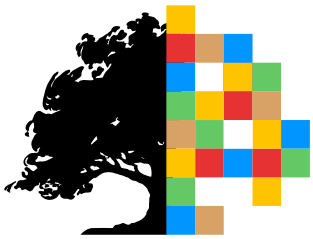

BIO_SOS

Project Title:	**BIO_SOS Biodiversity Multisource Monitoring System: from Space TO Species**
Contract No:	FP7-SPA-2010-1-263435
Instrument:	Collaborative Project
Thematic Priority:	FP7-SPACE-2010-1
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Project Management and Quality Assessment Plan

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Main Authors:	Carmela Marangi (CNR) and contribution by : Andrea Baraldi (BARSEC), Fifamè Koudogbo (AI), Francesco Lovergine (CNR), Maria Petrou (CERTH)

Project ref. number	**263435**
Project title	**BIO_SOS: Biodiversity Multisource Monitoring System: from Space to Species**

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Partner responsible	CNR
Author(s)	Carmela Marangi (CNR) and contribution by : Andrea Baraldi (BARSEC), Fifamè Koudogbo (AI), Francesco Lovergine (CNR), Maria Petrou (CERTH)
Editor	Carmela Marangi (CNR)
EC Project Officer	Florence Beroud

Abstract	The Quality Assessment Plan (QAP) is established and implemented, with the objective of ensuring excellent outputs of the project activities and thorough quality review of the project deliverables and regular assessment of the BIO_SOS progress and achievements. The QAP specify all quality control procedures, including responsibilities contract management, documentation control, documentation formats and exchange rules, and organisation of meetings.
Keywords	Management, Quality Assessment, Communication Rules, Data Policy.

Signatures

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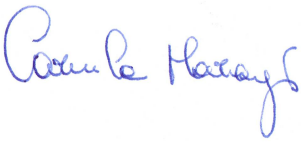
Carmela Marangi	Project Management Team, CNR	24-02-2011	
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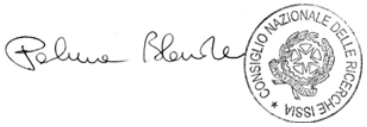
Palma Blonda	Coordinator and responsible for D8.5, CNR	24-02-2011	
Rob H.G. Jongman	WP8 Leader, ALTERRA	24-02-2011	
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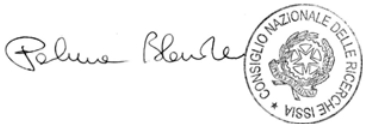
Maria Petrou	Quality Manager, CERTH	24-02-2011	
Palma Blonda	Project Coordinator, CNR	24-02-2011	

Table of Contents

1. Executive summary

BIO_SOS is a complex project in terms of both the structure of the Consortium and the work flow. For such a reason, management, coordination and quality assessment issues should be detailed as much as possible. The present document D8.5 Project Management and Quality Assessment Plan describes the BIO_SOS approach of implementing an appropriate management and quality assessment framework. The document addresses more general issues regarding project structure, partner responsibilities, documentation control, as well as specific issues about data policy, EO data requirements, exchange rules, etc.

2. Introduction

The quantity and the quality of the BIO-SOS project objectives demand a well defined management and coordination structure as well as an effective quality assessment framework. The Quality Assessment Plan (QAP) is established and implemented, with the objective of ensuring excellent outputs of the project activities and thorough quality review of the project deliverables and regular assessment of the BIO_SOS progress and achievements. The present document D8.5 Project Management and Quality Assessment Plan describes the BIO_SOS approach of implementing the management and quality assessment framework linking together all the project components. It specifies all quality control procedures, including responsibilities (Project Co-ordinator, WP Leaders, Task Leaders and other partners), contract management, documentation control, documentation formats and exchange rules, organisation of meetings etc.
The QAP is a fundamental tool for the management of projects with relevant complexity in terms of partner's number and working plan, as it is the case of the BIO_SOS project. The present QAP has been developed by the Quality Group and formally agreed by all Partners at an early stage of the Project. The QAP include the following key sections and types of information:

- Project objectives.
- Project organisational structure.
- Responsibilities of the project manager, work package leaders and all participants.
- Project documentation description and management.
- Activity quality procedures for contract management, documentation control, document formats and software exchange rules.
- Organisation of meetings.

As an essential management tool, the QAP will be rigorously applied, for example as check-lists for important procedures, and kept up-to-date throughout the project.
The progress of each partner will be regularly monitored by the Project Coordinator based on a six-monthly report summarising progress, achievements and usage of resources to be prepared and submitted by each partner to the Project Coordinator. This task also includes strategic monitoring of BIO_SOS activities to ensure all project objectives are achieved in time.

To ensure the quality of the project product, each project deliverable or public document has to pass a quality assurance and assessment procedure defined in the QAP.

3. Project objectives

BIO_SOS (**Bio**diversity Multi-**S**ource M**O**nitoring **S**ystem: From Space To Species) is a response to the Call for proposals FP7- SPACE-2010-1, addressing topic SPACE.2010.1.1-04 "Stimulating the development of GMES services in specific areas" with application to (B) BIODIVERSITY.

The main objective of BIO-SOS is the development of an operational ecological modelling system suitable for effective and timely multi-annual monitoring of NATURA 2000 sites and their surroundings in areas particularly exposed to different and combined types of pressure. Study areas in three Mediterranean and two Northern European Countries are proposed. To extrapolate from European test cases to a general use, additional areas are considered in an ICPC Country, i.e. Brazil, where Natura 2000 system does not exist, but the availability of an advanced monitoring system for biodiversity protection is particularly urgent.

In the European Union (EU) there is a legal obligation for EU Member States to report on status and trends of species and habitats of European importance through the Habitats and Species Directive, the Birds Directive and the Water Framework Directive. However, the 2009 summary report on Article 17 of the Habitats Directive concludes that data about species and especially habitats are often collected in various ways. For this reason, consistent stacks are unavailable or insufficient in their spatial coverage [1]. The reporting obligations for the European Directives are therefore difficult to implement with uncoordinated data. This is particularly the case in Mediterranean countries that typically suffer from lack of datasets of good quality.

As national and regional differences in policies and funding occur, there is still a lack of:

- Long-term baseline data.
- Standardized, rapid and cost-effective monitoring techniques.
- Methods for assessing the significance of measured changes and evaluating trends.
- Modelling techniques for evaluating the combined impact that different drivers affecting soils and/or vegetation may have on biodiversity in time.
- Adequate communication to disparate, often contrasting, audiences corresponding to different groups of stakeholders.

A further issue is the lack of a centralized management of biodiversity data and a land cover change monitoring system, even at the same regional-local level.

The aforementioned factors require a noticeable effort to initiate a continuous, operational and quasi real-time monitoring of the Natura 2000 sites with special emphasis on their boundaries. Users' requirements include techniques to make this information processing system operational, namely:

- Work at spatial scales 1:10,000 or finer, where habitats ought to be represented.
- Increase the system degree of automation (user-oriented).
- Increase the system computational efficiency.
- Increase the system accuracy (reliability).
- Increase the system robustness to changes in the input data set.
- Increase the system robustness to changes in user-defined parameters (compliance), if any.
- Reduce the system timeliness (which is the time span between data acquisition and product delivery to the end user; this is directly proportional to the required manpower).

- Reduce the system costs (e.g., by reducing manpower, exploiting open source software solutions, etc.).

Related to the aforementioned operational system requirements, common practice in Earth Observation (EO) data processing and understanding appears somehow inadequate for inferring habitat and related pressures definition at a satisfying approximation level. One main objective of the BIO_SOS project is to investigate whether this approximation can be improved using very high spatial and (possibly) spectral resolution images but no systematic historical VHR coverage exists for any site.

A further key challenge that needs to be developed is a *cost effective and timely* monitoring of changes in the land cover within and along the borders of protected areas, in order to judge the effectiveness in protecting and conserving the regions from human impacts. Habitat maps, which are at the base of indicators' extraction can be obtained by interpreting land cover maps of sufficient details together with ancillary data, other EO derived products and by re-labelling and, where appropriate, by merging similar land cover classes, according to the 92/43 EEC Directive and to General Habitat Categories (GHCs) [2] based on life forms as defined by previous BioHab project (see Annex I of BIO_SOS and references therein).

In this framework, BIO_SOS is a pilot project which intends to:

1) Adopt and develop novel operational automatic high spatial resolution (HR), very high spatial resolution (VHR) and hyper-spectral resolution EO data pre-processing and understanding techniques for land cover (LC) map and LC change (LCC) map generation eligible for use in biodiversity monitoring. (This is tantamount to saying that BIO_SOS is expected to provide improved operational core service products with respect to state-of-the-art satellite-based LC and LCC mapping systems).
2) Develop a modelling framework (scenario analysis) to combine EO and on-site in-situ data in support to the automatic provision of biodiversity indicators and provide a deeper understanding, assessment and prediction of the impacts that human induced pressures may have on biodiversity. (This means BIO_SOS aims at developing and integrating new and existing models able to evaluate and predict trends in biodiversity issues. This will led to the development of *new downstream service* production.)

The *purpose of BIO-SOS has been elaborated in the following working objectives:*

1. Design of a service and system architecture (EO Data for Habitat Monitoring, EODHaM), user driven by Service Level Agreements (SLA);
2. The design and development of the full set of modules still required by the proposed system. These include:
   a) A battery of context-sensitive modules for feature extraction and class-specific fuzzy rule-based classification required to generate an LC map from a single-date of spaceborne imagery.
   b) Modelling modules for ecological knowledge base exploitation and scenario analysis at both: b.1) habitat level, for the automatic production of habitat maps from land cover maps and in-situ data;

      b.2) landscape level for indicators extraction (e.g. status, connectivity/fragmentation).
   c) Stratified semantic nets for:c. 1) automatic LCC detection useful for trend evaluation and c.2) warning signal for management authority.
3. Integrate the various modules.
4. Demonstrate the service/system in some Natura 2000 sites.

5. Consolidate the already existing uses of satellite images devoted to biodiversity assessment and monitoring, developed by previous projects as well as by ongoing projects (e.g. EBONE).
6. Identify and promote new utilisations of satellite imagery, according to new and old modelling needs required to maintain our NATURA 2000 sites safe and healthy through the direct involvement of users in the partnership.

4. Project organisation

The project is organised on 8 work-packages (WP) and the work flow is described in the following flow-chart. WP1 (Project Management) and WP8 (Dissemination and Exploitation) are intended to feed in and out the whole process.

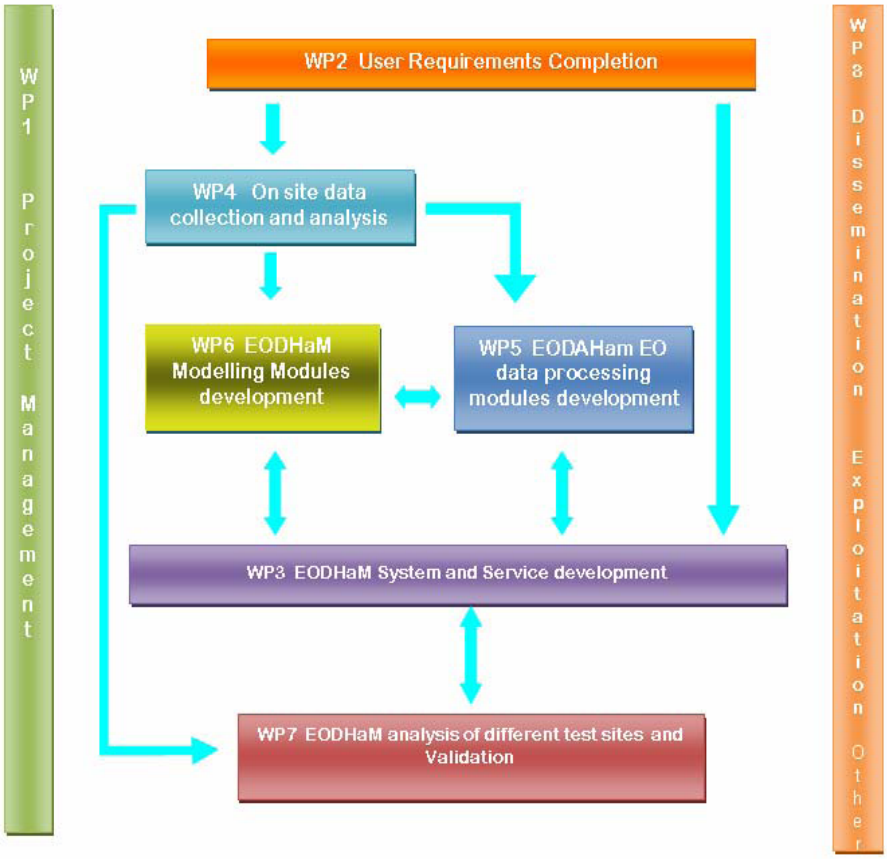


Figure 1: Diagram of the BIO_SOS project WP organisation

4.1 Management Structure and Roles

The BIO-SOS project consists of 15 participating contractors bound by the terms and conditions of

- The contract that fixes the rights and obligations towards the Commission (Grant Agreement)[3].
- The agreement between the partners which fixes the rights and obligations of partners to one another (Consortium Agreement)[4].
- The rules set up for the project and the different Work Packages.

This section details the management structure and rules for the project in order to

1. Ensure the execution of professional management procedures in the project.
2. Define decision making procedures and information flows.
3. Define performance controls and quality assurance in the achievements and deliverables described in the Description of Work (DOW).
4. Organise the implementation of the project in accordance to the rules of the European Union.

5. Guarantee that the rights and obligations of the contractors are kept compliant with the contract signed with the European Commission and the project agreement among the partners.
6. Manage the knowledge base and implement a suitable strategy for knowledge management respecting the intellectual property rights of the participants.
7. Address gender equity issues when needed.

The partners in BIO-SOS identified the need for strong coordination of all work packages in the project and for open communication within the consortium and with the REA and the stakeholders. The structure described in Figure 2 is designed to provide a structure that can guarantee the achievement of the objectives:

- The project responsibility is with the Project Coordination Committee, composed by the Coordinator and the Work Package Leaders.
- The daily management is carried out by the Project Coordinator in co-operation with the Work Package Leaders and the Project Management Team.
- The ultimate decision-making body of the Consortium is the General Assembly of Partners.
- An Advisory Board is established to arrange extensive international and cross-disciplinary consultations for the project.

In addition to the organogram shown in Fig. 2, two further levels complement the management structure

- A Quality Committee chaired by the Quality Manager.
- An Exploitation Team chaired by the Exploitation Manager.

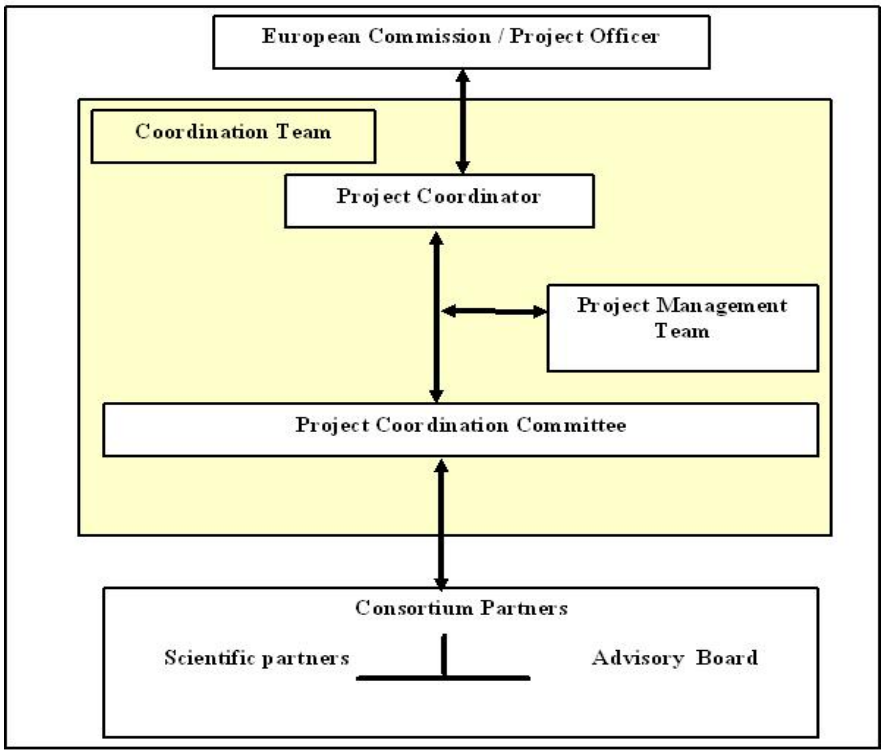


Figure 2: Interaction between the actors of the BIO_SOS project

4.2 Project Coordinator

The Project Coordinator (PC) is responsible for:

- Representing the Consortium towards the EU.
- Ensuring a smooth flow of information and distributing all relevant communications from the Commission.
- The administrative management of the project, which includes the distribution of the EU financial contribution as well as the periodic financial reporting.
- The day-to-day overall monitoring and coordination of the project.
- Monitoring the performances of partners against contractual obligations.
- The updating of the work plan following the Project Coordination Committee's and General Assembly's decisions.

For the management of the project the PC will be supported by the Work Package coordinators who are participating in the Project Coordination Committee. The coordination team (project coordinator, project management team, coordination committee) will be in close contact during the whole project.

4.2.1 Project Management Team

The Project Management Team (PMT) assists the Project Coordinator in the day-to-day management of the project. The project management team will be located in the institution (CNR) of the project coordinator. For optimal and efficient scientific, technical and financial/administrative coordination of the Project, the coordinator (Dr. Palma Blonda) will be supported by:

- Dr. Carmela Marangi and Dr. Dino Torri to audit the R&D performance of the project and ensure accomplishment of the technical and scientific objectives as well as project management.
- Dr. Biagi and Dr. Francesco Lovergine will support the coordinator for EO and in-situ data handling/ integration as well as for dissemination activities.
- Dr. Giuseppe Bono will take care of the administration of financial matters related to the reception of funding from the EC and its disbursement to the BIO_SOS partners, in order to ensure that all financial targets are accurately met, and all payments are made in a timely fashion supported by the CNR central administrative and financial departments. Dr. Bono will also collect the cost statements/audit certificates and will provide financial reporting.

4.2.2 Project Coordination Committee

The Project Coordination Committee (PCC) is responsible for the project. The daily management is delegated to the Project Coordinator and the Project Management Team. The Project Coordination Committee consists of the WP leaders and is chaired by the Project Coordinator. Members will meet at each project meeting and every six months and will stay in regular contact during all the project duration. When required, telephone or video conferences will be organised in between regular meetings.

The Coordination Committee is responsible for

- Monitoring all activities towards the general and working objectives of the project.
- Agreement on the working program and the interaction between the Work Packages as well as amendments to the work program.
- Ensuring the mutual input of Work Packages and its coordination.
- Publication, distribution and updating the working rules of the project.

- Agreement on possible changes and adjustments in work packages, time-lines, consortium composition and budget allocations.
- Submission of the agreed proposal to the General Assembly for the final decision.
- Approval of the agenda for project meetings.
- Approval of the agenda and programs for regional workshops and the final conference.
- Coordination of steering and quality assurance efforts with the Advisory Board and the Quality Committee.
- Other issues of research, discussion and dissemination of project results.

4.2.3 General Assembly of the Consortium Partners

The ultimate decision-making body of the Consortium is the General Assembly of Partners (GAP) which meets at least once a year.

The General Assembly:

- Approves updates of the work plan.
- Can declare a Party to be a Default Party and decide whether its participation has to be terminated.
- Approves the entry of a new Party to the Consortium.
- Handles issues or conflicts that cannot be solved at the Project Coordination Committee level.

The Project Coordination Committee makes proposal to be decided upon by the General Assembly.
Rules for convening meetings, agenda notifications, decision processes as well as mutual responsibilities are listed and detailed in the Consortium Agreement.

4.2.4 Advisory Board

An Advisory Board (AB) is formed from national and regional stakeholders and policy advisors to maintain close relationship with national and international policy. The members of the AB work together in WP8 and are committed to the project on management costs. The WP8 coordinator, as a member of the Project Coordination Committee, will make sure that the conclusions of the AB meetings are adequately taken into consideration in the decision making process during the project. Members of the AB will also be consulted individually on special aspects. Advisory Board members have been proposed at the Kick-off meeting from, among others, the following organisations:

- GEO-BON, the GEO-working group on biodiversity; however, this is already represented within the project.
- European Stakeholders and National Initiatives on Monitoring Biodiversity such as Diversitas, EEA and relevant European Topic Centres such as ETC BD, the LUCAS project (EUROSTAT).
- Staff members of EC DG ENV and JRC.
- Representatives of national and regional authorities (depending on the decentralisation trends in the different countries) such as the ICNB (Portugal), ICONA (Spain), ISPRA (Italy), Goulandris Museum (Greece).
- Representatives of NGOs.
- Representatives of World organisations on biodiversity protection (such as UNEP-WCMC, Ramsar secretariat, CBD secretariat).
- The coordinator (or other key partner) of other GMES on-going project related to Biodiversity monitoring.

The Advisory Board shall be also established to arrange extensive international and cross-disciplinary consultations for the project and to organise peer-reviews of the main project reports by external experts. The Advisory Board meets at least once a year, as a rule during the annual project consortium meetings. Its responsibilities include:

- Overseeing the quality of project deliverables (internal evaluation in the form of peer-reviews) when required.
- Advising on and assisting the dissemination, international discussion and promotion of project results.
- Securing loyalty toward the project and confidentiality with regard to unpublished project deliverables and drafts.

The actual BIO_SOS Advisory Board is composed by:

- DG environment: Arno Kaschl.
- ESA: Marc Paganini.
- EC Joint Research Center (JRC), Institute for Environment and Sustainability (IES), coordinator of the Digital Observatory for Protected Areas (DOPA): Gregoire Dubois.
- MS.MONINA-FP7-Space-2010-1: Stefan Lang, Project Coordinator.
- ICNB, Portugal: Lagido Domingos, Regional Director.
- Puglia Region: Angela Barbanente.
- National Committee Natura 2000 (state committee): Prof. Despoina Vokou.
- Ministero Ambiente, Italia: Eugenio Duprè.
- International Union for Conservation of Nature (IUCN), Regional Biodiversity Conservation Officer European Union Representative Office: Ana Nieto.
- Chair of ENCA, Remote Sensing Manager Cyngor Cefn Gwlad Cymru/Countryside Council for Wales (CCW): Alan Brown.
- European Centre for Nature Conservation (ECNC), Senior Programme Manager - Ecosystem Services & Biodiversity Assessment / Green Infrastructure ECNC-European Centre for Nature Conservation: Jones Walters.

4.2.5 Work Package Leader

The coordination of the targeted Work Packages is the task of the Work Package Leaders (WPL). Coordination of a Work Package means that the Work Package Leader is responsible for the organisation of the work plan and the realisation of the deliverables of each Work Package. More specifically:

- The Work Package leaders will work in consultation with the partners of the project participating in the specific Work Package.
- They will elaborate the work plan for the work-package based on the objectives, the description of work and the deliverables to be reached.
- They will report the results at each Coordination Committee meeting.
- In case of disagreement on the Work Package or on deliverables the partners consult the Coordination Committee through the project coordinator and decide jointly.

The following table summarizes the Project Work Packages and their leaders.

WP Title	Leading Beneficiary
WP1. Project Management	P1. CNR-ISSIA. Palma Blonda
WP2. User Requirements Completion	P2. UOI. Panayotis D. Dimopoulos
WP3. EODHaM System and Service	P6. PKI. Daniela Iasillo
WP4. On-site data collection	P9. ICETA-CIBIO. João Pradinho Honrado
WP5. EO data processing modules implementation	P12. IRD. Laurent Durieux
WP6. EODHaM modelling modules development	P5. ATREE. Harini Nagendra
WP7. EODHaM analysis of different sampling sites and validation	P7. ALTAMIRA. Alain Arnaud
WP8. Dissemination, exploitation and other	P4. ALTERRA. Rob Jongman

4.2.6 Partner Project Leader

The Partner Project Leader (PPL) is the Partner-nominated person which held the responsibility of coordinating the Partner team's work in the Project. The PPL ensures a smooth flow of information within the Partner's organisation, and takes reasonable measures to ensure the accuracy of any information or materials she/he supplies to the other Parties. The PPL coordinates the collection of all the data necessary for the periodic technical and financial reporting, both internal to the Consortium and towards the Commission. PPL is responsible for establishing a continuous communication with the coordination team, especially if project deadlines are involved. In the absence of answers to urgent question posed by the coordinator, if that situation lasts for more than 30 days, procedures for declaring the PPL party a "Default Party" may be submitted to the General Assembly.

4.2.7 Task Leader

The Task Leader (TL) is responsible for the technical coordination of the activities of all the partners involved in a specific task of the Project. The TL is responsible for:

- Keeping the WPL informed on a regular basis of the progress status of the work plan.
- Collaborating with the WPL in the preparation and the timely submission of deliverables.

4.2.8 Quality Manager and Quality Committee

The Quality Manager (QM) is responsible for the Quality Assessment of all the project deliverables and the monitoring of all quality procedures carried out. The QM for BIO_SOS is Prof. Maria Petrou, C.E.R.T.H. The QM is assisted by the Quality Committee composed by:

- Alain Arnaud (Fifame Koudogbo) (ALTAMIRA INFORMATION).
- Palma Blonda, PC (CNR-ISSIA).
- Rob Jongman (ALTERRA).

as well as by the Project Management Team.

4.2.9 Exploitation Manager and Exploitation Team

The Exploitation Team (ET) consists of a representative of each Unit and is chaired by an Exploitation Manager (EM). The EM for BIO_SOS is Dr. Jens Stutte, PKI .
The Exploitation Manager will be responsible for:

- Updating the Plan on the Use and Dissemination of Foreground (PUDF) intellectual property, developed during the project as contractual requirement, and organizing any action necessary to protect the generated Intellectual Property Rights (IPR). The PUDF will be reviewed at the formal project meetings.
- Formulating a strategy for exploitation and dissemination in close co-operation with the Consortium. This strategy will identify exploitation opportunities, business scenarios and any further development activities.

The exploitation team will be consulted after each project meeting for the meeting report and whenever the Coordinator or the Exploitation Manager will need it (email and video conference). Meetings of PUDF will be summoned when necessary by the Coordinator, and the Exploitation Manager when absolutely needed.
The intellectual properties generated by the consortium will be protected by binding agreements, already recognized and established in EU projects, adopted at the beginning of project by all Partners.

4.3 Communication lines

Communication must be exchanged according to the following lines:

- Individual project partners report to their WP and Task Leaders.
- Task Leaders report to the WP Leaders.
- WP Leaders report to the Project Coordinator about scientific and technical management of their WP.
- Project Coordinator reports to the Project Coordination Committee about the overall management process.
- Project Coordination Committee submits its proposals regarding contractual matters, updates and changes in the work plan to the General Assembly.
- Project Coordinator reports the General Assembly about communications by the Commission relevant to all the parties.

4.4 Mailing List

The primary tool for daily communication is the e-mail. To facilitate the information sharing among the partners, two mailing lists have been set up. Communications intended for distribution to all the project members should be sent to

biosos@ba.issia.cnr.it

Mail addressed to the Project Coordinator and the Project Management Team, for administrative and financial issues, has to be sent to the address

biosos-pm@ba.issia.cnr.it

Both mailing lists are archived and archives are available to all subscribed users. The management list is restricted.

The BIO_SOS general mailing list includes all partner members in each WP. The list can be joined by any partner member by sending a request to biosos-pm@ba.issia.cnr.it.

Each Project Partner Leader will have to be sure that all members of her/his organization team have access to all the relevant information.

4.4.1 Rules for email communication

Users of the mailing list should refrain from an improper usage of the list, as by rules in IETF RFC1855 [10]. Mail intended for one-to-one or restricted groups communications should not be sent to the list but only to the interested parties.
The mailing list must be systematically used for messages relevant for the whole consortium and for the work plan implementation.
The email subject must contain all the useful information in order to allow an easy and rapid classification of the messages received: if related to a specific WP, Task or deliverable, the number of the WP/Task should be evidenced in the subject by adding a specific tag (e.g. WP6.5, T7.8, D8.1); an explicit title is requested in the case of meeting announcements, agendas, deliverable drafts etc.

Large files should not be sent as attachments. Two file repositories for uploading of either data or documents have been created as an ftp archive on a CNR-ISSIA dedicated serve and a shared documents area on the intranet of the project website.
An "URGENT" label in the email subject should identify any deliverable and decision deadline as well as urgent information by the Commission.
The word "NOTIFICATON" in the subject will signal the notification of up-coming deadlines. In that case the receipt of the email must be confirmed.
The word "REMINDER" will be used by the Coordinator for reminders to possibly defaulting partners. The procedure will be the following:

1) 1st reminder: the partner should reply with the requested information within 7 days
2) 2nd reminder: the partner should reply with the requested information within 3 days
3) Final reminder: the partner must reply within the same day

After 30 days have been passed without a proper answer, the Coordinator will start the procedure for a defaulting party to be submitted to the General Assembly for the final decision.

5. Project document management

The BIO_SOS is expected to deal with a large amount of of documents of different types: image dataset, related and auxiliary metadata, reports, handbooks, project documentation, software modules, etc.
To facilitate the file sharing among partners, two file repositories have been set up:

1) an FTP archive, hosted at CNR, collecting remote sensing data and metadata. An archive documentation is available in Appendix B (Fig. 3a);

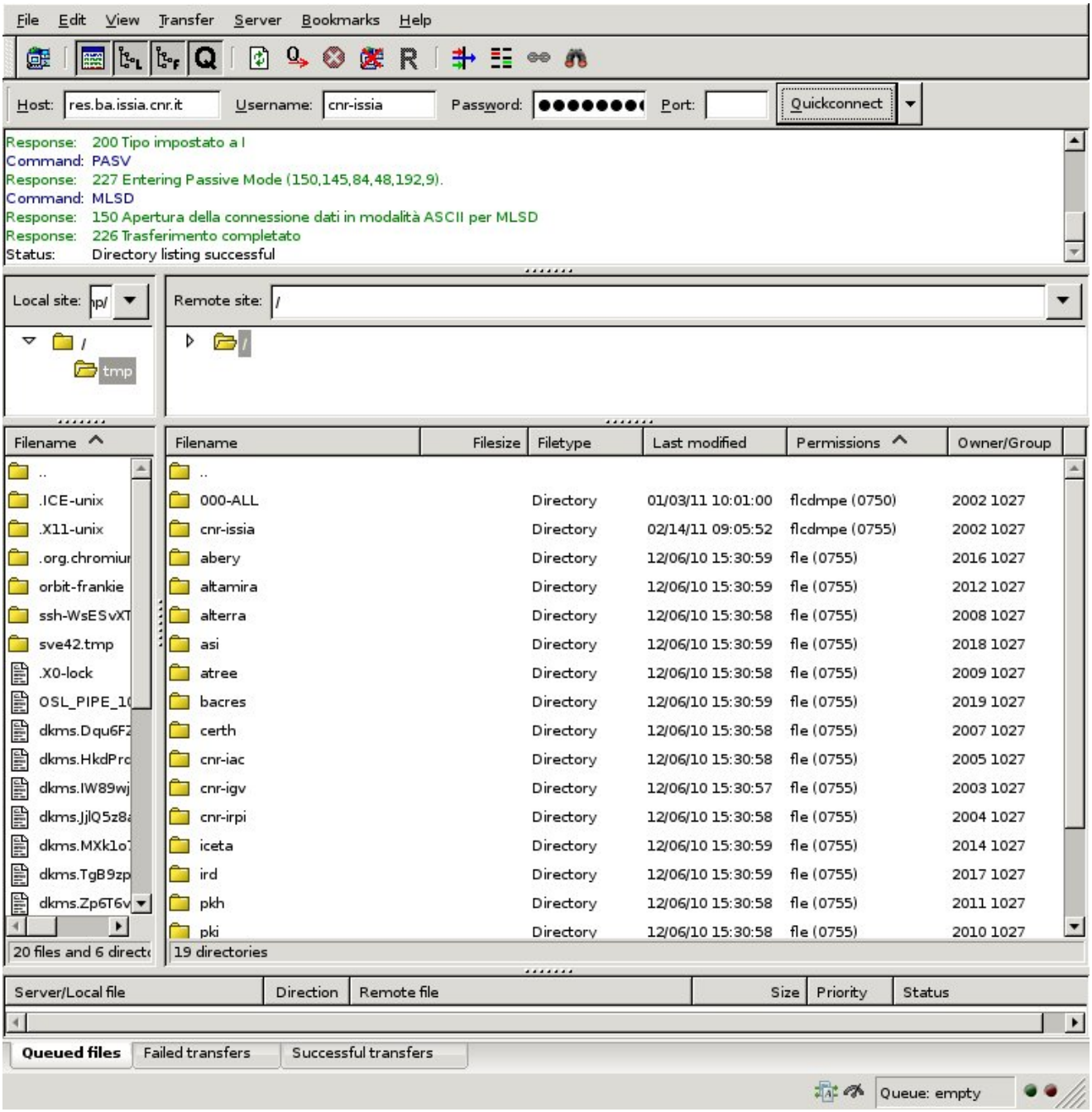


Figure 3a: FTP site structure

2) a Shared Documents repository (Fig. 3b) for reports, administrative documentation (internal reports, meeting agendas and minutes, document templates), hosted by the Intranet of the project website, at ALTERRA (https://portal2.wur.nl/sites/biosos/default.aspx). To access it, an account has been created for each PPL. To enable efficient collaboration and information and documentation exchanges, a user-friendly wiki section has been implemented.

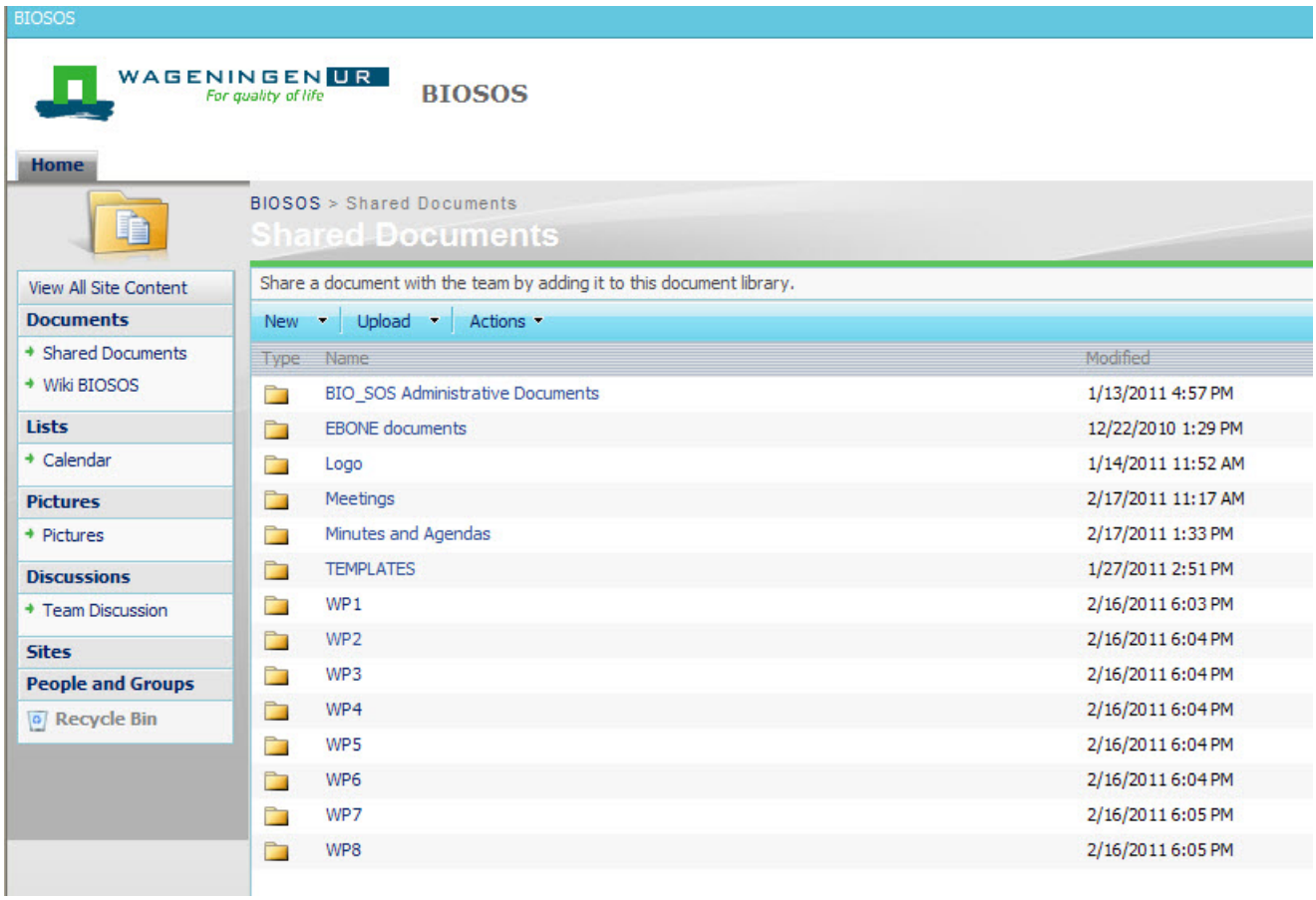


Figure 3b. Shared Documents at the BIO_SOS website

A number of document templates, for the main project needs, have been generated and are available in the intranet area of the website.
Here is a preliminary list of templates made available for BIO_SOS under the "Templates" folder in:

- Meeting Agenda.
- Meeting Minutes.
- Presentation.
- Standard Deliverable.
- Time sheets.

Further templates may be produced if required by the project.

5.1 Technical and Periodic reporting

Periodic technical and financial reporting is mandatory for the Consortium. A summary of the due reports is given in the following table. Details about requirements for the periodic reporting (Article 4 of GA) towards the European Commission and the web tools provided for the Project Management, are contained in the FP7 User Documentation [5], [6], [7], [8], [9].

To facilitate the contribution of each partner to the preparation of periodic reports, the main steps are summarized in wiki (https://portal2.wur.nl/sites/biosos/Wiki%20BIOSOS/Whattodo.aspx) (Fig. 4) hosted in the Intranet of the BIO_SOS website. An updated list of links to the FP7 relevant guides and users' manuals is also provided.

Report	Frequency	By Whom	To Whom
Progress report (internal	Every six months	Each partner	Coordinator/PCC
Time sheets	In line with partner's internal procedures	Each partner	Originals kept by partners for audit
Technical Report	Every 12 months (M12, M24, M36, M37)	Coordinator with partner contributions	European Commission
Periodic Report	Every 12 months, including final report (M12, M24)	Coordinator with partner contributions	European Commission
Cost statements (Form C)	Every 12 months (end of M12, M24, M36)	Each partner	European Commission

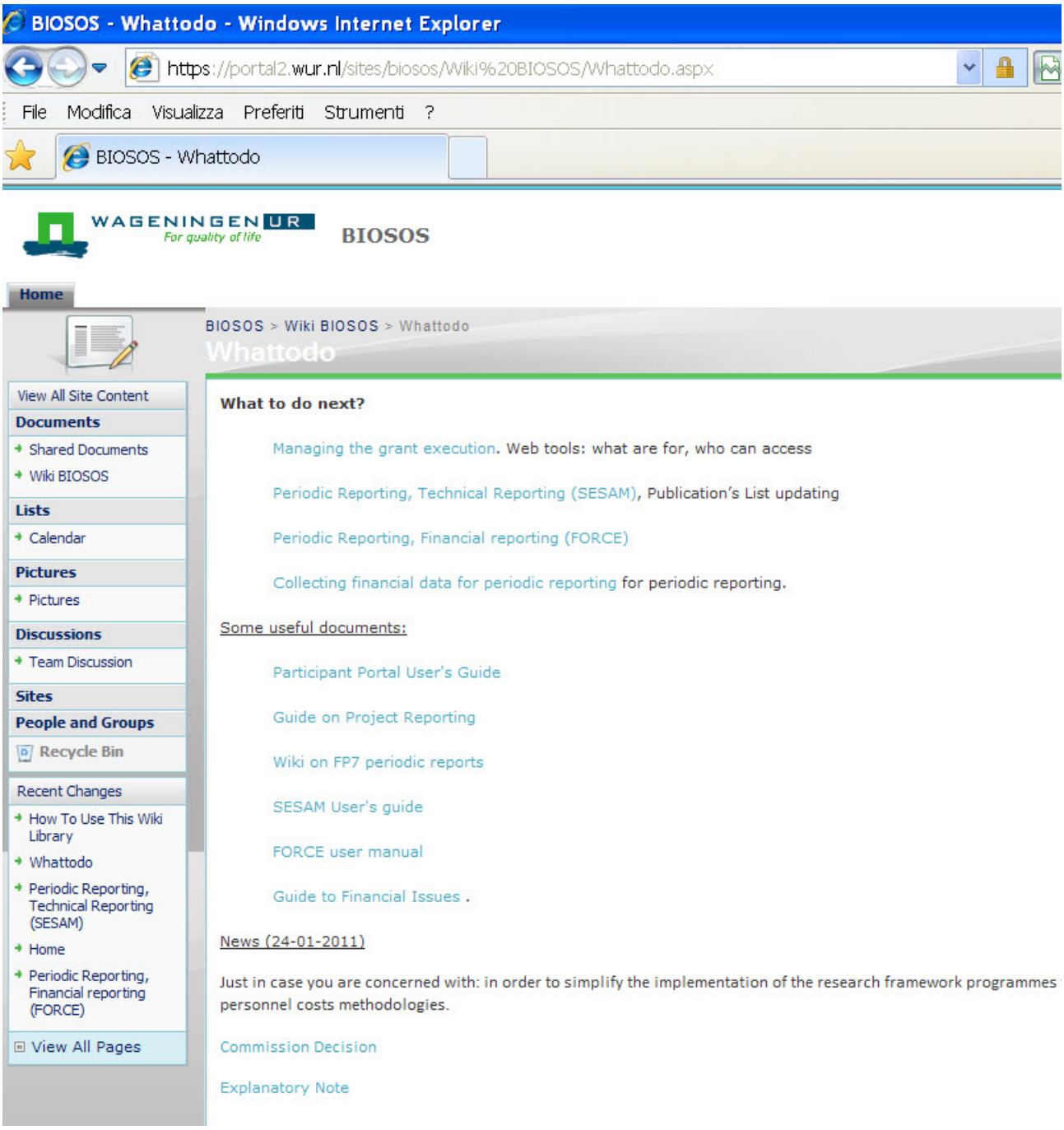


Figure 4. BIO_SOS website, wiki space

6. Data and Metadata Accessibility Policy

Herein find a general policy about data sharing criteria for project data.

6.1 Data accessibility policy

Only interested partners (i.e. partners that need to use inter-WP data to complete their tasks) should share their data. Geodata must follow the general Data Format Policy. Access details should be discussed among interested partners if data has specific licensing/IP issues. Details are expressed in the Project Data Flow Table (PDFT). Data must be maintained on the central archive.

Data requests must be managed by the PMT. If specifically required, the PMT is assisted by one or more explicitly appointed partners. Data will be available for the project duration.

Most of the commercially provided data by vendors (e.g. DigitalGlobe Inc.) are distributed under quite restrictive EULAs. That needs to be considered when acquiring images to be shared among more than one partners. At least a Basic license (i.e. multi-users with a reasonable number of licensees) should be considered.

6.2 Metadata accessibility policy

All partners have access to metadata of all other partners. That in order to promote information sharing among all participants. Metadata will be available for the project duration.

6.3 Access to data already available to partners

The licenses of datasets that have been acquired by partners independently to the BIO_SOS project have to be carefully analysed before being shared with other units in order to avoid unintentional abuses. Note that most commercial licenses also often limit *value-added* product distribution.

Data owned by partners are distributed under their sole responsibility.

7. Data Format Policy

In order to ensure interoperability for all different platforms and operating systems used by partners, strict guidelines about formats to be used for both data and documents have been introduced.

7.1 Geodata format policy

All formats used to exchange geographic data of any kind among partners must be INSPIRE [11] compliant and based on Open GIS Consortium [12] recommendations, in order to ensure easy interoperability, even when different programs are used. Also, it should be kept in mind that since target sites are localized in various areas of the globe, a global coordinate reference system is thus preferred.

7.1.1 Raster data

- Preferred format (up to 4GB): multiband/multifile GeoTiff.
- Reference ellipsoid/datum: WGS84.
- Reference plane projection: UTM (zone depends on area considered).
- Optional Color table: 24 bits (note that only 8 bit lookup tables per band are supported by all programs).
- Always provide a companion world file (.TFW) to allow at least a rough localization for people who do not use GIS tools.
- Use NULL/ALPHA whenever reasonable or useful.
- Use a suitable tiling for big grids (> 4.GB) and possibly provide a vector skeleton of the tile bounds in geographic coordinates.
- Avoid as much as possible proprietary formats (e.g. ECW, Kakadu, MrSid, etc.).
- Ask for advice before providing/ordering/requiring data.

7.1.2 Vector data

- Vector formats: shapefile and/or KML.
- Reference ellipsoid/datum: WGS84.
- Reference plane projection: UTM (zone depends on area considered).
- Provide an OGC WKT (or .PRJ) companion file.
- Avoid non ANSI 7bits ASCII encoding for alphanumeric data, or use UTF8 if necessary.

7.1.3 UTM zones

- Italy: 33-34N.
- Portugal: 29-30N.
- Brazil: 21-22S.
- Greece: 34N.
- Wales: 31N.

7.1.4 Input Data Sources, Processing Levels and Data File Formats to be used in WP5

Images to be processed in WP5 should be of the following types:

1) 7-band (channel B, G, R, NIR, MIR1, MIR2, and TIR).
   - Landsat-4/-5 TM.
     - Data processing Level:
       1R, 1G.
     - Data file format:
       GeoTIFF (supported by USGS and NASA).
       Hierarchical Data Format (HDF) (supported by USGS).
       Committee on Earth Observation Satellites (CEOS).
       Fast-L7A Format (supported by NASA) .
   - Landsat-7 ETM+.
     - Data processing Level:
       1R, 1G.
     - Data file format:
       GeoTIFF (supported by USGS and NASA).
       Hierarchical Data Format (HDF) (supported by USGS).
       Committee on Earth Observation Satellites (CEOS).
       Fast-L7A Format (supported by NASA) .
   - MODIS.
     - Data processing Level:
       1B.
     - Data file format:
       HDF at 1 km, 500 m and 250 m spatial resolution – TERRA platform (MOD021LM).
       GeoTIFF.
   - ASTER.
     - Data processing Level:
       1B.

2) 4-band (channel G, R, NIR, MIR1) SPOT-like.
   - SPOT-4 HRVIR.
     - Data processing Level:
       1A, 1B, 2A, 2B and 3.
     - Data file format:
       DIMAP.
       CEOS.
   - SPOT-5 HRG, same as above.
   - SPOT-4/-5 VMI, same as above.
   - IRS-1C and IRS-1D LISS-III.
     - Data file format:
       Fast Format (Version C) .
   - IRS-P6 LISS-III, same as above.
   - IRS-P6 AWiFS.
     - Data file format:
       Fast Format (Version C) .
       GeoTIFF .

3) 4-band (channel R, NIR, MIR1, and TIR) Advanced Very High Resolution Radiometer (AVHRR)-like.

- NOAA AVHRR.
  - Data processing Level:
    1B.
  - Data file format:
    KLM.
    SHARP.
    HDF .
- Meteosat 2nd Generation (MSG) SEVIRI.

4) 5-band (channel G, R, NIR, MIR1, and TIR) ENVISAT Advanced Along-Track Scanning Radiometer (AATSR)-like.

- ATSR.
  - Data processing Level:
    L1B.
- AATSR.
  - Data processing Level:
    L1B.

5) 4-band (channel B, G, R, and NIR) IKONOS-like.

- IKONOS-2.
  - Data processing Level:
    L1.
  - Data file format:
    GeoTIFF.
- GeoEye-1, same as above
- QuickBird-2.
  - Data processing Level:
    L1.
  - Data file format:
    GeoTIFF.
- OrbView-3, same as above
- WorldView-2, same as above.
- ALOS AVNIR-2.
  - Data file format:
    CEOS [15].
- RapidEye.

6) 3-band (channel G, R, and NIR) Disaster Monitoring Constellation (DMC)-like.

- (DMC) (to date this sensor is provided with no radiometric calibration metadata file).
- IRS-P6 LISS-IV.
- SPOT-1/-2/-3 HRV.
  - Data processing Level:
    1A, 1B, 2A, 2B, and 3.
  - Data file format:
    DIMAP.

7.1.5 Geotools

Geographic data can be manipulated using many proprietary and free tools, available on different platforms. Each tool is capable of managing at different levels of usability/flexibility most of the common formats and all formats suggested in this policy. A list of suggested tools follows.

7.1.5.1 FLOSS desktop tools and libraries

The following programs are free or open source software whose sources are available and can be modified, used and extended without restrictions:

- Grass GIS (http://grass.osgeo.org/).
- Qgis (http://www.qgis.org/).
- SagaGIS (http://www.saga-gis.org/en/index.html).
- Mapwindow (http://www.mapwindow.org/).
- Monteverdi (http://www.qgis.org/).
- Gdal/FWtools (http://fwtools.maptools.org/).
- OpenModeler (http://openmodeller.sourceforge.net/).
- NEST ESA Sartoolbox (http://liferay.array.ca:8080/web/nest).
- Python for scientific apps (http://www.python.org/).
- R and its packages (http://www.r-project.org/).

7.1.5.2 Freeware desktop tools

The following programs are not FLOSS, but can be used as are without restrictions or with very limited restrictions:

- TatukGIS Viewer (http://www.tatukgis.com/).
- Erdas Viewer (http://www.erdas.com/products/ERDASERMapper/ERDASERViewer/Details.aspx).
- Erdas Titan Client (http://www.erdas.com/products/ERDASTITANClient/Details.aspx).
- ECW plugins (http://www.erdas.com/products/ECWPlugins/Downloads.aspx).

Sources of the following program appear not immediately available or distributed. They could be available on demand, under specific agreements. Licenses could present significative limitations.

- Spring (http://www.dpi.inpe.br/spring/english/index.html).
- MaxEnt (http://www.cs.princeton.edu/~schapire/maxent/).
- Fragstats (http://www.umass.edu/landeco/research/fragstats/fragstats.html).

7.1.5.3 Commercial/Proprietary tools

Note that while most of the following programs are usable as desktop tools, user licenses available for partners could be limited/unavailable for the final system, and require specific agreements and fees:

- ESRI ArcGis.
- ITT Envi/IDL (a standalone IDL VM is available for free but does not allow all developments to be done).
- Erdas Imagine.
- Ecognition.

8. Activity quality procedures

The Quality Manager and the Quality Committee ensure that all documents sent to the Commission conform with the documentation standards described in this document (section 7.2).
The procedures which are being set-up are to guarantee that the requirements about timeliness and standards have been fulfilled.

8.1 Deliverable List

The list of the BIO_SOS project deliverables, ordered by delivery date is the following:

Del. no.	Deliverable name	WP no.	Nature	Dissemination level	Delivery date (months)
d2.1	List of indicators	2	R	PU	2
d8.1	Project Web site	8	O	PU	2
d2.2	Site descriptions	2	R	PU	3
d2.3	SLA for each site	2	R	RE	3
d8.5	Project Mgmt & QAP	8	R	PU	3
d6.1	Correlation between vegetation types	6	R	PU	4
d8.2	Project flyer	8	O	PU	4
d4.4	Selection criteria for EO data	4	R	PU	5
d3.1	SDD	3	R	PU	6
d6.10	Software for habitat maps production from LC	6	P	RE	6
d4.1	Pre-existing data sets	4	R	PU	8
d4.3	Protocols for new on site campaigns	4	R	PU	8
d5.1	Habitat maps	5	R	PU	8
d6.2	Landscape Pattern Analysis-State of the Art	6	R	PU	8
d4.2	Connection to other projects	4	O	PP	10
d8.8	First Policy Brief	8	R	PU	11
d1.1	12 month Report	1	R	PU	12
d3.2	ADD	3	R	PU	12
d4.5	Collaborative platform for data sharing	4	R	PU	12
d5.2	VHR land cover maps	5	R	PU	12
d5.3	SRC module	5	R	PU	12
d6.3	Pre-evaluation and rank sampling	6	R	PU	12
d6.6	Selected bio indicators	6	R	PU	12
d3.3	DJF	3	R	PU	14
d5.4	Hyperspectral data processing	5	R	PU	16
d6.8	Pressure's impact on habitats - methodology	6	R	PU	16
d8.9	Joint Recommendations	8	R	PU	16
d6.11	Rules for indicator extraction	6	R	PU	18
d6.7	ENM	6	R	PU	18
d5.5	RS-IUS second stage modules	5	R	PU	20
d6.4	Landscape pattern analysis	6	R	PU	20
d5.6	Change detection modules	5	R	PU	23
d1.2	24 month Report	1	R	PU	24
d6.5	Habitat state	6	R	PU	24
d6.9	Human impacts on habitat - framework	6	R	PU	24
d6.12	Software for indicators extraction	6	P	RE	27
d3.4	ICD	3	R	PU	30
d3.5	AIQ	3	R	PU	30
d3.6	STQP	3	R	PU	30

d8.3	**Field handbook**	**8**	**R**	**PU**	**30**
d3.7	**EODHaM SS**	**3**	**P**	**RE**	**32**
d3.8	**SUM**	**3**	**R**	**PU**	**33**
d7.1	**System analysis of Portugal site**	**7**	**R**	**PU**	**33**
d7.2	**System analysis of Greece sites**	**7**	**R**	**PU**	**33**
d7.3	**System analysis of Brazil sites**	**7**	**R**	**PU**	**33**
d7.4	**System analysis of all Italian and Dutch sites**	**7**	**R**	**PU**	**33**
d7.5	**System/Service validation**	**7**	**R**	**PU**	**34**
d8.6	**Technology Implementation Plan**	**8**	**R**	**PU**	**34**
d8.7	**Cost Comparison**	**8**	**R**	**PU**	**35**
d8.10	**Final Policy Brief**	**8**	**R**	**PU**	**35**
d1.3	**BIO_SOS Final Report**	**1**	**R**	**PU**	**36**
d8.4	**Cd-Rom**	**8**	**O**	**PU**	**36**

According to the standard notation:

Nature: **R** = Report, **P** = Prototype, **D** = Demonstrator, **O** = Other
Dissemination level:
PU = Public.
PP = Restricted to other programme participants (including the Commission and/or REA).
RE = Restricted to a group specified by the consortium (including the Commission and/or REA).
More specifically BIO_SOS deliverables are of the following types: report, software, service.

8.2 Procedure for deliverable reports

- The report should be written using the agreed template (see section 4).
- The report should be produced according to the document policy of Section 4.
- The report should be submitted 2 weeks before it is due to the Quality Manager for checking.
- The Quality Committee should respond to the author within one week of receiving the report, possibly with requested changes and comments.
- The QM, assisted by the QC, will check for presentation, completeness, accordance and accomplishment of the objectives as described in Annex I.
- The author should produce the final version within the following week.
- The final version is submitted to the Coordinator/PCC before submitting it to the EC.

8.3 Procedure for deliverable software

- New software should be written in one of the programming languages chosen in agreement with all parties who are involved in its production and improvement/maintenability.
- The software should be accompanied by a user manual that clearly states what are the input and the output, and their formats. In addition, the required environments and platforms where software runs should be clarified.
- The Quality Committee should receive this manual for checking 2 weeks before the deliverable software is due. The manual should be considered as a deliverable report.
- The software has to be accompanied by a written license which clearly states the purpose of the particular program, the authors, the copyright holder of the software, who has the right to use it and for what purposes, and possibly included warranties. For instance, the software may be

allowed to be used only for research purposes and its copyright holders could have to be consulted for commercial use.

- The software should be tagged with a version and release date so that improvements and changes could be easily tracked.
- The software should comply with consortium requirements in terms of functionality, performance and stability.

8.4 Publications

All papers published by members of the consortium in relation to project work should acknowledge the project according to Article II.30 of the GA.

- All publications must include the following statement to indicate that the said foreground was generated with the assistance of financial support from the European Union : The research leading to these results has received funding from the European Union's Seventh Framework Programme (FP7-SPACE-2010-1) under grant agreement n° FP7-SPACE-263435 "BIO_SOS -BIOdiversity Multi-Source Monitoring System: from Space TO Species".
- Relevant information about any published material should be input to SESAM [8].
- Digital copies of the publications have to be published on the EU OpenAIRE site [13]. The Guidelines for the EC FP7 and ERC Guidelines clearly urge you to comply with the depositing requirements. Researchers must make their best efforts to ensure Open Access to their publications. The EC FP7 guidelines stipulate that if you cannot comply, you should inform the Commission and provide the Publisher's letter of refusal. The stipulations of the Guidelines are such that there is no reason for Publishers to refuse cooperation. There is increasing evidence that Open Access availability of publications increases their visibility and use. It has also become clear that Open Access publishing does not harm the researcher, his/her institution, research or publication. So there is no reason not to comply with the Guidelines; there are only potential benefits to be gained.

For all deliverables, quality control actions are: conformity check to documentation standard; conformity check with respect to the project objectives.

9. Risk management

- Risk of project breakdown. European projects with a large consortium and world wide extensions cannot be carried out without the risk of failure in one or more tasks. In general the consortium is strong as it covers both large European institutes and much of the important expertise in the fields of indicator development, biodiversity measurement and monitoring both in its management and in its content. Partners are experienced in complex and international research; most of them have been involved in EU funded research at different levels. Partner Institutes have partly overlapping fields of expertise. Therefore, should one partner experience difficulties on a specific task and compromise a deliverable, substitution with another partner is possible. The project team is convinced that the proposed approach is realistic because parts of the work have been individually validated, although not yet collectively implemented.
- ICPC Partner. One ICPC partner is included in the consortium. The partner is highly specialised and renowned in the field. There is no risk involved in her participation.
- Non compliance with end-user requirements. There is a risk that the results will not be accepted by international, national and regional authorities. In Europe monitoring is partly done by national or regional agencies, institutional consortia such as ILTER and partly by NGOs. The Advisory Board is associated with BIO-SOS through WP 8 and allocation of funding. It consists of carefully selected stakeholders who will participate in different phases of the project and ensure compliance with user requirements. The same structure has been applied in EBONE (FP7) and appears to be fruitful for both the project and the stakeholders. This will increase the acceptance of the results and thus the chances of an actual implementation of the BIO-SOS approach. Dissemination of information and an easily accessible website will also help to involve stakeholders and increase acceptance. Moreover, the leader of WP8, who is also GEO BON co-lead and the project coordinator will be in regular contact with the committees at the international, European, national and regional levels. The contribution to world wide monitoring systems is guaranteed through the close link with the GEO BON.
- Strong interdisciplinarity. There are partners in the Consortium with different backgrounds and different levels of expertise. Mutual understanding and building on previous and ongoing projects is of utmost importance. It has already been foreseen that it is necessary to carry out internal capacity building and exchange of information. Therefore the first Workshop (WP2, task 2.1 has been crucial to build a strong basis of what is ongoing in for the CBD and SEBI and related EU-FP6 and FP7 projects on indicators, work in other projects such as EBONE and in the ENCA network on modular hierarchical procedures for monitoring that have been developed for in situ data collection and recent work carried out on the use of LiDAR and hyperspectral sensors.
- Technical risks. The technical risk of a major BIO_SOS project breakdown is reasonably low, which is also due to the parallel nature of the EODHaM system module implementation capable of diluting the project technical risk. If an unforeseen problem occurs in one of the case study areas, then the other case studies can continue as the system by itself does not depend on links between the case study areas. If one of the partners appears not to be able to deliver, then at least in the case studies the tasks can be taken over by other partners. Progress will be monitored carefully by the project coordinator.

9.1 Risks on data

The availability of historical data sets, i.e. both in-field data and EO multiscale data, on many test sites proposed in the project, as well as habitat maps produced by traditional monitoring techniques guarantees that BIO_SOS research activity can be carried out without problems.

Nonetheless, the following issues should be taken into proper account:

- EO data calibration. The main risk related to EO data employed as input by the EODHaM system concerns the availability of radiometric calibration metafiles. This is due to the fact that the application-independent operational automatic pixel-based Spectral Rule-based decision tree Classifier (SRC) adopted by the RS-IUS, at the first stage requires as input a multispectral image radiometrically calibrated into top-of atmosphere (TOA) reflectance (TOARF) or surface reflectance values, which is perfectly in line with the QA4EO international guidelines. It is noteworthy that radiometric calibration metadata appear to be incomplete for HR SPOT data (where band-specific offset parameters are missing). In practice, to be provided with a radiometric QI in agreement with the QA4EO, SPOT data require a relative radiometric calibration step in series with an absolute calibration stage. HR data, more reliable than SPOT's in radiometric terms, are the IRS data. However, the best compromise between spatial and spectral resolution is provided by the Landsat-5 TM and Landsat-7 ETM+ data whose radiometric metadata are very reliable. Among VHR data sources, QuikBird-2, IKONOS-2, ALOS AVNIR-2 and RapidEye images are considered suitable for absolute radiometric calibration. Unfortunately, to date, VHR GeoEye-1 and WorldView-2 data appear not to be provided with radiometric calibration metafiles.
- Unsuitable data. There is a risk that a proposed candidate BIO-SOS data set would not be acceptable for the intended use. In that case the contacts with the regional authorities and related projects will be sufficient to achieve alternative datasets in all participating countries. Part of the data is already available to the consortium and the data for the Amazon are free downloadable from the INPE website.
- Lack of ancillary data. In the case adequate ancillary data for certain regions might not be available (including DEM) or are too expensive, users who signed SLAs have ensured the access to user-owned data sets at no cost (as user contribution) and, if possible, a parallel user investment into ancillary data.
- Insufficient historical data. In the case of insufficient historical data coverage (mainly VHR) for change detection on some test sites, the selection of habitat and indicators will be adapted to data availability in terms of scale and coverage, since each test site includes different habitats (see Habitat table in Section 1.3.)
- Bad weather conditions. In the case of bad weather conditions (using optical systems) new acquisition respecting specific Biophysical constraints might be at risk. In such a case, multimission data will be considered or the use of recent archive data.

9.2 Milestones

The milestones listed in the following table represent the project checkpoints to validate whether and how the work plan is progressing. The milestones are distributed throughout the duration of BIO_SOS starting at the 1/3 of the project time-line. The distribution of the milestones ensures that mitigation actions of possible risks could be undertaken in due course.

Milestone number	Milestone name	Work package(s) involved	Expected date	Means of verification
M4.1	Pre-existing data have been collected and harmonized for all test sites	4	11	Data collected
M4.2	Data from new on-site field campaigns have been collected from all sites	4	24	Data collected
M5.1	First RS-IUS stage module provided to the system	5	12	Software released
M5.2	Second RS-IUS stage modules are provided to the system	5	23	Software released
M7.1	Data analysis by EODHaM System completed for all test sites	7	33	Software validated
M7.2	Users system acceptance accomplished	7	33	Users' feedback received

10. Organisation of meetings

According to Annex I of GA [3], the following meetings will be held during the project lifetime

Name	Month
Project meeting (consortium)	1, 12, 24, 36
Meeting of the coordination committee	6, 12, 18, 24, 30, 36
Final project conference	34
Meeting with Project Reviewers	12, 24, 36
Project start -workshop	2, 18

More meetings may be organized on an as-needed basis.

10.1 Scheduling and Communication

Dates and locations for the meetings should be agreed upon at least one month before the meeting. Notification of proposed date and venue should be sent by the Coordination to the whole Consortium and to the Project Officer. A draft agenda should be submitted at the same time to all parties. The agenda should contain a list of the decisions to be taken at the meeting, if any. A no-answer is considered a positive answer to the proposal.
Once agreed on the proposal, the final agenda will be issued by the Coordinator. The Agenda of WP meetings should be approved by the Coordinator.

10.2 Host-Institution Responsibility

The host-institution cooperates with the coordinator to the organization of the meeting and provides an adequate venue for it. It also assists the participants with travel arrangements, hotel accommodations and provides a minimal catering (coffee breaks, luncheon).

10.3 Meeting Minutes

The Coordinator is responsible for writing the minutes of the meeting. The minutes should contain a brief summary of the discussion, the list of participants, and a summary of the decisions and of the actions to be taken. Minutes should be written within 2 weeks after the meeting and submitted to the participants for their approval, to be notified within the following week. No answer means positive answer. According to the Consortium Agreement, a Member may veto a decision during the meeting, only in case that the decision was foreseen in the original agenda. When a decision has been taken on a new item added to the agenda before or during the meeting, a Member may veto such a decision during the meeting and within 15 days after the draft minutes of the meeting are released. Minutes will be made available on the intranet of the BIO_SOS website.

11. References

[1] European Topic Centre on Biological Diversity 2009. *Habitats Directive article 17 report (2001 – 2006) data completeness, quality and coherence.* <http://biodiversity.eionet.europa.eu/article17>.

[2] Bunce R.G.H., Mrtzger M.J., Jongman R.H.G., Brandt J., et al. , 2008. "*A standardized procedure for surveillance and monitoring European Habitats and provision of spatial data*", Landscape Ecology **23***: 11-25.*

[3] BIO_SOS Grant Agreement available at <https://portal2.wur.nl/sites/biosos/Shared %20Documents/Forms/AllItems.aspx>, under "BIO_SOS Administrative Documents", Intranet, restricted access.

[4] BIO_SOS Consortium Agreement available at <https://portal2.wur.nl/sites/biosos/Shared %20Documents/Forms/AllItems.aspx>, under "BIO_SOS Administrative Documents", Intranet, restricted access.

[5] FP7 Support Documents. Project Reporting Guide at <ftp://ftp.cordis.europa.eu/pub/fp7/docs/project_reporting_en.pdf>.

[6] FP7 Support Documents. Guide to Financial issues at <ftp://ftp.cordis.europa.eu/pub/fp7/docs/financialguide_en.pdf>.

[7] FP7 Support Documents. Wiki on FP7 Periodic Reports at <http://212.68.215.215/display/iKnowextern/FP7+Periodic+Report>.

[8] FP7 Support Documents. SESAM User's Manual at

<https://webgate.ec.europa.eu/sesam/helpDocuments.do?action=view&id=53>.

[9] FP7 Support Documents. FORCE User's Guide at <https://webgate.ec.europa.eu/FormC/help/force/FP7_FORCE_CEN_UM.pdf>.

[10] Network Working Group,"Netiquette Guidelines", October 1995, RFC1855, URL <http://tools.ietf.org/html/rfc1855 >(last seen 2011-02-18).

[11] European Commission INSPIRE site, URL <http://inspire.jrc.ec.europa.eu/ >(last seen 2011-02-18).

[12] Open Geospatial Consortium, Inc., OGC web site, URL <http://www.opengeospatial.org/ >(last seen 2011-02-18).

[13] OpenAIRE Consortium, Open Access Infrastructure for Research in Europe site, URL <http://www.openaire.eu/> (last seen 2011-02-18).

[14] Md5sum, see e.g. < http://en.wikipedia.org/wiki/Md5sum>

12. Appendix A. Acronym List

AB	**Advisory Board**
ABERY	**University of Aberystwyth – Inst. of Geography And Earth Sciences**
ADD	**Architecture Design Document**
AI	**Altamira Information**
AIQ	**Assembly Integration and Qualification Plan**
ANSI	**American National Standards Institute**
ASCII	**American Standard Code for Information Interchange**
ASI	**Agenzia Spaziale Italiana**
ATREE	**Ashoka Trust for Research in Ecology and the Environment – India**
BACRES	**Baraldi Consultancy in Remote Sensing**
BIO_SOS	**Biodiversity Multi-Source MOnitoring System: From Space To Species**
CA	**Consortium Agreement**
CBD	**Convention of Biological Diversity**
CCW	**Countryside Council for Wales**
CERTH	**Informatics And Telematics Institute Of The Centre For Research And Technology – Greece**
CIBIO	**Biodiversity & Conservation Ecology Group – Portugal**
CNR	**Consiglio Nazionale delle Ricerche**
CNR-IAC	**Istituto per le Applicazioni del Calcolo - CNR**
CNR-IGV	**Istituto di Genetica Vegetale – CNR**
CNR-IRPI	**Istituto di Ricerca per la Protezione Idrogeologica – CNR**
CNR-ISSIA	**Istituto di Studi sui Sistemi Intelligenti per l'Automazione - CNR**
DG ENV	**Directorate-General for the Environment**
DJF	**Design Justification File**
DOPA	**Digital Observatory for Protected Areas**
DOW	**Description of work**
EEA	**European Environmental Agency**
EBONE	**European Biodiversity Observation Network**
EC	**European Community**
ECNC	**European Centre for Nature Conservation**
EM	**Exploitation Manager**
ENCA	**European Nature Conservation Agencies**
ENM	**Ecological Niche Models**

EO	**Earth Observation**
EODHaM	**EO Data for Habitat Monitoring**
ESA	**European Space Agency**
ET	**Exploitation Team**
ETCBD	**European Topic Centre on Biological Diversity**
EU	**European Union**
EULA	**End User License Agreement**
FP7	**Seventh Framework Program**
GA	**Grant Agreement**
GAP	**General Assembly of Partners**
GEO-BON	**Group on Earth Observations Biodiversity Observation Network**
GIS	**Geographic Information System**
GMES	**Global Monitoring for the Environment and Security**
HR	**High Resolution**
ICETA	**Instituto de Ciências e Tecnologias Agrárias e AgroAlimentares**
ICNB	**Instituto da Conservação da Natureza e da Biodiversidade**
ICONA	**National Institute for the Conservation of Nature**
ICPC	**International Cooperation Partner Country**
IES	**Institute for Environment and Sustainability**
IPR	**Intellectual Property Rights**
IRD	**Institut de Récherche pour le Développement - France**
ISPRA	**Istituto Superiore per la Protezione e la Ricerca Ambientale**
JRC	**Joint Research Centre**
KML	**Keyhole Markup Language**
LC	**Land Cover**
LCC	**Land Cover Change**
NEST	**Next ESA SAR Toolbox**
NGO	**Non Governmental Organization**
OGC	**Open Geospatial Consortium**
PC	**Project Coordinator**
PCC	**Project Coordination Committee**
PDFT	**Project Data Flow Table**
PKH	**Planetek Hellas**
PKI	**Planetek Italia**
PMT	**Project Management Team**

PO	**Project Officer**
PPL	**Partner Project Leader**
PUDF	**Plan on the Use and Dissemination of Foreground**
QAP	**Quality Assessment Plan**
QC	**Quality Committee**
QM	**Quality Manager**
REA	**Research European Agency**
RS-IUS	**Remote Sensing Image Understanding System**
SDD	**Service Design Document**
SLA	**Service Level Agreement**
SRC	**Spectral Rule-based Classifier**
SUM	**Software User Manual**
TL	**Task Leader**
UNEP	**United Nations Environment Programme**
UOI	**University of Ioannina**
UTM	**Universal Transverse Mercator**
VHR	**Very High Resolution**
WGS 84	**World Geodetic System 1984**
WKT	**Well-Known Text**
WP	**Work Package**
WPL	**Work Package Leader**

13. Appendix B. BIOSOS FTP Archiving facility

A central facility to share data among all partners has been prepared. It uses both HTTP and FTP protocols to allow an easy upload/download of data with a pre-built hierarchical structure, in order to maintain simplified access policies. It is reasonable using this facility just to share large amounts of data when needed, instead of using another web oriented framework.

13.1 Connection information

Host: res.ba.issia.cnr.it
Username and password: one per research unit.

The ftp server used is case sensitive. So FILE and File refer to different files or folders.

13.2 File tree

All users share the same root folder, where a set of per-user sub-folders is available. Each of them belongs to one of the authorized users and can be used to upload files by them. Each user can upload files to his/her own folder only.

All per-user folders present the same organization:

- Public (browseable by all).
- Private (only browseable by the owner, see below).
- Public_html (browseable by web, too).

In the common root folder a 000-ALL sub-folder is also visible, and contains data usable by all users (e.g. bounding boxes for all project sites). This folder is owned by the cnr-issia user.

13.3 Suggested FTP client programs

The ftp archive can be accessed by using any browser. With common browsers, usually just the following URL is needed: ftp://username@res.ba.issia.cnr.it/ and the browser will ask for a password. It is generally better using a regular client to upload/download files. Any of the following free programs can be used:

- Filezilla.
- FireFTP plugin for Firefox.

Note that if the accessing network is behind a firewall, a passive connection is required, which is generally autoselected by common clients. Non text files have to be transferred in binary mode. This is also correctly negotiated by common clients, so using basic FTP programs sometimes provided by some operating systems, such as most Windows versions is not recommended: installing and using an advanced client is more safe and works.

13.4 How to share private files

Each user has a private folder within his/her main folder. That folder cannot be browsed by other users, but its contents can be downloaded if one knows exactly the filenames to access. So, if one would share a subfolder 'Abc' with another user he/she has only to tell the other user to open the 'Abc' subfolder in his/her own private area. How that can be done could depend on the specific client used: for instance, in Filezilla one has to write the right path of the hidden sub-folder (e.g. /cnr-issia/private/Abc) in

the 'Remote Sites' field, and then press the <Enter> key; after that, the available files under the 'Abc' folder will be visible.

13.5 How to share data on the web

Users can also share data (or documents) to be accessed by web (in read-only mode). That can be done by uploading data in the public_html folder. That folder corresponds to the following URL: http://res.ba.issia.cnr.it/biosos/user/ . In order to preserve user's privacy, an empty index.html is pre-loaded in the public_html folder: it prevents automatic file indexing. Note that the contents of that folder are world-wide visible and readable without a password.

13.6 Checksum creation

When transferring data files, you have to add a companion per-folder text file named MANIFEST.txt, with a list of the file names and their "fingerprints" as generated by md5sums [14]. A checksum generator is available for all operating systems (e.g. a md5sums version for MS Windows computers can be found at http://www.md5summer.org/). That would allow other people to check in advance whether files are corrupted or not, before using them and that they correspond to the original ones. Files sent without a MANIFEST.txt file will not be accepted because potentially might be faulty. Useful instructions and a script to create a per-directory MANIFEST.txt file as such on a GNU/Linux system are contained in a wiki on the FTP archive site (http://res.ba.issia.cnr.it/wiki/biosos/biosos_ftp_archive).