

Project no. AST5-CT-2006-030704

SARDINE

ATM R&D project Identification and information Network

Instrument: Specific Support Action

Thematic Priority: 1.4, Aeronautics and space

Final Activity Report

by

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Period covered: from to

1 May 2006 – 31 October 2008

Date of preparation:

19 May 2009

Start date of project:

1 May 2006

Duration:

30 months

Project coordinator name

Project coordinator organisation name

T.J. Beemster

NLR

Revision

Version 1.3

Document Control Information

Version 1.3

Project Identification	
Project/Contract Number	AST5-CT-2006-030704
Project Title	ATM R&D project Identification and information Network
Project Acronym	SARDINE

Document Identification	
Title	Final Activity Report
Version	1.3
Deliverable Reference	
Date	19-5-2009
File name	SARDINE final activity report-v1.3.doc
Author	T.J. Beemster
Company	NLR
Contact Details	beemster@nlr.nl
Dissemination Level	Public

Document Control Information

Document Approval			
Authority	Name	Company/Organisation	Date
Author	T.J. Beemster	NLR	19/05/2009
Project leader	T.J. Beemster	NLR	19/05/2009

Control Information			
Version	Date	Sections/Pages Affected	Reason for Change
0.1	21-08-08	All	First draft
1.0	17-11-08	All	Final version with input from all partners
1.1	23-11-08	All	update
1.2	9-3-2009	Dissemination Annex	Dissemination Annex added
1.3	19-5-2009	All	update

DISTRIBUTION LIST

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Table of Contents

List of Abbreviations	6
Executive Summary	7
1. Introduction	8
1.1 Purpose of the document	8
1.2 Intended Audience	8
1.3 Document Structure	8
1.4 Background.....	8
2. Project objectives and major achievements in the reporting period	10
2.1 Objective 1: drawing a complete picture of ATM RTD	10
2.2 Objective 2: supporting ATM RTD networking and rationalisation	10
2.3 Objective 3: monitoring ATM RTD in relation to European priorities	11
2.4 Objective 4: Providing a feed-back to the ATM RTD community	11
3. Workpackage progress	12
3.1 WP200 Data collection	12
Guidelines for 2008 and after data collection process	14
3.2 WP300 Analysis of data	15
3.3 WP400 Dissemination.....	17
4. Consortium Management	20
4.1 Objectives of WP100 Management	20
4.2 Activities (Month 1-30)	20
4.3 Problems encountered and Mitigation	21
4.4 Planning of the project	21
References	23
Appendix A Dissemination	24

List of Abbreviations

ARDEP	Analysis of Research and Development in European Programmes
ATM	Air Traffic Management
ISN	Information Support Network
JPB	Joint Programme Board
RTD	Research and Technology Development
SARDINE	ATM R&D project Identification and information Network
VDR	Validation Data Repository



Executive Summary

The SARDINE project extended over a period of thirty months. The SARDINE project consisted in collecting and processing information about the entire national and European RTD projects in the field of Air Traffic Management and to advise the Commission in the most optimal use of the collected information, benefiting the evaluation of European RTD programmes. As final deliverable, this document reports on the status of evaluating and monitoring ATM R&D in Europe. The ARDEP database is updated yearly and includes a tentative complete recording of ongoing, planned and completed R&D, as well as an analysis and appraisal of trends and needs.

This document is the final summary of the work that has been performed to improve the process of the ARDEP data collection and analysis and to improve the quality of the ARDEP database.

The first objective of the project, i.e. to draw a complete picture of ATM/R&D in Europe, has been fulfilled by entering the organisations project data into the ARDEP data base.

The second objective, to ensure that all identified ATM RTD projects are captured in a co-ordinated system and that proper support is provided to a rationalisation process of ATM RTD in Europe, was met in two ways. Firstly, this was accomplished by attending ATM R&D co-ordination meetings in support of a comprehensive framework of project identification. Secondly this was done by providing input and specifications of existing ATM R&D Information Systems (ARDEP) for future developments of ATM R&D in Europe.

The third objective was to monitor ATM/R&D regarding European priorities of improvement, and to assess whether the absolute and relative levels of expense in each technical domain matches their priorities and expectations. This objective was met by analysing the updated contents of the ARDEP database.

The fourth objective was to provide feed-back to the ATM R&D community. This has been addressed in the dissemination plan, by the Thematic Analysis report and by the enquiries made to companies participating in ARDEP.

The final last half-year period of the project has been used to complete the work on the 2008 campaign and to finalise the project.



1. Introduction

1.1 Purpose of the document

This document is the Final Activity Report for SARDINE (ATM R&D project Identification and information Network) project, from May 1st, 2006 to October 31, 2008.

The Final Activity Report includes:

- A presentation of objectives of the project and the achievements;
- In the annex information on dissemination of knowledge.

1.2 Intended Audience

The intended audience of this Management Report is:

- The European Commission;
- SARDINE Consortium partners.

1.3 Document Structure

This document is made of the following parts:

- Section 1 is the introduction presenting the context of the SARDINE Final Activity Report;
- Section 2 describes objectives of the project and major achievements and the impact of the project;
- Section 3 gives details on progress of the workpackages;
- Section 4 describes consortium management issues;
- Section 5 elaborates on the status of deliverables and planning, and
- In the annex a plan is described for use and dissemination of knowledge.

1.4 Background

To be able to co-ordinate R&D effectively, there was a need to use extensively all existing ATM R&D information systems available, in particular ARDEP (Analysis of Research & Development in European Programmes and VDR (Validation Data Repository), from which all relevant information could be made available to interested parties. The results of this work ensured that ongoing research and the results obtained could be analysed year by year from any required viewpoint.

The SARDINE project, through its support aimed to:

- Provide a more complete picture of information on ATM R&D in Europe, achieved through an extensive network of contacts.
- Support ATM R&D by networking and rationalisation and to realise a comprehensive project identification framework.
- Assist the EC in monitoring ATM R&D in Europe in relation to European priorities with respect to the enhancement of ATM.
- Provide appropriate feedback to the ATM R&D community and other interested parties.

The SARDINE project extended over a period of thirty months. It provided a report on the status of ATM R&D in Europe on a yearly basis, which included a tentative complete recording of ongoing, planned and completed R&D, as well as analysis and an appraisal of trends and needs.

This document is the final summary of the work performed and what has been done to improve the process of the ARDEP data collection and analysis.



2. Project objectives and major achievements in the reporting period

The SARDINE project consisted in collecting and processing information about the entire national and European RTD projects in the field of Air Traffic Management and to advise the Commission in optimised use of the collected information, benefiting the evaluation of European RTD programmes.

This project pursued four main objectives, which are described below. After formulating the objectives, the major achievements are summarised at the end of each section.

2.1 Objective 1: drawing a complete picture of ATM RTD

The primary objective of this project was to ensure that every European ATM related RTD project would be recorded on a single European database so that all actors of ATM RTD were identified with their respective areas of interest and that a complete picture of ATM RTD could be seen.

The scope of the initial data gathering activity was to capture any relevant project, be it sponsored by a National Administration (especially the national Ministries of Transport and Civil Aviation Authorities,) a national aeronautical and spatial Agency, a public or private R&D institution, an industrial undertaking, or a European institution of relevance to the field which was investigated (European Commission, EASA, ESA...)

This objective implied that all existing networks (in particular ARDEP Information Support Network) of contacts would be used (and if necessary expanded) in order to access to numerous sources of primary information.

The SARDINE consortium has fulfilled this objective for the duration of the project by entering the organisations project data into the ARDEP data base for 2006 and 2007 projects.

2.2 Objective 2: supporting ATM RTD networking and rationalisation

The second project objective was to ensure that all the ATM RTD projects identified through the data gathering process were captured in a co-ordinated system so that projects that were complimentary could be identified as such when searching through an ATM R&D Information System (ARDEP data repository). This would provide support to rationalisation ATM RTD through the detection of any duplication or similarities between recorded projects.

This objective implied:

- An identification and an involvement in key existing ATM R&D co-ordination mechanisms (i.e.: ARDEP ISN meetings, Join Programme Board(JPB), DGTREN EXTRAWEB meeting's, etc.) in order to establish a comprehensive project identification framework so that every new area of ATM RTD could be understood early on, and correctly identified and recorded with respect to other pre-existing themes.
- To provide input to ATM R&D Co-ordination mechanisms (i.e. :JPB) and specifications for future developments of existing ATM R&D Information Systems (ARDEP)

The SARDINE consortium has been involved in key existing ATM R&D co-ordination mechanisms by participating in the ARDEP ISN meetings and drafting group meetings of the

ARDEP Green Book, as well as by providing important input to the data collection process and analysis of the data.

2.3 Objective 3: monitoring ATM RTD in relation to European priorities

The third objective was to consolidate information about the budgets allocated to the different projects, with a view to understand the scale of investment involved and thus enable ATM policy-makers to assess whether the absolute and relative levels of expense in each technical domain matched their priorities and expectations.

What should be provided was not a one-off snapshot but an analysis of the evolution based on the temporal series compiled in preceding years. This also provided a view of the effectiveness of past priorities as they evolved.

This objective implied that statistical comparison and presentation tools be used to provide a high level description of evolutions. ARDEP was already a mean to monitor ATM R&D activities in relation, to European Priorities. Additional statistics and presentation could be provided by ARDEP on request.

SARDINE has provided input into the analysis of the ARDEP Green Book.

SARDINE has also undertaken an assessment of the data collection process with the objective to deliver more consistent information through a more efficient and a more reliable process.

2.4 Objective 4: Providing a feed-back to the ATM RTD community

The fourth objective was to disseminate and market the information obtained and analysed, in the form of a digestible annual report. The main target audience for this report was the ATM RTD community and its sponsors, so that they may individually and collectively assess their proposed RTD strategies and proposals to the perceived duplications, gaps and complementarities in their respective programmes.

This objective implied that a significant amount of editorial effort would be spent annually to produce the new reference document on European RTD in ATM, but ARDEP contributed to the production of these publications

SARDINE has fulfilled this objective by providing input to the drafting group meetings of the Green Book and has developed a Powerpoint presentation and a communication strategy that has been implemented in each organisation.



3. Workpackage progress

3.1 WP200 Data collection

Objectives of WP200

WP200 had two main objectives:

- A complete view of current research & development projects applicable to Europe. This was achieved through a data collection process which included project descriptions, objectives and budgets. A report was made available to all participating organisations which also was made available to the public without the budget figures;
- It is important that the data be reliable, consistent and timely. An assessment of the R&D data collection process was undertaken to identify problems in meeting the objectives and to propose specific actions for improvement.

Description of WP200 work

To undertake this WP, partners agreed the R&D data needed and provided details of R&D projects that they were leading, or were associated with or were within their sphere of competence. The project used the ARDEP Web-based tool for data input. The use of this tool was be the responsibility of all partners, and they ensured consolidation by nominated partners of the data provided. This included initial analysis of the raw data in terms of both reliability and consistency checking.

Experience showed that there were problems in establishing consistent and reliable data from different organisations in Europe. As part of the data gathering process, partners reviewed the data collection process and identified the problems encountered. The expertise of the consortium partners then was used to appraise and analyse both the process and data problems. The scope also took into account historical experiences, either at a national or institutional level. This activity was the objective of analysing and presenting the position and to propose, wherever possible, specific actions:

- to improve the reliability of the data,
- the timeliness of its data collection;
- to identify and promote the possible improvements for the ARDEP data collection web site
- to promote opportunities and actions for further improvements.

A lot of effort has been done to define, together with other SARDINE members and ISN participants, the necessary evolutions to prepare SESAR reporting in 2009 and define the role of ARDEP data base in this new context.

WP200 Tasks

T200-1: data collection of research & development projects.

T200-2: data collection review and assessment

Achievements (May-2006- October-2008)

The SARDINE partners have conducted an initial assessment on their experience of the R&D data collection process described in the D200.3 "Initial assessment report". This

assessment has identified issues in the data collection process and determined a number of objectives aiming at improving this process. In order to deliver more consistent information through a more efficient and reliable process, the SARDINE consortium members developed solutions through brainstorming sessions in a collaborative way and provided recommendations and harmonised best practices to data collectors to improve efficiency and timeliness of data collection for 2006 and 2007 campaigns and recommendations for 2008 and after campaigns.

A campaign coordinator (a member of SARDINE) was nominated to be the point of contact for ISN and to manage national project leaders, explaining and disseminating the updated golden rules, disseminating collection forms and enhancing the common understanding by all partners of existing classification and criteria. A large effort was spent to enhance quality of data, reliability and consistency. This continued to show more visibility on the appraisal of improvement of data collection and of ARDEP database.

Consortium members have fed the ARDEP repository with new projects launched during the years 2006 and 2007 and updated the existing ones with the latest information. They have summarised finishing projects, checked data for completeness and consistency and evaluated it before releasing to the ARDEP team for analysis. Consistency of past information was checked and consolidation of projects has been undertaken by each contributor in order to better identify and classify R&D projects, either projects dealing with fundamental research, or projects at the level of engineering design. This was done applying the E-OCVM life cycle and retaining mainly projects at V0 to V3 levels, during the R&D phase. Most of the projects which are at the V4 or V5 level, which are beyond the R&D phase, in a later development or deployment phase were not described in ARDEP but a lot of these types of projects can be found in the VDR repository (<http://www.EUROCONTROL.int/vdr>).

The campaign coordinators provided the ARDEP data base with the following information:

- Objectives of the project,
- Approach used,
- Expected and achieved results,
- Technical leader, partners and contacts,
- Duration and applicability time frame,
- R&D products issued,
- Budget information (sponsors, 2006 investment and effort),
- ARDEP domain and sub-domain classification
- ATM 2000+ classification

The ARDEP interface has been regularly up-dated in collaboration with the EUROCONTROL ARDEP team in charge of its development with regard to the improvement identified by SARDINE partners. Regarding the public web site, either for collection or for consultation, a lot of improvements have been identified and transmitted for implementation. New Golden Rules has been elaborated and coordinated with ISN members and released in order to improve the process.

2006 Campaign

The data entries for 2006 projects data collection was launched in November 2006 and has been fully completed in July 2007 (227 projects collected), enabling the publication of 2006 Green Book in November 2007. Information can be found in D200.1 "Year 2006 report".

2007 Campaign

For the year 2007, 228 projects were described (after clustering sub-projects), created or updated, to the ARDEP repository. The data entries for 2007 projects data collection were launched the 8th of October 2007 and have been fully completed in April 2008, enabling a first scheduled publication of 2007 Green Book end of May 2008, 6 months earlier than Green Book 2006 and 10 months earlier than Green Book 2005, which shows the progresses made in the data collection process during the last two campaigns. Information can be found in D200.2 "Year 2007 report".

Guidelines for 2008 and after data collection process

One of the main remaining work which had to be done for 2008 and next campaigns had to do with SESAR alignment of the whole ATM R&D projects reporting. The driving issue here is how far it is possible to go without jeopardising the 2008 Campaign timetable: postponing 2008 campaign waiting for SESAR structure of work and the first launching of SJU project wasn't compatible with this calendar objective. The goal was to provide an image of what and how R&D needs are being addressed. By the time the 2008 Campaign started, the SESAR structures and R&D Needs were available in the e-Master Plan and can therefore be linked to ARDEP, although providing facilities in the ARDEP interface for on-line data capture seemed too ambitious. For organisations delegating the data capture to their project managers, it may prove too complex to get a uniform understanding and interpretation of the SESAR structures and data.

Possibilities for the 2008 campaign included the mapping of ARDEP concepts to SESAR OI Steps using the existing ARDEP concepts. For 2008 campaign off-line analysis would be necessary for the mapping of ARDEP projects to SESAR structures. However, it was possible to go further than with the 2007 analysis because the SESAR material was relatively stable and available and there was more time to respond. Limited additions to the on-line data capture may be possible: the Green Book 2008 should be very much in line with SESAR terminology and the ATM 2000+ strategy chapter and analysis has been replaced by the SESAR-aligned material. Only 2009 data collection will be fully aligned, with a collection process consistent with SESAR.

For the campaigns to come after 2008, to prepare ARDEP for use by the SJU as a process and tool to provide on time feedback on current status and progress made within the SESAR R&D Programme and the ATM R&D Master Plan, ARDEP reporting shall be harmonized to fit the ATM Master Plan and SESAR Work Breakdown Structure. The question of replacing the old master/sub project structure, organizing the ARDEP reports in the work programme hierarchy (e-Master Plan, CND Work Programme, etc.) shall be addressed. The responsibilities of the collection process shall also be consistent with the SJU will to organize reporting on SESAR R&D projects: one focal point could be assigned to every work, sub-work package or project with clear ownership and responsibilities.

The future reporting tools shall provide an online product delivery process to report the readiness of a work package online. The process informs automatically all dependent work package holders and the programme manager on the progress or delayed delivery, or other problems that needs to be distributed and considered for contingencies measures, identifying

red path and setting alarm with red flags in case of any information indicating a risk to maintain planned timing, cost or functionality requirements.

Three WP200 deliverables were submitted during the activity of the project:

Del.no.	Deliverable name	Vrs.	Due date	Delivery date	Lead contractor
D200.3	Initial assessment report	1.1	October 2006	January 2007	DSNA
D200.1	Year 2 data project		April 2007	01 December 2007	DSNA
D200.2	Year 2007 data project	1.0	April 2008	22 May 2008	DSNA

list of WP200 deliverables

WP200 has been represented at the following meetings:

- SARDINE KOM, October 19-20, 2006, Toulouse
- SARDINE project meeting February 19th, 2007, Toulouse
- SARDINE project meeting May 9th, 2007
- ISN 31 May 10-11, 2007, Las Palmas
- P1 review meeting and pre-meeting , May, 14-15, 2007, Paris
- Drafting Group meeting, June 20-21, 2007, Malmö
- SARDINE project meeting and ISN 32, September 18-19, 2007, Madrid
- SARDINE project meeting and ISN 33, January, 28-29, 2008, Brussels
- SARDINE project meeting and ISN 34, April 1-2 2008, Paris
- Drafting group meeting June 17-18, Brussels
- Project Officer Meeting, July 9th, Brussels
- Last SARDINE project meeting and ISN 35, September 16-17, Naples

Encountered problems and actions taken

No problems are reported.

3.2 WP300 Analysis of data

Objectives of WP300

The work package objective was to look at all the collected data in a consistent and systematic way in order to extract and compile data summaries relevant to the strategic needs of the different audiences i.e. European Commission, R&D stakeholders, service providers, industry and decision makers. This included an analysis of the data from several different perspectives i.e. mapping of SRA-2 by ATM activities and major European initiatives like SESAR.

Description of work

The purpose of the work package was to make best use of the available data gathered. Data seen without analysis makes it difficult to detect trends and identify patterns in the Research & Development & Trials (R&D&T) landscape. The focus of activities e.g. SESAR as a consequence of political and legal actions also needed to be understood. The feed-back to

the actors (R&D&T), politicians and decision makers was essential in order to achieve value for money and to maintain a focus that is in-line with the adopted strategy for Air Transport in Europe. The results from such an analysis should also be visible and available as a source of knowledge and thereby avoid for duplication of activities.

The work package undertook an annual analysis of the R&D&T landscape, the R&D activities, results and impact. The result of the analysis was published in the Green Book of ARDEP and further material provided where appropriate. There was a request for a (ad-hoc) specific analysis, which was foreseen in the planning and was labelled as a “thematic analysis/report”. The project also sought opportunities to present and participate at forums relevant to the project objectives such as European Commission forums, R&D&T forums and seminars.

WP300 Tasks

T300-1: Analysis of data.

T300-2: consolidation of data.

T300-3: review of the yearly report.

Activities (May-2006- October-2008)

SARDINE was represented in the work of the ARDEP team, (Drafting group), to support the team with the 2006 Analysis Report, the Green Book. SARDINE contributed to the work by giving inputs of customer needs of analysis and consolidation of the gathered data for 2006.

A review was made of the report and consolidation of the data was performed at SARDINE and ISN meetings attended by SARDINE members.

For the 2006 analysis a customer survey was conducted during April, 2007 to identify, within partner organisations, what the different audience types needed and how best to present it. The result of this survey was communicated to the ARDEP Team by sending the report of the results and discussions at the ISN meeting in September 2007. Special attention has been paid to the needs of SESAR by using knowledge of members involved in SESAR work. Feed-back on the report and its suggestions was received from the ARDEP team in October, 2007.

The report and the improvement of ARDEP data and analysis was reported in SARDINE deliverables Customer Survey report in September, D300-2, D300-5 in December 2007, and a thematic report D300-10 in February 2008.

WP300 has been represented at the following meetings:

- ISN28 and KOM SARDINE, May, 16-17, 2006
- Drafting group meeting, September,12-13, 2006
- ISN29 and progress meeting SARDINE, September 26-27, 2006
- ISN30 and progress meeting SARDINE, February, 20-21 2007
- SARDINE project meeting May 9th, 2007
- ISN 31 May 10-11, 2007, Las Palmas
- P1 review meeting and pre-meeting, May,14-15, 2007, Paris
- Drafting Group meeting, June 20-21, 2007, Malmö
- ISN 32 and progress meeting SARDINE, September 18-19, 2007, Madrid
- ISN 33 and progress meeting SARDINE, January, 28-29, 2008, Brussels
- ISN 34 and progress meeting SARDINE, April 1-2, 2008, Paris
- Drafting Group meeting, May, 6-7, 2008, Brussels

- P2 review meeting, July, 9, 2008
- ISN35 and progress meeting SARDINE, September, 16-17, 2008

Achievements (May-2006- October-2008)

Improvement of data process and analysis

The data capture evolved and the projects captured increased.

The process of data input was deteriorating during 2005 and the participating at ISN meetings was also noting a decreasing activity. Since the SARDINE project started, the participation at ISN meetings increased and at the end the members were fighting hard to finalise the data input earlier than before.

New analysis chapters reflecting concepts and the new SESAR ATM Masterplan instead of the ATM2000+-itmes has been introduced in the Green Book

Improvement of availability of analysis results

The speed of the whole data collection, analysis and dissemination process increased significantly; e.g. the ARDEP Green Book 2008 was planned for publication early 2009, whereas the ARDEP Green Book 2005 was published in autumn 2007. In our views it is vital for the recognition of the ATM R&D monitoring to present the results in a timely manner. Only if the Green Book is available early enough the stakeholders can base their strategic decisions on the results.

The project has succeeded in coming back on time and 3 GB has been produced within 19 months.

3.3 WP400 Dissemination

Objectives of WP400

The objectives of this WP were to ensure that the results of the Data Analysis (WP300) were disseminated and communicated effectively and that there was an impact regarding the undertaking of the project's activities.

Description of work

The work package ensured that the R&D actors, politicians and decision makers were aware of the results of the project's analyses in order to incorporate the status, findings and trends into their tasks. An active communication was therefore needed, in fact a dialogue, and such an approach also enabled some feed-back to be gathered so as to improve the process for the next cycle of analysis and consolidation with the aim of better serving the whole R&D community.

Tasks

T400-1: Dissemination of results.

Achievements (May-2006- October-2008)

The SARDINE Dissemination Strategy identified the SARDINE/ARDEP audience and has identified the exploitable knowledge and its use. Communication actions were undertaken and had an impact on the project's activities as described below.

Use of exploitable knowledge

Most responses to the customer survey on current use of the available material indicated that the Executive Summary of the Green Book was the most frequently used, particularly at management levels where an overview is required in order to enable the user to ask an analyst to seek further details or to issue challenges to the R&D community.

The main use of both the Executive Summary and the Green Book **is to gain an overview and gather key messages**. The details in the Green Book, when used, are considered to be valuable as a reference and, for some as a source of budget information and for identifying other organisations to contact them, either for information on a project in progress or as potential partners for new projects. The data is also used for marketing purposes. It was also commented that project managers in particular are interested in information and detail on individual projects. The "Analysis by Concept" chapter was mentioned the most as being of particular interest.

Opinions on use of the database were mixed, ranging from no use to daily use. For those using the database regularly, it was considered valuable or essential for their work.

Generally, the information in the Executive Summary and the analyses in the Green Book were felt to be set at the correct level, although there was a suggestion that they would be found less user-friendly if the user was not familiar with the data and classifications.

The satisfaction of website presentation ranges from satisfactory to good, although some responses stated that the website was only used infrequently.

For all material, it was noted that the analyses would be of greater value if they could be available earlier, with more up-to-date information.

External public like Industries could use the data base for strategic planning purpose through the public Website. However, some improvements would be required in order to presents results along to industry related needs. Furthermore, the data delivers only an incomplete picture of R&D activities because some industry projects were lacking. Only EC projects are mentioned not industries own research topics.

Communication means

It has been proposed to disseminate the key messages at two different levels depending whether the audience is top-level management or project manager/engineers.

Some communication means has been proposed such as: Presentations; Website (SARDINE/ARDEP); Reports, notes, executive summaries; Forum, workshops, events; Different publications (newsletters, etc.)

Communication actions undertaken

Due to the limited budget, the dissemination plan has been only partly put into actions. This part focuses on internal actions conducted amongst the SARDINE member organisations, including their participation to ARDEP ISN meetings. It has resulted a close and increased coordination between SARDINE members, ARDEP members and EUROCONTROL, the ISN meetings becoming an exchange and communication network between SARDINE members, ARDEP ISN members and ARDEP Core Team (EUROCONTROL).

External actions have been performed indirectly through projects to which SARDINE member organisations have participated, in particular SESAR. No external meeting - such as participation to forums or workshops - has been organised.

Continuous dissemination is performed via the ARDEP data base which SARDINE members have filled. Either the ARDEP Green Book or internal analysis about the results of ARDEP collections is disseminated under SARDINE organisations' management.

Results on the implementation of this communication strategy

Although, there was not enough budget and limited effort to communicate outside the consortium, the implementation of the communication strategy has contributed to:

- Extended ATM R&D visibility throughout the years to monitor the changes in R&D trends due to SESAR through SARDINE contribution to data collection and analysis;
- Better quality data, more consistency and more completeness of the overview of ATM R&D Data in Europe through closer coordination between SARDINE/ARDEP members and a more intense communication with the project leaders;
- A better communication between Research Centres (DTI, NLR, DLR, ...) through regular SARDINE/ISN meetings;
- Improved SARDINE/ARDEP data usage within each organisation through:
 - o Exchanges of best practices during ISN meetings,
 - o A better understanding of users' need (Customer Survey)
 - o An enhancement of management knowledge of possibilities of using data for strategic decision making
- Due improvement of ARDEP website interface through experience feed back of SARDINE members during ISN meetings.



4. Consortium Management

4.1 Objectives of WP100 Management

The work package objective was to provide professional project management to ensure the deliverables were presented in time, within the budget and with the required quality. Internal processes as well as communication to the EC are managed within this work package.

4.2 Activities (Month 1-30)

In May 2006 the SARDINE kick-off meeting was held at EUROCONTROL premises in Brussels, starting the project officially. Co-ordination between SARDINE and the ARDEP team has taken place on a regular basis, by phone, email and by scheduling the SARDINE meetings together with the ARDEP ISN meetings. From the SARDINE meetings minutes of meetings have been made and distributed including an actions lists agreed during the meeting.

The following meetings were attended by all or most of the SARDINE partners:

- | | |
|--|---|
| • ISN29 meeting | Braunschweig, 26/27-September-2006 |
| • SARDINE Project Coordination meeting | Toulouse 20-February-2007 |
| • ISN30 meeting | Toulouse 20/21-February-2007 |
| • SARDINE Project Coordination meeting | Las Palmas, 10-May-2007 |
| • ISN-31 meeting | Las Palmas, 10/11-May-2007 |
| • SARDINE Project Coordination meeting | Paris, 15-May-2007(with the Commission) |
| • ISN-32 meeting | Madrid, 18/19-Sep-2007 |
| • SARDINE Project Coordination meeting | Brussels, 29-Jan-2008 |
| • ISN-33 meeting | Brussels, 29/30-Jan-2008 |
| • SARDINE Project Coordination meeting | Paris, 1-Apr-2008 |
| • ISN-34 meeting | Paris, 1/2-Apr-2008 |
| • SARDINE Project Coordination meeting | Naples, 16-Sep-2008 |
| • ISN-35 meeting | Naples, 16/17-Sep-2008 |

In addition, several technical meetings were attended by specific partners to prepare and complete the ARDEP campaigns and the ARDEP Greenbook, e.g. to attend the ARDEP drafting group.

The main achievements were:

- To start the ARDEP data collection, and to continue data collection by initiating the analysis and reporting
- To complete and report on the ARDEP data collection and analysis
- To complete the Thematic Analysis report, describing a vision on future deployment of ARDEP comprising a possible integration with the VDR and a possibility of embedding the data repository within SESAR.
- Development of data collection process improvements
- Analysis and consolidation of data
- Review of reported data
- Dissemination of data

- Generating a specific report consolidating the added value of the SARDINE project

The coordination activities comprise:

- Project management meetings and other project internal coordination activities
- Coordination activities between SARDINE and ARDEP
- Coordination activities between SARDINE and SESAR

4.3 Problems encountered and Mitigation

Problems encountered

- The SARDINE budget was on a very tight budget, partners had only one man month of effort available for a twelve month period, of which about half was spent during the first three months of the year for data collection. This made it difficult or almost impossible to create and maintain momentum in the project for other activities as partners had for the other 9 months about one day of effort available for every two working weeks, including attending meetings.

- The SARDINE project was carried out in close collaboration with the ARDEP team. The SARDINE and ARDEP team were discussing a possible integration of ARDEP with SESAR. Any outcome is dependent on an actual establishment of the SESAR Joint Undertaking and their willingness to consider ARDEP as a feasible, useful and beneficial data repository for ATM R&D in Europe.

Mitigation of the problems

- The management board of SARDINE (project coordinator and workpackage leaders) ensured that the 2005, 2006 and 2007 campaign could be supported as appropriate. The analysis of data were completed in December 2008. Most partners declared their willingness to support ARDEP also in 2008. In 2009, hopefully, a solution will be established to integrate the ARDEP data repository in support of the SESAR JU.

- Working arrangements between SARDINE and ARDEP were accomplished and are functioning appropriately.

4.4 Planning of the project

The original plan was unspecific yet. After completion of the first campaign more specific planning dates were coming available. The updated planning was aligned with ARDEP activities and with the delivery dates of deliverables. The updated planning was established at P1, is not changed anymore, and is presented again below.



ID	Task Name	Duration	Qtr 1, 2006			Qtr 3, 2006			Qtr 1, 2007			Qtr 3, 2007			Qtr 1, 2008			Qtr 3, 2008			Qtr 1, 2009	
			Jan	Mar	May	Jul	Sep	Nov	Jan	Mar	May	Jul	Sep	Nov	Jan	Mar	May	Jul	Sep	Nov	Jan	Mar
1	WP100: Project Manager	#####																				
2	Proj.Man Period 1	262 days																				
3	Proj.Man. Period 2	263 days																				
4	Proj.Man. Final report	153 days																				
5	Thematic Analysis	415 days																				
6	WP200: Data Collection	#####																				
7	Year 2005 data:	1 day																				
8	T200.1: data collectio	24 days																				
9	T200.2: review + asse	110 days																				
10	Year 2006 data:	1 day																				
11	T200.3: data collectio	110 days																				
12	T200.4: review + asse	110 days																				
13	Year 2007 data:	1 day																				
14	T200.5: data collectio	109 days																				
15	T200.6: review + asse	110 days																				
16	WP300: Analysis of Data	#####																				
17	Year 2005 data:	1 day																				
18	T300.1: analysis of de	66 days																				
19	T300.2: consolidation	66 days																				
20	T300.3 Yearly review	24 days																				
21	Year 2006 data:	1 day																				
22	T300.4: analysis of de	65 days																				
23	T300.5: consolidation	65 days																				
24	T300.6 Yearly review	24 days																				
25	Year 2007 data:	1 day																				
26	T300.7: analysis of de	66 days																				
27	T300.8: consolidation	66 days																				
28	T300.9 Yearly review	21 days																				
29	WP400: Dissemination	#####																				
30	T400.1: initial dissem	262 days																				
31	T400.2: implementati	415 days																				

References

- [1] SARDINE DOW, Contract no.: AST-CT-2006-030704, Version 1.0, 21/March/2006.

Appendix A Dissemination

The SARDINE project extended over a period of thirty months. It has provided a report on the status of ATM R&D in Europe on a yearly basis, which included a tentative complete recording of ongoing, planned and completed R&D, as well as analysis and an appraisal of trends and needs.

The work package 400 aimed at providing an adapted vision of the ATM R&D activities to the aviation community by disseminating and marketing the information obtained in the data collection and the data analysis activity.

The present D400 document describes the communication strategy document. Key drivers to develop the communication strategy are:

- Identification of SARDINE/ARDEP audience
- Identification of exploitable knowledge and its use
- Some communication means and disseminating tools that may be used by the SARDINE Consortium
- Actions performed within the communication strategy
- Results on the implementation of this communication strategy

Audience

The SARDINE/ARDEP audience has been classified along two main axis:

- By domain of activities (CNS, ATM...)
- By function (top-middle R&D manager, R&D project manager, EC Project Officer, ...)

The typical audiences and forums targeted by the SARDINE/ARDEP initiative are:

- The European Commission
- SESAR Joint Undertaking
- Universities and research centres
- EUROCONTROL Agency
- Aircraft operators
- Airport and ATM service providers

Use of knowledge

Most responses to the customer survey on current use of the available material indicate that the Executive Summary of the Green Book is the most frequently used, particularly at management levels where an overview is required in order to enable the user to ask an analyst to seek further details or to issue challenges to the R&D community.

The main use of both the Executive Summary and the Green Book **is to gain an overview and gather key messages**. The details in the Green Book, when used, are considered to be valuable as a reference and, for some as a source of budget information and for identifying other organisations to contact them, either for information on a project in progress or as potential partners for new projects. The data is also used for marketing purposes. It was also commented that project managers in particular are interested in information and detail on individual projects. The "Analysis by Concept" chapter was mentioned the most as being of particular interest.

Opinions on use of the database were mixed, ranging from no use to daily use. For those using the database regularly, it was considered valuable or essential for their work.

Generally, the information in the Executive Summary and the analyses in the Green Book were felt to be set at the correct level, although there was a suggestion that they would be found less user-friendly if the user was not familiar with the data and classifications.

The satisfaction of website presentation ranges from satisfactory to good, although some responses stated that the website was only used infrequently. For all material, it was noted that the analyses would be of greater value if they could be available earlier, with more up-to-date information.

External public like Industries could use the data base for strategic planning purpose through the public website. However, some improvements would be required in order to presents results along to industry related needs. Furthermore, the data delivers only an incomplete picture of R&D activities because some industry projects were lacking. Only EC projects are mentioned not industries own research topics.

Communication means

It was proposed to disseminate the key messages at two different levels depending whether the audience is top-level management or project manager/engineers.

Some communication means has been proposed such as: Presentations; Website (SARDINE/ARDEP); Reports, notes, executive summaries; Forum, workshops, events; Different publications (newsletters, etc.)

Communication actions undertaken

Due to the limited budget, the dissemination plan has been only partly put into actions. This part focuses on internal actions conducted amongst the SARDINE member organisations, including their participation to ARDEP ISN meetings. It has resulted in a close and increased coordination between SARDINE members, ARDEP members and EUROCONTROL, the ISN meetings becoming an exchange and communication network between SARDINE members, ARDEP ISN members and ARDEP Core Team (EUROCONTROL).

External actions have been performed indirectly through projects to which SARDINE member organisations have participated, in particular SESAR. No external meeting - such as participation to forums or workshops - has been organised.

Continuous dissemination is performed via the ARDEP data base which SARDINE members have filled. The ARDEP Green Book and/or internal analysis about the results of ARDEP collections are disseminated within SARDINE organisations and other interested parties.

Results on the implementation of this communication strategy

Although, there was not enough budget and limited effort to communicate outside the consortium, the implementation of the communication strategy has contributed to:

- Extended ATM R&D visibility throughout the years to monitor the changes in R&D trends due to SESAR through SARDINE contribution to data collection and analysis;
- Better quality data, more consistency and more completeness of the overview of ATM R&D Data in Europe through closer coordination between SARDINE/ARDEP members and a more intense communication with the project leaders;
- A better communication between Research Centres (DTI, NLR, DLR, ...) through regular SARDINE/ISN meetings;
- Improved SARDINE/ARDEP data usage within each organisation through:
 - o Exchanges of best practices during ISN meetings,
 - o A better understanding of users' need (Customer Survey)
 - o An enhancement of management knowledge of possibilities of using data for strategic decision making
- The improvement of the ARDEP website interface through experienced feed back of SARDINE members during ISN meetings.



END OF DOCUMENT