CEDRE	24	-	-	-	10	12	-	-	-	46
CR4	MO	20	-	50	-	45	-	-	-	-	115
CR5	IMGW	7	-	105	-	-	-	-	-	28	140
CR7	NC	-	-	-	-	-	-	-	-	-	-
Total		200	-	1083	80	1091	42	-	-	28	2524

Cumulative Effort to-date (person-hours) (preferably presented as an Excel sheet either per partner or per person)																	
Contractor designation	Acronym	WP 01		WP 02		WP 03		WP 04		WP 05		WP 06		WP 09		Total	
		P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A
CO1	BMT	280	563	1000	1813	1722	1332	0	80	200	190	0	30	140	324	3342	4332
CR2	TXT	112	97	1000	1232	1320	364	0	0	1300	1106	0	0	140	140	3872	2939
CR3	CEDRE	56	80	280	128	0	10	0	0	200	14	0	12	0	41 *	536	273
CR4	MO	56	118	1120	223	480	135	0	0	400	45	0	0	70	17	2126	538
CR5	IMGW	56	62†	400	284†	240	154 ‡	0	0	100	0	0	0	0	138†	796	638
CR7	NC	56	29	280	76	0	0	0	0	0	0	0	0	0	5	336	110

Total		616	949	4080	3756	3762	1995	0	80	2200	1355	0	30	350	665	11008	8830
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P: planned A: actual

*NB. The unit of person-hours has been used, with 1 month = 140 hours.
Estimates for effort planned have been calculated as a linear average per month over the entire workpackage duration.*

Please note that there were some errors in the figures in previous reports, which have been amended in this report.

** The total effort spent by CEDRE on WP9 was wrongly reported in the third quarterly report (no.3) as 48 hours, which should have been 41 hours. This has therefore effected their total effort spent.*

† The allocation of effort spent by the IMGW was wrongly reported in the second quarterly report (no. 2), and has been amended here. 10 hours allocated to WP1, and 4 hours allocated to WP9 should have been allocated to WP2. Please note that this has not affected their total effort spent.

‡ The cumulative effort spent by the IMGW on WP3 was wrongly reported in the third quarterly report (no. 3) as 63 hours. This should have been 49 hours, giving a cumulative total at the end of the current reporting period of 154 hours.