



*Coordination Action for the
integration of Solar System
Infrastructures and Science*

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Dissemination and Use Plan

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<i>Editor:</i>	R.D. Bentley , UCL-MSSL
<i>Contributors:</i>	Anita Heward (UCL-P&A), Thierry Fouchet & Emilie Drobnes, (OBSPARIS), Hanna Sathiapal (FHNW)), Mauro Messerotti (INAF)
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Revision History

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1.0	15-Sep-2010	R.D. Bentley	First reasonably written version
1.1	22-Sep-2011	R.D. Bentley	Brought document up to date and added information about networking

Note: This document will continue to undergo revisions during the implementation phase of HELIO to incorporate the evolution of ideas, changes and improvements.

Overview.....	1
Dissemination Activities.....	2
Web Pages.....	2
Publications and Presentations.....	2
European Solar System Media Centre.....	3
Vision for Solar System Science Workshops.....	3
Networking.....	4
Community Coordination Meetings.....	4
Space Weather Community.....	4
Communities within Solar Physics.....	4
IVOA and IPDA.....	5
Discussions with Related Projects and Communities.....	6
Related FP7 Projects.....	6
Scientific Cloud Computing infrastructure for Europe.....	6
Earth Cube.....	7
Concertation Meetings.....	7
Bibliography.....	8

Dissemination and Use Plan
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Overview

The purpose of this document is to describe the Dissemination and other Networking activities that are being undertaken with the CASSIS project.

The Dissemination activities are intended to raise the profile of the CASSIS within the communities that constitute heliophysics and within the wider community. The activities are divided into the following general areas:

- A Web presence through a set of project Web pages and the Web Portal
- Publications in journals
- Presentations at scientific and technical meetings
- Establishing the Solar System Media Centre

In order to make CASSIS a success we need to make as wide an audience as possible aware of its aims; we are planning activities in the following areas:

- Networking activities including Community Coordination Meetings (CCM)
- Hold three “*Vision for Solar System Science*” Workshops

These are discussed in more detail in the following pages.

Note: In order to keep the description of these activities up to date, some parts have been split off onto the CASSIS Web pages.

Dissemination Activities

There are many threads to the HELIO dissemination activities. Of these, the Web pages and Presentations at conferences represent are the most immediate face of the project.

Web Pages

The Web pages are still under construction; the intention is that they will be divided into three basic areas:

1. General pages that are intended to inform the viewer about the project
2. Internal pages that contain details of the running of the project
3. A Web Portal that will be the face of the Media Centre.

The purpose of the **general Web pages** is to inform the viewer of different aspects of the project. The layout of the material has evolved over time, as of September 2011 the pages are broken down as follows:

- Under the *top-level page* outlines the objectives of the project, describe the science of heliophysics, and report on news items. The *Home* page contains general information about the project and describes its objectives
- Pages under the *Activities tab* describe the work plan of CASSIS, information about Standards and Interoperability and various discussion topics including Metadata and Coordinate Systems.
- On the *Guidance pages* an evolving set of guidelines related to data storage can be found.
- On the *About Us pages* we list the members of the CASSIS Consortium report on the collaborations that we have established. We also provide an up to date list of Publications.

The CASSIS **Media Centre** is still being developed – *see later*.

Publications and Presentations

We should try to identify as many opportunities as possible to submit papers to journals. These should be a mixture of papers describing the project, how it is implemented and the science use cases that it can support.

Whenever possible, everyone within the Consortium should try to make presentations describing the objective of CASSIS and what is planned.

We have given talks and/or presented posters at many major meetings, including COSPAR, EPSC 2010, ESWW 2010, AGU 2010, EGU 2011 and NAM 2011.

A list of presentations is given in the Bibliography in Appendix A. An up-to-date list of presentations made at conferences and elsewhere is given on the CASSIS Web site¹.

¹ The publication list can be found at www.cassis-vo.eu/aboutus/cassis_publications.php

European Solar System Media Centre

Under FP7, Europlanet RI has set up the Europlanet Media Centre, which is working to build channels of communication between the planetary science community and the media with the primary aim of Europeanising and localising the news coverage of planetary research. As well as providing a press office and media distribution service for planetary scientists, the Media Centre puts journalists and broadcasters in touch with local scientists, who can provide comment and give a regional viewpoint on planetary science stories and counter the impression that planetary science is an activity that is poorly represented in Europe.

CASSIS is building on this capability, extending the remit of the **Media Centre** to the wider topic of science of the Solar System. The CASSIS Media Centre will expand its activities to support the heliophysics and solar terrestrial communities, providing access to the media distribution service, offering advice to scientists on how to identify suitable stories for the media and draft press releases, as well as building links between the solar communities and the media. The majority of the work of the Media Centre will be carried out via the web and through email.

The CASSIS **Web Portal** will provide access to information for the media and for researchers, links to relevant contacts, training and materials; policy- and industry- relevant pages will also be added. As a result, the Media Centre will become a "first port of call" for the wider solar system research community who wish to engage with the media, for journalists who wish to find out about any aspect of solar system science and for policy makers and industry looking for information and contacts.

The CASSIS Media Centre and Web Portal are in the process of being established but progress has been made. The public outreach leads from the three projects have all provided information about their activities and a survey of existing resources is complete. The architecture of the Web Portal is being developed and a revised Web site including the portal is go live early in 2012.

Vision for Solar System Science Workshops

Science within the solar system is currently fragmented into a number of different communities. HELIO, Europlanet RI and SOTERIA bring together the scientific communities involved in heliophysics, planetary science and solar terrestrial research respectively and Europlanet's Technology Foresight workshops provide a platform for the planetary science community to discuss with industry the scientific challenges – and possibilities – of future exploration of the Solar System. However, this is just a part of what is needed to establish a coherent vision spanning all areas of solar system science.

CASSIS will host three meetings that will bring together all stakeholders, including scientists, industry, funding bodies, government agencies and policy makers at the national and European level in order to discuss the role and opportunities created by solar system science within the context of global research, the European jobs market and industry and to champion the concept of joined up solar system science within Europe.

The first Workshop is still in the planning stage.

Networking

The idea of networking within CASSIS is to engage the different communities in discussions aimed at gathering user requirements and feedback that will ensure the most useful overall interoperability between the project involved and with the wider communities. There are several threads to the networking activities, those relevant to this document are:

- Discuss requirements with other partners and the wider community
- Discuss ways of increasing interoperability with related communities
- Hold Community Consultation Meetings

Each serves a different purpose but ultimately the purpose is to forge links with related groups and communities so that we can involve them in discussions on interoperability and standards (WP2) and in dissemination activities (WP4) such as the *Vision for the Solar System Science* Workshops.

Community Coordination Meetings

Community Coordination Meetings (CCMs) are opportunities to talk with the communities involved in the HELIO project, report on the project and seek user input. They also provide an excellent opportunity to recruit users that will participate in the User Groups and help test the capabilities of the project throughout its development.

CCMs could be held in conjunction with major international scientific meetings such as the *European Geosciences Union* (EGU; usually held in the spring, most recently in Vienna), the *European Space Weather Week* (ESWW; usually held in November, most recently in Belgium) and possibly also the *European Planetary Space Congress* (EPSC; usually held in September). We have also considered whether we should request sessions at such meetings devoted to heliophysics in order to allow the project to expand the set of Use Cases that are helping define the CASSIS project requirements.

During the first year of the project we determined that in order to gather some of the information that we needed the best approach was to work with the communities individually rather than hope to have a properly representative cross-section at any of meetings mentioned.

Space Weather Community

The space weather community in Europe comes together each year in the annual European Space Weather Week (ESWW); this was established as an analogue of the Space Weather Week hosted by the Space Weather Prediction Centre (SWPC) of NOAA in the US each spring.

CASSIS was presented at the Seventh European Space Weather Week that took place in Bruges (Belgium) in November 2010.

Communities within Solar Physics

Solar Radio Community

The Community of European Solar Radio Astronomers (CESRA) is an informal organization of European scientists to stimulate research of the outer solar atmosphere by means of radio waves and any other suitable diagnostics. The stated aims of CESRA are to “promote studies

of the radio emission of the Sun and related topics including solar-like stars, to promote new instrumental developments, to facilitate contacts between observers using different tools (remote sensing from gamma-rays to radio waves, in situ measurements), to stimulate collaboration between observers and theoreticians, solar, heliospheric and stellar physicists, to encourage young scientists in the field of solar radio physics, and to maintain contacts with all groups in the field within Europe and other parts of the world". Although most of the members of CESRA are European, their main annual meetings often include representatives from solar radio observatories from the US, Japan and other countries.

A presentation about Virtual Observatories – including HELIO, SOTERIA, Europlanet RI and CASSIS – was given at the annual meeting of CESRA that was held in June 2010 in La Roche en Ardenne, Belgium. One of the points made in the presentation was the need for improved standards in order to improve interoperability and facilitate access by virtual observatories. This point provoked discussion and the question was posed as to how HELIO could help the groups involved in CESRA improve the quality of their data. It was suggested that a User Group highlighting the needs of CESRA could be formed so that the needs of the radio astronomers could be discussed. It was also suggested that CESRA was an ideal body to start to define standards for use within the solar radio community globally and that HELIO could assist in this process. This proposal is being considered by the organization but it could be a good model on how to approach other groups relevant to HELIO and heliophysics.

Solar Optical Community

The European Association for Solar Telescopes (EAST) was founded in 2006 by a group of solar physicists from 14 European countries. The goal of EAST is to ensure access of European solar astronomers to world-class high-resolution ground-based observing facilities.

An EAST Workshop on the Solar Physics topic "Science with Synoptic Solar Telescopes" was held 4-7 October 2010 in Tatranska Lomnica, Slovakia. A presentation about HELIO and the need for better data and metadata standards was made; this generated a lot of interest on how improved the access could be provided to the observations made by the participants.

IVOA and IPDA

The International Virtual Observatory Alliance (IVOA) has until recently been very orientated towards astrophysics. As the source of many useful standards, the HELIO and Europlanet RI projects have looked to the IVOA for ideas and techniques when determining ways of addressing a number of problems.

The International Planetary Data Alliance (IPDA) is more involved in data than in general standards. It is drawing up the Planetary Data Access Protocol (PDAP) that it is hoped will eventually be the basis used for access to all archives of planetary data.

Both organizations are clearly relevant to what CASSIS is trying to do and through HELIO and Europlanet RI we have links with both of them. The three projects involved in CASSIS will work with the IVOA and IPDA to try to ensure all activities are coordinated with those of the communities.

Discussions with Related Projects and Communities

In this section we report on interactions that have taken place or are planned.

Related FP7 Projects

There are several projects funded under FP7 that cover topics or activities that are relevant to CASSIS.

Space Weather-related Projects

There are several space weather-related projects funded under FP7, mostly under the SPACE thematic programme; in addition, several others have been funded by the European Space Agency under their space weather initiative. Because the use datasets that are the same as, or overlap with those of the projects involved in CASSIS, our intention is to include them in CASSIS as observers in order to encourage their involvement in the process of formulating standards.

We have already started discussions with several projects that are studying solar energetic particle (SEP) events, including COMESEP, SEPServer and SEPTEM. We have also had discussions with the AFFECTS project.

Geo-Seas

Geo-Seas is implementing an e-infrastructure of 26 marine geological and geophysical data centres, located in 17 European maritime countries. The project is designed to enable users to identify, locate and access pan-European, harmonised and federated marine geological and geophysical datasets and derived data products held by the data centres through a single common data portal.

The work of Geo-Seas is clearly related to with the work of CASSIS albeit on the periphery of what we planned; it is particularly relevant to HELIO since recent trends in solar activity could have an influence on sea-surface temperatures. In discussion with the Coordinator of GeoSeas (Helen Graves, BGS), we have decided to explore the possibilities with the simple use case of examining which datasets could be of most use to the oceanographic community and whether their associated metadata are optimally formed.

Scientific Cloud Computing infrastructure for Europe

Recently (August 2011) the EIROforum² produced a "Strategic Plan for a Scientific Cloud Computing infrastructure for Europe". The Initiative was conceived by ESA (ESRIN) as a prospective for providing cloud services to space sector in Europe and has been expanded in collaboration with the IT section of CERN. They are trying to find a few flagship use cases to start things off - these would be high-profile applications that catch the public imagination and encourage others to use the services. Within the Initiative they are addressing actions related to the "Digital Agenda for Europe", including enhancing interoperability and standards - in this case for the European Cloud Computing Infrastructure so that geographically dispersed and separately managed devices, applications and services can interact seamlessly.

² EIROforum is a collaboration between eight European intergovernmental scientific research organisations that are responsible for infrastructures and laboratories: CERN, EFDA-JET, EMBL, ESA, ESO, ESRF, European XFEL and ILL

There are clear synergies between this Initiative and CASSIS and following preliminary discussions with the lead participants from ESA (Maryline Longert, ESRIN) and CERN (Bob Jones), the CASSIS Coordinator has been invited to participate in the project (on behalf of CASSIS) as an observer to help ensure that common interest are dealt with properly.

Earth Cube

The US National Science Foundation (NSF) is looking for “transformative concepts and approaches to create integrated data management infrastructures across the Geosciences. In a new partnership, the Geosciences Directorate (GEO) and the Office of Cyberinfrastructure (OCI) recognize the multifaceted challenges of modern, data-intensive science and education and envision an environment where low adoption thresholds and new capabilities act together to greatly increase the productivity and capability of researchers and educators working at the frontiers of Earth system science.”

We recently learned about this US-based initiative which is trying to established an integrated approach from Earth's centre out the Earth atmosphere /space boundary. It is clearly relevant to CASSIS and initial contacts with representatives of NSF (Rob Pennington, Office of Cyberinfrastructure) at the 9th e-Infrastructures Concertation Meeting (held in conjunction with the EGI Technical Forum) indicated interest in collaborating. We will continue to pursue this opportunity.

Concertation Meetings

Concertation meetings are held to encourage interaction between the e-Infrastructures projects that have funded with the hope of identifying synergies that will enhance the productivity of the programme.

CASSIS was represented at the 8th e-Infrastructures Concertation Meeting was held in Geneva on 4-5 November 2010 and at the 9th e-Infrastructures Concertation Meeting was held in Lyon on 22-23 September 2011

Bibliography

This section contains references for all the talks given, and papers published that are relevant to CASSIS.

Talks/Presentations at Conferences

R. D. Bentley, M. Messerotti, A. Csillaghy, J. Abourdarham, M. Hapgood, C. Jacquey and the HELIO Team, in "Virtual Observatory Projects", at Community of European Solar Radio Astronomers (CESRA), 15-19 June 2010, La Roche en Ardenne, Belgium

Robert Bentley, Christian Jacquey, Mauro Messerotti, André Csillaghy, Todd King and Chris Perry, in "Data Management within the HELIO Project", in *Planetary Space Sciences and Data Management (B09)*, at COSPAR, 18-25 July 2010, Bremen, Germany

R.D. Bentley and the HELIO Team, in "HELIO – A step into the Future", at European Planetary Science Congress 2010, 19-24 September 2010, Rome, Italy

Robert Bentley, in "Databases, Archives and Virtual Observatories", at EAST Workshop on Solar Physics "Science with Synoptic Solar Telescopes", 4-7 October 2010, Tatranska Lomnica, Slovakia

R.D. Bentley, in "The Role of Virtual Observatories in Space Weather and HELIO Use Cases", at International Advanced School on Space Weather Modelling and Applications, 18-29 October 2010, ICTP, Trieste, Italy

R.D. Bentley and the CASSIS Consortium, "CASSIS – Moving forwards on standards and interoperability", at 7th European Space Weather Week, 15-19 November 2010, Bruggs, Belgium

R.D. Bentley, M. Hapgood, J. Brooke, P. Gallagher, S. Zharkov, K. Benson, V. Shetty, C.H. Perry, P. Richards, A. le Blanc, D. Fellows, and the HELIO Team, "Using HELIO to address multi-spacecraft science use cases and the importance of CASSIS", in DAT: *"Novel methods for image and multi-spacecraft data analysis in the Sun-Earth system"*, at RAS National Astronomical Meeting, 17-21 April 2011, Llandudno, UK

Robert Bentley, "Report on SOTERIA and Overview of CASSIS", at "Let's embrace space", FP7 Space Conference 2011, 12-13 May 2011, Budapest, Hungary.

Posters at Conferences

Robert Bentley, Jean Abourdarham, Mauro Messerotti, Christian Jacquey, Peter T. Gallagher, Mike Hapgood and Karine Bocchialini, in "Using HELIO to Study Cross-Disiplinary Science Problems Using Data From Multiple Spacecraft", Poster, in *Multi-Spacecraft Observations and Modelling of CMEs and Stream Interaction Regions (D23)*, at COSPAR, 18-25 July 2010, Bremen, Germany

Bentley, R D, Lapenta, G, Blanc, M, Fox, P, Walker, R J and The CASSIS Team, "VOs and Heliophysics: Would anyone like some CASSIS?", Poster, in IN23B, at American Geophysical Union, 13-17 December 2010, San Francisco CA, USA

Robert Bentley, Giovanni Lapenta, Michel Blanc, Thierry Fouchet, Mauro Messerotti, Andre Csillaghy, Luis Sanchez and The CASSIS Team "CASSIS – Standards and Interoperability in

Solar System Science", in PS1.0: *"Exploring the Solar System: Missions, Techniques and policy Poster Programme"*, at European Geosciences Union General Assembly 2011, 4-8 April 2011, Vienna, Austria

Reports to Related Projects and at ICT Functions

Robert Bentley, "Using HELIO to address multi-spacecraft science and the importance of CASSIS", 3rd Soteria General Meeting, May 30 to 1 June 2011, Leuven, Belgium.