



## D.11.1– Project Management Guide

PLATAFORMA OCEÁNICA DE CANARIAS (PLOCAN)

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**THE OCEAN OF TOMORROW**



NeXOS - Next generation Low-Cost Multifunctional Web Enabled Ocean Sensor Systems Empowering Marine, Maritime and Fisheries Management, is funded by the European Commission's 7<sup>th</sup> Framework Programme - Grant Agreement N° 614102

## Deliverable 11.1 – Project Management Guide

**Project Acronym:** NeXOS

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**Project Coordinator:** Eric Delory

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## Abstract

Deliverable 11.1 provides guidance and solid foundations for the project management enabling the consortium to clearly understand the Project Management System, methodology and tools to be implemented in NeXOS. The Project Management Guide (PMG) provides the description of how the main stakeholders and interests of the project are represented within its management structure. In addition, the PMG draws on best practice from “Projects In Controlled Environments Two (PRINCE2™)”, which provides guidance on Project Internal Communication, Monitoring and Control, Quality Review, and Risk and Issue Management. The report also describes briefly the formatting and presentation of scientific reports and other deliverables being produced by the Consortium.

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## 1. INTRODUCTION

The general objective of NeXOS is **to develop new cost-effective, innovative and compact integrated multifunctional sensor systems, which can be deployed from mobile and fixed ocean observing platforms, as well as to develop downstream services** for Global Ocean Observation System (GOOS), Good Environmental Status (GES) and the Common Fisheries Policy (CFP). This will be achieved through the following specific objectives:

1. To develop a new, compact and cost-efficient multifunctional **sensor system for optical measurement** of several parameters, including contaminants such as hydrocarbons and other components of the carbon cycle.
2. To develop a new cost-efficient compact and integrated **sensor system for passive acoustic measurements**.
3. To develop a new low-cost **sensor system for an ecosystem approach to fisheries** management, providing measurement of stock-relevant parameters, including fluorescence (proxy of chlorophyll-a) and oxygen, in addition to the currently measured physical parameters (T, S, Depth).
4. To develop and integrate a miniaturised **smart sensor interface common to all new NeXOS sensor systems**.
5. To develop and apply innovative **sensor antifouling technologies** which are the main limiting factor of sensor reliability, and to develop and test improvements based on cost-efficiency, power-efficiency and economic viability.
6. To develop a **common toolset for web-enabled and reconfigurable downstream services**, for European marine databases and data facilitators, from Seadatanet to IOC services such as GOOS, and the GEOSS.
7. **To assess and optimise the economic feasibility and viability of the new sensor** developments including the manufacturing phase, in the context of large scale industrial production and accounting for the operational phase of the life cycle of the sensors, addressing the position of European SMEs and industry players vis-à-vis their competitors.
8. **To demonstrate new developments** in real operational scenarios collaborating with pre-defined scientific and oceanographic missions, observatory maintenance, industrial sea operations (e.g. Oil&Gas) and fisheries fleet operations.
9. **To work with producer and user communities** to upgrade requirements and provide a system which allows easier transition to manufacturing and operations, bridging the gaps between science, industry and government.
10. **To manage and coordinate the specific aims described above, and contribute to dissemination and outreach**, to communicate the results and innovations of NeXOS to the European and Global Ocean Community.

To achieve the general and specific objectives NeXOS has been primarily structured in 11 Work Packages that will allow distributing and concentrating the efforts of the project in a coherent and integrated approach. Figure 1.1 shows a graphical representation of the work distribution.

### Organizational Work Packages

Work Packages 1, 2, 10 and 11 are transversal work packages that contribute individually to the organization of NeXOS specific domains which include: the Scientific and Technical work in NeXOS (WP1), the Economic assessment (WP2) the Dissemination and Outreach aspects (WP10) and the Administrative and Financial Management (WP11). These four Work packages will be active during the whole life cycle of the project and will have an effect and impact on all of NeXOS specific objectives. Particularly, the activities developed within these WPs will focus on **specific objectives 7, 9 & 10** of NeXOS.

### Development Work Packages

WPs 4, 5, 6 & 7 are development WPs. Activities in WP4 will contribute primarily to achieve **specific objectives 4 and 6**, WP5 **specific objective 1**, WP6 **specific objective 2**, WP7 **specific objective 3**. WP3 will play a transversal role among the development Work Packages, having impact on all specific objectives, through the coordination of the engineering specification process. WP3 will also lead the effort towards reaching **specific objective 5**.

### Validation & Demonstration Work Packages

Finally, the last group of activities in NeXOS is the integration, validation and demonstration activities organized in Work Packages 8 and 9, focusing on the integration and validation of the developments (WP8) and **specific objective 8** (WP9).

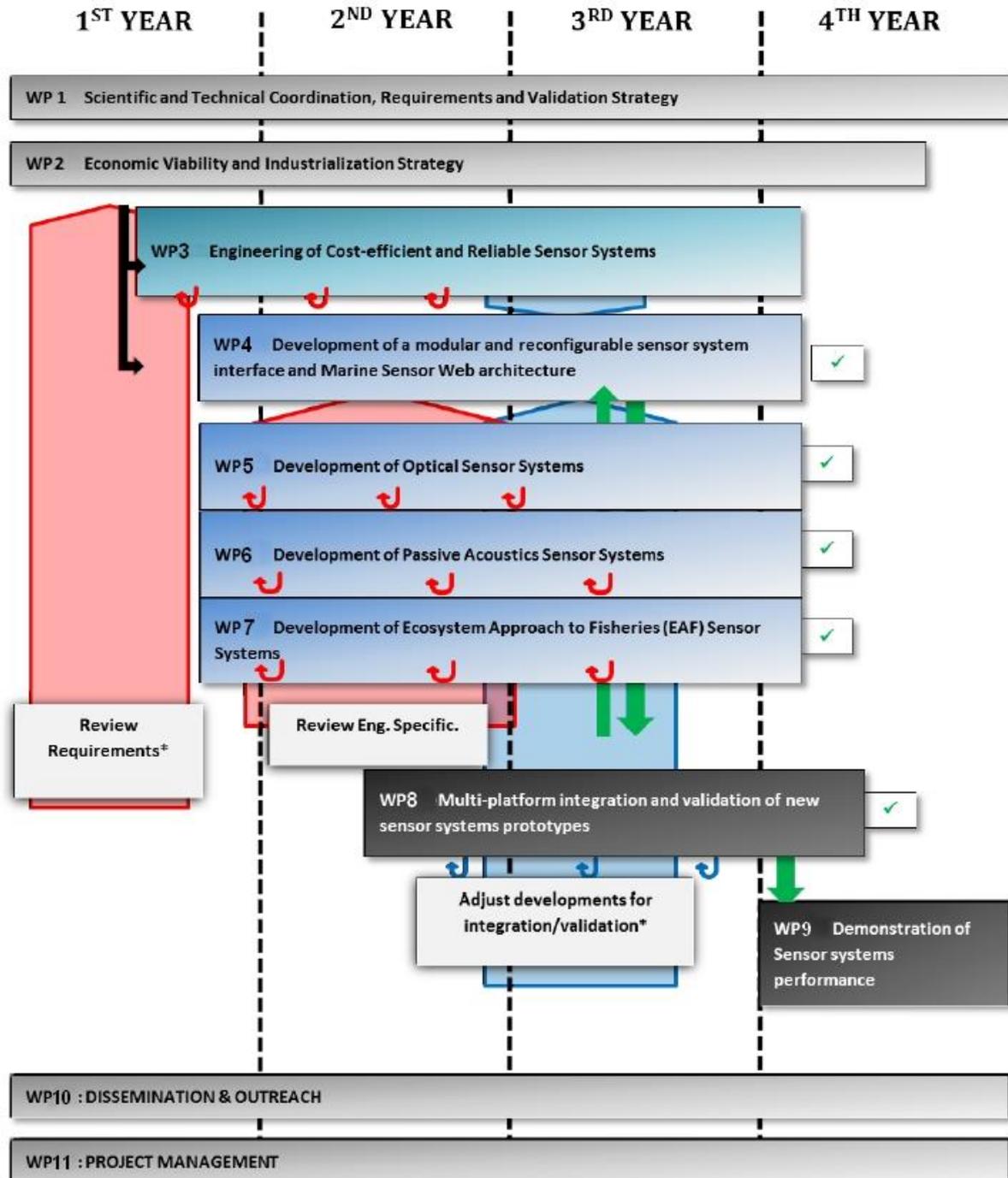


FIGURE 1.1 GRAPHICAL PRESENTATION OF NEXOS WORK PACKAGES

The need to keep all of these specific activities under a coherent and controlled environment that allows their successful development requires a robust and well-proven Project Management System (PMS) based on best practices. The PMS in NeXOS is composed by the activities of delegating, monitoring and controlling of all aspects of the project, including the motivation of those involved, to achieve the project objectives, according to the agreed Project Description of Work (DoW). These activities will take place in Work Package 11, which is led by PLOCAN, the Project Coordinator.

This Project Management Guide addresses the main aspects of the PMS including the structure and

means to establish an effective communication strategy, as well as a management scheme for Quality and Risks throughout the project life cycle.

## 2. THREE INTERESTS

The project is managed following the principles of the international recognize **Project In Controlled Environment (PRINCE2™) methodology** once tailored to be suited to its specific environment and conditions.

NeXOS is a cross-functional and multidisciplinary project which involves 21 organizations from six different European countries, all of them with their own specific backgrounds, interests and perspectives. To be successful, NeXOS must have an explicit project management structure consisting of defined and agreed roles and responsibilities for the people and partners involved in the project and a means for effective communication between them.

Gathering all these different interests requires the implementation of international recognized best practices in project management. According to PRINCE2 methodology<sup>1</sup>, each project always has three primary categories of stakeholders, and the interests of all three must be satisfied if the project is to be successful. Figure 1.1 shows the three primary interests which make up the main decision-making body in each project. This principal management body in NeXOS is the Steering Committee which will be detailed in section 2 of this deliverable.

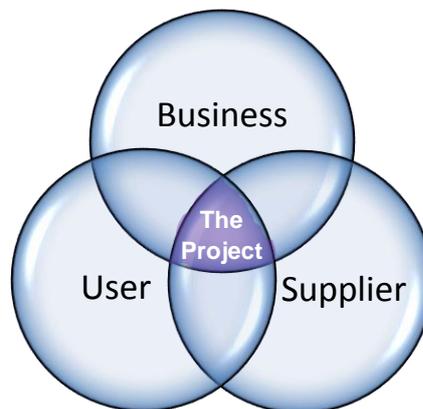


FIGURE 2.1. THREE MAIN GENERAL STAKEHOLDERS INTERESTS

- **Business:** *The deliverables of the project should meet a business need which will justify the investment in the project. The project should also provide value for money. The business viewpoint therefore should be represented to ensure that these two prerequisites exist during project proposal preparation and remain in existence throughout the project. The **Executive role** represents the business interests in the project (Referenced from PRINCE2<sup>1</sup>).*

In NeXOS this *Business Need* was clearly defined by the EC in the Topic 2: OCEAN.2013-2 *Innovative multifunctional sensors for in-situ monitoring of marine environment and related maritime activities*. The **Executive role** and its associated interests is represented in NeXOS Steering Committee directly by the **Project Coordinator (PC)**. A detail description of its role and responsibilities is provided in section 2 of this deliverable.

- **User:** *Represent the interests of those who will use the project's outputs. The user viewpoint should represent those individuals or groups that will operate, maintain or support the project's outputs and/or the project outputs will impact them. The user is needed to specify the desired outputs and ensure that the project delivers them. The **Senior User(s)** will represent these interests in the project (Referenced from PRINCE2<sup>1</sup>).*

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<sup>1</sup> *Managing Successful Projects with PRINCE2™*, Office of Government Commerce (OGC, United Kingdom), published by TSO (The Stationery Office), 2009.

In NeXOS this main interest constitutes the main focus of sensor developers (SME's) and final users (NeXOS industrial partners and sensors operators both as partners (internal) or members of the Advisory and Stakeholders Board (External). The **Senior User(s) role** in NeXOS Steering Committee is represented by **Work Package 2 Leader (Economics)** as the coordinator of the Advancement of SMEs Competitiveness Subcommittee (ASCS) and by **Work Package 10 Leader (Dissemination/Outreach)** as the main coordinator and internal representative of the Advisory and Stakeholders Network.

- **Supplier:** *The creation of the project's outputs will need resources with certain skills. The supplier viewpoint should represent those who will provide the necessary skills and produce the project products. The **Senior Supplier(s)** will represent this stakeholder interest on the project (Referenced from PRINCE2<sup>1</sup>).*

In NeXOS the role of **Senior Suppliers** is represented in the Steering Committee by the Work Package Leaders (WP1 – WP11). These provide the necessary skills and produce NeXOS' products based on, both, in-house and external supplier teams (Work Package Members and foreseen Subcontractors in NeXOS). Due to the level of complexity and the broad scope of the project objectives and deliverables, Work Package Leaders have two main representatives in the Steering Committee: The **Project Chief Scientist** (PCS; Work Package 1 Leader) that ensures the scientific and technical coordination and the **Project Chief Engineer** (PCE; Work Package 3 Leader) that provides the general engineering specifications of the project products.



**FIGURE 2.2. MAIN THREE STAKEHOLDERS INTERESTS REPRESENTATION IN NEXOS**

Besides the internal representation of the project principal interests in NeXOS, it is relevant to highlight that the project has been created in the framework of two external wider communities and interests which include the European Commission and the International Scientific and Technical, public and private community in the Marine and Maritime Sciences and Technologies.

These levels represent the project Assurance for monitoring all aspects of project performance and products **independently of the Project Management Structure**. The European Commission, responsible for commissioning the project, and represented by **NeXOS EC Project Officer** will assure through concrete project controls, that the project **business interests**, this is the main reasons which justified the investment in NeXOS, are being satisfied.

The Scientific and Technical Community, will be represented in NeXOS by the Advisory and Stakeholders Board which will provide expert advice and guidance to the Project Steering Committee to assure that both, the **user and supplier interests** are being satisfied. The ASB works as an external independent body with a double role. Firstly to contribute to assure the interest of the users, therefore to be the **external User assurance body** and, secondly, to contribute to provide support to the Senior Supplier with specific technical guidance during the life cycle of the project so it will be also an **external Supplier assurance body**. This double role could be implemented due to the specific selection of the members of the ASB from the onset of the project and throughout its life cycle.

### 3. ORGANIZATION: PROJECT MANAGEMENT STRUCTURE

The purpose of the Organization section is to define NeXOS' management structure of accountability and responsibilities. This section describes the decision-making structures that applied in NeXOS both, internally and externally (Figure 1).

NeXOS has 3 levels of organization. **The first level, which is external to the project**, is composed of the **Project Officer**, as EC representative, and the **Advisory and Stakeholders Board (ASB)**

- ❖ **The EC Project Officer** sits outside the Project Management Structure. As representative of the EC is responsible for commissioning the project, including identifying and appoint the Project Coordinator and defining the general project-level tolerances within the Steering Committee has to work.
- ❖ **The Advisory and Stakeholders Board (ASB)** is international in character, with members from European and non-European countries, including representatives from industry, SME organizations, potential end users, academia, the Science and Technology user communities and European agencies and institutions. The ASB will provide independent external advice on scientific, technical, legal and economic issues relevant to the project and, in particular, will provide valuable business guidance in order to increase the potential commercialization of the final products/developments. The ASB will enhance information exchange; share good practice and receive feedback with regard to the feasibility and adaptability of NeXOS developments. Furthermore, this board will contribute to the dissemination of the project results to the relevant communities and actors in ocean observation, marine and maritime monitoring, fisheries management and other relevant marine/maritime activity sectors. The participation of representatives from EU institutions and international organizations will foster an exchange of information between the SC and representatives of international S&T programmes and projects. The ABS will be chaired by the Project Coordinator and co-chaired by WP 10 leader (Dissemination and Outreach). It will report to the SC yearly within the framework of the project General Assembly (all partners) meetings.

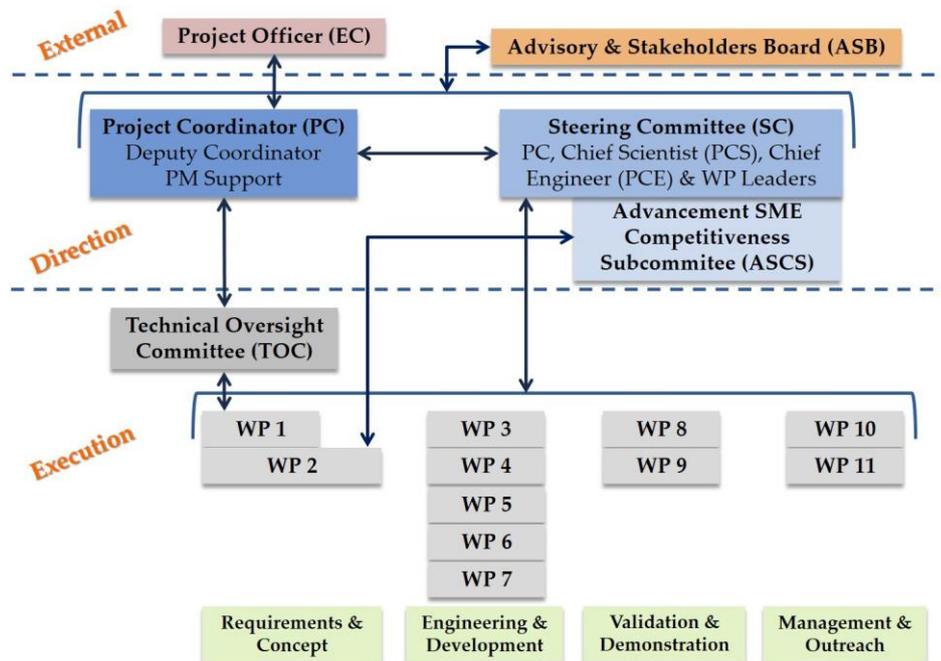


FIGURE 3.1: PROJECT DECISION LEVELS AND MANAGEMENT STRUCTURE

The project management structure has two internal levels of organization:

**Project Direction:** led by the Steering Committee who is accountable for the project's success by making key decisions and exercising overall control, while delegating day-to-day management of the project to the Project Coordinator.

- ❖ **The Steering Committee (SC)** is the strategic decision and operations board for the project, and

acts as an integrated product team (IPT)<sup>2</sup>. Within the constraints set out by the EC in the Grant Agreement, the SC is responsible for the overall strategic and managerial decisions and will execute changes to the work-plan when needed, reassess project objectives, monitor the quality of the project outputs, review technical progress of tasks and maintain relations with the Advisory and Stakeholders Board. The SC is chaired by the Project Coordinator. In addition to the PC, the Steering Committee is composed of all WP leaders, representing the interests of their WP, the PCS and the PCE. The SC will normally conduct its business by WebEx or electronic means and will have in-person meetings every six months, in conjunction with the project team meetings. The SC will be supported by the Project Management Support Team for administrative and communications activities within the consortium. Each member of the committee will have one vote, and decisions will be taken by simple majority.

NeXOS products will be developed with market penetration as one of the main objectives. An SC subcommittee has been created to encourage and facilitate this: the Subcommittee for the Advancement of Small and Medium Enterprise Competitiveness.

- **The Subcommittee for the Advancement of Small and Medium Enterprise Competitiveness (ASCS)** is chaired by the project lead for Economics and Industrialization and includes the PC, the PCS, the PCE, the Lead for Dissemination and Outreach and selected NeXOS SMEs. The main responsibility of the ASCS is to ensure, at the outset of the project and during its life cycle, that the design and engineering process followed can be understood and incorporated into the practical implementations by SMEs, industry and the science research and observation community. The ASCS is the project forum for reviewing alignment with the Marine Sensor Market assessment and the EU principle “Think Small First”. Therefore the ASCS represents the **Users interests** in NeXOS. The ASCS will study how to enhance the potential of NeXOS’ products to penetrate the marine sensor market.

In addition, the ASCS will be responsible for the management and implementation of knowledge protection, intellectual property procedures and exploitation of results. The Project Coordinator will lead this particular task. The management and basic procedures of the IPR is described in more detail in section 3. This Subcommittee will normally conduct its business by email and collaborative means (audio and video conferences, web-meeting etc.), and will meet in person the day before the SC meeting.

- ❖ **The Project Coordinator (PC)** is responsible for the execution of the project in compliance with the Grant Agreement signed with the European Commission (EC). The PC is responsible for putting together the Consortium Agreement at the onset of the project and the formulation of the Project Implementation Plan. The PC chairs the Steering Committee (SC), and is assisted by the Project Management Support team in the administrative and financial activities of the project. It is the role of the Chief Scientist and the Chief Engineer to provide the PC with the qualified expertise for proper execution of scientific and technical activities.
  - **The Project Management Support (PMS)** is responsible for the overall financial management, accounting and documentation of the project. The PMS will ensure the administrative management of the project, information flow, financial management, and will assist the PC in monitoring compliance of the project partners with their obligations under the Grant Agreement and the Consortium Agreement. The PMS will be chaired by NeXOS Deputy Coordinator appointed by PLOCAN, who will be supported by PLOCAN senior and junior financial and legal experts.
  - **The Project Chief Scientist (PCS; Lead of WP1)** will ensure the scientific and technical coordination of the project in conformity with the objectives, methods and quality standards described in the contract. The PCS is the focal contact for assessment of requirements, outreach activities with the science user community, technical innovation and has responsibility for quality standards. The PCS will chair the Technical Oversight Committee (see below) that will ensure the participation and coordination of NeXOS developers during

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<sup>2</sup> An integrated product team (IPT) is a multidisciplinary group of people who are collectively responsible for delivering a defined product or process

development, integration and demonstration stages. He also supports the interface with SMEs, regarding the transition of science knowledge to the industry base developed under the Project's Subcommittee for the Advancement of the SME's Competitiveness (ASCS).

- **The Project Chief Engineer** (PCE; Lead of WP3) provides the general engineering specifications of the project products and ensures the coordination of the engineering throughout the full product life cycle including design and development. The PCE supports the PCS as co-lead of the Technical Oversight Committee (TOC). His focus in NeXOS will be to ensure the compliance with cost and reliability requirements. The PCE will also support the outreach and dissemination efforts (WP10) with the external technical community.

**Project Execution:** is the process to control the link between the Project Direction (SC and PC) and the Work Package Leaders and Members, by placing formal requirements on accepting, executing and delivering project work. The role of the Work Package Leaders is to coordinate their specific area of work that will deliver one or more of the project's products (deliverables).

- ❖ **The Technical Oversight Committee** (TOC), has the aim to keep the liaison with developers, in particular SMEs, from every development WP (WP3 to WP7) and actors of WP1. Chaired by the Project Chief Scientist, co-chaired by the Project Chief Engineer, the main role of this subcommittee is to ensure that sensor requirements, and test and validation procedures are checked by the relevant developers and operators, to ensure feasibility and viability. Formal reviews will be provided for revision. The TOC includes senior project leaders representing all core expertise and interests throughout the product development. It brings an end user perspective to the design and interface functions. It provides an opportunity for SME interests to be represented in the early design and development. It allows the test and validation team to input into the sensor designs to assure testability. The TOC is the forum in which issues can be addressed as they arise in order to optimize solutions for sensors and system development, testing and user interface. It will meet initially on a bi-weekly basis (M1-M6), then monthly, and the chair of the TOC will report to the Project Coordinator.

The Technical Oversight Committee (TOC) will be chaired by the Project Chief Scientist (WP1 lead) and co-chaired by the Project Chief Engineer (WP3 lead). Both have been identified and named in Annex I of the Grant Agreement. Additional members of the TOC shall consist of one representative of each of the development work packages in NeXOS which include: a representative from WP4, one representative of WP5, one representative of WP6 and one representative of WP7. The participation of any other partner of the consortium in TOC meetings, for the discussion of specific scientific or technical issues or based on any other relevant needs to ensure the correct development of the TOC functions, will be decided by the Project Chief Scientist, upon request by any of its members. Participation of SMEs and end-users such as observatory operators will be promoted.

- ❖ **Work Package Leaders** (WPLs) of each Work Package (WP) are appointed by the Steering Committee, upon proposal of the Project Coordinator, to lead their activities. Among their responsibilities, are included: to coordinate and supervise the Work Package (planning, monitoring and reporting all activities), to submit to the PC its own deliverables which shall be of high quality and consistent with the Project Description of Work (Annex I of the Grant Agreement), to organize WP meetings and to coordinate on a day-to-day basis the progress of the technical work under their Work Packages. As a general rule, WPLs are responsible of the good conduct of tasks to be executed within their Work Package.
  - **Work Package Members** (WPMs) are the group of NeXOS partners involved in the tasks that configure each Work Package. WPM provide the necessary skills and expertise for the development of the project products (deliverables) that are programmed and planned (time, scope, costs, quality, etc.) within each WP. WPM have to ensure that the work is conducted in accordance with the required and defined techniques, processes and procedures specified in the WP and in agreement and under the supervision of the WPL.

#### 4. INTERNAL COMMUNICATION STRATEGY

To ensure maximum synergy within the partnership, both a vertical and horizontal flow of information within the structure of the project has been established. This will be achieved through the Steering Committee (SC), project-wide meetings, use of known communication tools (e.g. the project website and the project intranet) and by participants being active in multiple work packages and committees.

The ASCS and the TOC committees are instrumental in warranting that developments are progressing with agreed principles, amongst which the competitiveness of the developed products for the ocean sensor market is of utmost importance. It is one duty of the Project Coordinator to insure that both committees work with a common goal. More details on the communication channels within the project management structure are provided in Figure 3.1.

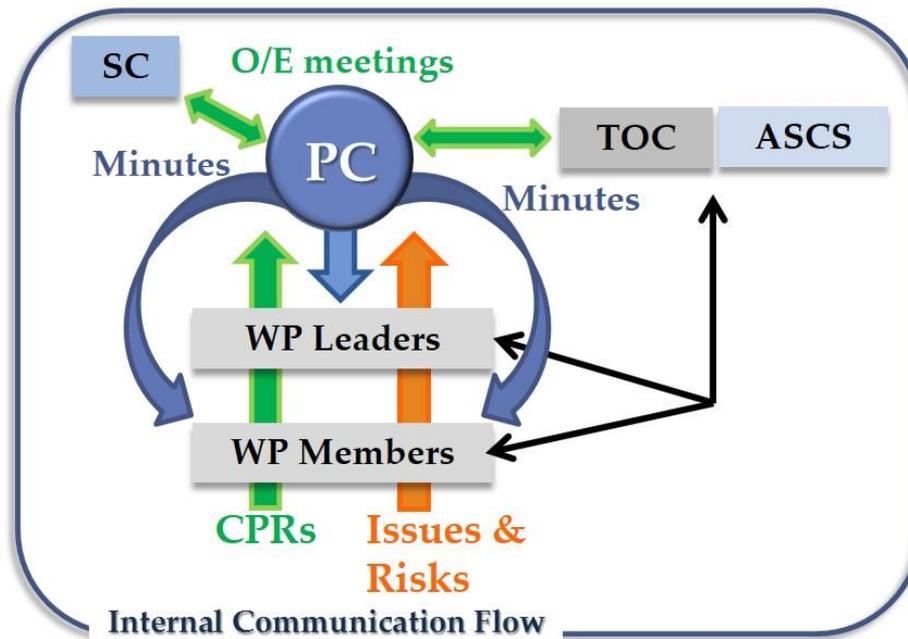


FIGURE 4.1 INTERNAL COMMUNICATION FLOW DIAGRAM

##### Vertical flow of information

The progress of the project will be formally reported to the Project Coordinator, each 4 months throughout the life cycle of the project, with the production of the **Check Point Reports (CPR)**. Work Package Leaders are responsible for collecting the relevant information from each of the Work Package Members, within their WPs, to be later processed and formally raised to the PC. In addition, any other issues or risk that could be detected during the execution of the WP tasks, should follow the same way to inform the Project Coordinator.

The PC will report, formally, each six month to the Steering Committee during the scheduled ordinary project meetings. Extraordinary SC meetings will be also organized for PC reporting using teleconference tools.

According with the level of tolerances set out by the Steering Committee and the project Consortium Agreement the PC will directly provide reply and decisions to the WPL or will raise them to the SC. When the involvement of the SC is deemed necessary, it will be the duty of the PC to communicate formal decisions taken to the whole consortium in the forms of Minutes of each of the Steering Committee meeting. Day-to-day management decisions that will not require the SC's involvement will be directly communicated by the PC to WPL and/or WPM by means of the usual communications tools (phone, e-mail, intranet, etc.).

##### Horizontal flow of information

NeXOS governance bodies such as the Steering Committee, the Technical Oversight Committee, the Advancement SMEs Competitiveness Subcommittee, together with the ordinary yearly Project Meetings allow the interaction and communication of all partners, within the same level of organization. These

bodies and meetings allow for an horizontal flow of communication among all consortium members, which facilitates a rich multidisciplinary environment and discussions, which keeps NeXOS partners informed of the project current status and decreases misunderstanding between partners working on the same work package/task, thereby increasing efficiency and productivity.

Furthermore, the Project Coordinator and each of the Work Package Leaders should foster and promote horizontal communication among the members of the consortium and among the WP members respectively. This should be done with periodic track reports within these two groups by usual communication tools as well as by the organization of specific meetings.

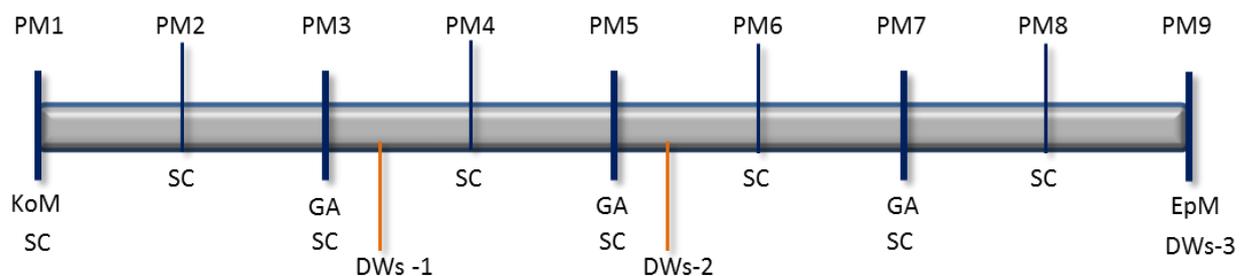
Maintenance of an up-to-date project plan and status briefing is key to good communication; this will be available to all participants and used to monitor progress and identify problems.

### **Project Meetings**

The Kick-off meeting (KoM) took place at the coordinator's premises on month two. The day before the kick-off meeting and at the end of each project year, the PC, assisted by the SC and PMS, organises the project General Assembly Meeting (GA). The GAs are conducted in order to allow in person meetings between all members of the consortium. Representatives of the Advisory and Stakeholders Board are also invited. The last GA will coincide with the End of Project Meeting (EPM).

Intermediate scientific and technical project meetings (PM) will be held every six months. A total of nine PMs (Figure 3.2) will be held, each of them at the premises of one of the Work Package leaders. These workshops will last 2 to 3 days and consist of presentations of all active WPs. During workshops, technical questions will be answered and work groups will be formed in order to discuss and coordinate future WP activities. Project Meeting number 4, on month 18, will be held in Brussels coinciding with the foreseen Project External Review requested by the European Commission. The PC and Steering Committee will be at the disposal of the EC external evaluators in an extraordinary meeting sessions organized in the framework of this particular Project Meeting.

Following these presentations, the Steering Committee (SC) will meet to discuss specific issues. The SC may invite relevant members of the Advisory Board and the Stakeholders' Network to these discussions, when dealing with business scenarios, technology strategies, management of resources, operational assessment or the quality of the economic and environmental assessments.



**FIGURE 4.2: OVERVIEW OF THE CHRONOLOGICAL DISTRIBUTION OF THE PROJECT MEETINGS (PM), KICK OFF MEETING (KoM), STEERING COMMITTEE MEETINGS (SC), GENERAL ASSEMBLY MEETINGS (GA), DISSEMINATION AND OUTREACH WORKSHOPS (DWS) AND THE END PROJECT MEETING (EPM).**

NeXOS recognizes that in-person meetings are an integral part of the communication strategy, but the project will also exploit the full potential of existing ICT capabilities such as e-mail, phone, social networks, online meeting, web conferencing and videoconferencing applications. Project Management Support will set up a secured domain accessible on the Internet (NeXOS intranet). This will allow baseline, support, working documents and reports to be organised and exchanged between authorised participants. A specific report with the main features of NeXOS Intranet is provided in NeXOS Deliverable 11.2.

The presentations of each WP and the minutes from each meeting will be made available to all partners electronically as "NeXOS # Ordinary Meeting Minutes". Additionally, after each ordinary project meeting, the Deputy PC will prepare minutes detailing the decisions and agreements of the Steering Committee and its subcommittees (ASCS and IPRS). These will be distributed through a partners' only section of the project intranet.

## 5. PROJECT CONTROLS

This section describes the controls to monitor and compare project achievements against those initially planned, provide a forecast for the project objectives and control any unacceptable deviations. This section includes the description of each of the formal progress reporting mechanisms and tools defined in NeXOS and the subsets of Management Stages. Figure 5.1, at the end of the section, illustrates how these elements are aligned within the project timeline.

### **Project Controls Tools and Mechanisms**

In order to review and report progress **a group of formal time-driven and event-driven controls** have been set up:

**Time-driven controls:** These include those project controls that take place at predefined periodic intervals.

- **Checkpoint Reports (CPRs):** Each Work Package Leader in NeXOS will produce a CPR every 4 months to provide the Project Coordinator (PC) and Project Management Support (PMS) with details of the progress against their WP plan. A template has been produced and included in Annex I of this deliverable. The collection of all the periodic CPRs from each of NeXOS WPs will be used by the PC and the PMS to produce the Periodic Reports to the European Commission.

**Delivery dates** for NeXOS CPRs are: M4, M8, M12, M16, M20, M24, M28, M32, M36, M40, M44 and M48.

- **Periodic Technical and Financial Reports for the European Commission<sup>3</sup>:** A **periodic report** within 60 days from the end of each reporting period (including the last reporting period) must be sent to the EC. Reporting Periods in NeXOS are established as follows: First Reporting Period (M1-M18); Second Reporting Period (M19-M36) and Third Reporting Period (M37-M48). Each periodic report comprises:
  - An overview, including a publishable summary of the progress of work towards the objectives of the project, including achievements and attainment of any milestones and deliverables of the project.
  - An explanation of the use of the resources, and
  - A Financial Statement from each beneficiary and each third party, if applicable, together with a summary financial report consolidating the claimed Community contribution of all the beneficiaries (and third parties) in an aggregate form.

In addition to the periodic report for the last period of the project, **a final report** has to be submitted, within 60 days after the end of the project. This final report shall comprise:

- A final publishable summary report which includes: an executive summary, a summary description of project concepts and objectives, a description of the main S&T results, the Beneficiary means the coordinator and other entities mentioned in Article 1 of the Grant Agreement, potential impact (including the socio-economic impact of the project) and the main dissemination activities and exploitation of results/foregrounds
- A plan for the use and dissemination of foreground, to spread awareness.
- A report covering the wider societal implications of the project, in the form of a questionnaire, including gender equality actions, ethical issues, efforts to involve other actors.

**Delivery dates** for EC periodic and final Reports are: 1<sup>st</sup> Reporting Period (M19-M20); 2<sup>nd</sup> Reporting Period (M37-M38); Third and Final Reporting Period (M49-M50).

**Event-driven controls:** These include those project controls that take place when a specific event occurs.

- **Ordinary and Extraordinary Steering Committee Meetings Minutes:** As previously described in sections 2 and 4, SC members (all Work Package Leaders and the Project Coordinator) will have in-person ordinary meetings every six months. The presence of additional partners could be organized when needed based on managerial and/or technical

<sup>3</sup> Description extracted and summarized from Guidance Notes on Project Reporting, EC, 2012.

requirements. During these meetings a general review and assessment of the progress of the project management as well as the technical work will be performed and decisions and actions will be established. The minutes of all meetings will be later distributed and accepted by the whole consortium in compliance with the Consortium Agreement. These minutes will constitute a valuable event-driven control at project level that will keep the entire consortium informed of the project progress and status.

- **Ordinary and Extraordinary Technical Oversight Committee Minutes:** The minutes of the TOC will constitute an event-driven control, after each of its meeting to keep track of the Scientific and Technical coordination, at work package level, especially among the Technical and Development Work Packages
- **Ordinary Project Meetings and General Assembly:** A yearly Project Meeting with the attendance of all partners is programmed. In both cases, the minutes of these Ordinary Project Meetings and yearly General Assemblies will be of great value to monitor the progress at all organizational levels. As highlighted in section 4, the yearly meetings minutes will contain the added value of lateral or horizontal communications and discussions between NeXOS Work Package Members belonging to the same or different Work Packages.
- **European Commission Project Technical Review involving Independent Experts<sup>4</sup>:** The Commission may initiate a technical audit or review at any time during the implementation of the project and up to five years after the end of the project. The aim of a technical audit or review will be to assess the work carried out under the project over a certain period, inter alia by evaluating the project reports and deliverables relevant to the period in question. Such audits and reviews may cover scientific, technological and other aspects relating to the proper execution of the project and the grant agreement. If a review meeting is scheduled, the expert(s) will read all relevant documents before the meeting and will attend the review meeting. He/she will then provide an assessment of the project based on the written material and information provided at the meeting. In NeXOS, an Independent External Review Meeting is programmed on M18 in Brussels. The results of this event will constitute an excellent event-driven for the project to evaluate its progress and viability.

Besides the formal groups (time and event-driven reports), **other informal monitoring and control means apply in NeXOS**. These include any usual communication means to provide and receive information between the partners in the Consortium such as phone conversations, teleconferences, mailing, project intranet, project public website, project workshops or seminars, international scientific/technical events, dissemination and outreach events, etc.

As part of the management routine one or two **Tracker e-mail**, with a summary of the progress of each Work Package will be sent and requested by the Project Coordinator and Project Management Support within each 4 months internal reporting period.

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<sup>4</sup> Extracted and adapted from "Guidance notes and templates for Project Technical Review involving Independent Expert(s)"; EC, January 2011.

Dear WP Leaders,

As you know we are finalising M3 of NeXOS project. It is convenience to make a round to track the progress of each WP. Therefore I kindly request you to provide us with a similar track e-mail for each of your WPs not later than the **7th of January**.

**WP11: Project Management**

- 1.- We have completed the preparation of the CA. The signature process is advanced and we have already received many of the original copies. You can [check it here](#).
2. - The GA has already be signed by the EC. The original copy will be received soon. On this issue I must inform you that a new revised version of the GA was received the past week. A mistake was made by the EC respect to their requested contribution so we have had to agree a new GA. The final agreed DoW is the one with date **20/11/2013** but the financial contribution is based on a previous version of the GPFs (**11/11/2013**). All the documents can be found on the [intranet](#). I have already requested a gather and final version of the DoW that will be uploaded as soon as it is received. You will notice that a cut **of 14095 €** was made on our total EC contribution. On behalf the EC I would like to transmit you their apologies for the possible inconvenient that this could have caused you. See mail of our Project Officer below.
3. - We have prepared a collection of templates to facilitate Project products preparation. These can be found [on the intranet](#) and include:  
NeXOS Deliverable outline template; NeXOS Deliverable template; NeXOS Checkpoint Report template and NeXOS Meeting Minutes template.
4. - NeXOS Kick of Minutes Report have been finished. Please find [it here](#). Do not hesitate to send us your feedback if any modification/comments are necessary (**Deadline: 17/01/2014**)
4. - On regard WP11 Deliverables:
  - 4.1. - The Project Management Guide (M4): The structure and many contents of the document have been produced. An outline will be sent to the TOC for evaluation before Christmas (**10/01/2014**)
  - 4.2. - The Intranet (M4): As you can see we are constantly working on the intranet to have it prepared as our Project Management Reference Tool. A draft deliverable describing its main features will be produce for the **10/01/2014**.
  - 4.3. - The Project Website: After receiving from IEEE the Specifications document, it was spread to potential providers. We have already selected the Web designer and the work has started. A first approach will be produced in the coming days.
  - 4.4- The ASB Constitution Report: An outline of this deliverable will be provided the **10/01/2014**.

Base on this example with WP11 we kindly request you:

1. (ALL WP LEADERS) please answer to this mail informing about the status/progress of your WP
2. (WP1 & WP2) please use the NeXOS Outline template for the preparation of the following documents: Deadline **10/1/2014**:
  - a. D1.1-Requirements Framework-outline
  - b. D1.3-Project Implementation Plan-Outline
  - c. D1.4-TOC Constitution-Outline
  - d. D2.1-Market Assessment-Outline

Please once prepared, you can send the document to us and/or upload them directly on the [prepared area in the intranet](#).

3. (ALL WP LEADERS): Please download the Nexos CPR template to start to work on it. The CPR-1 must be sent to the coordinator not later than the **30/01/2014**.

Thank you all for your collaboration. Do not hesitate to contact me for any clarifications.

**Project Management Team**

**FIGURE 5.1 EXAMPLE OF PROJECT MANAGEMENT TEAM TRACKER E-MAIL IN NEXOS**

WP 9. Demonstration

- 1) We have participated in the kick off meeting in Las Palmas in October.
- 2) Meeting with Havila Shipping and Statoil has been held.
- 3) Agreements on working on The "Havila Troll" on Troll Oil field is in the pipeline.
- 4) Contacts have been made with IFREMER and NKE on starting implementing the Recopesca system in Norway. NKE has sent concentrator for the GPRS network and testing started this week.
- 5) Meeting with The Marine Institute of Norway has been held in order to establish cooperation on implementing the RECOPECA system in Norway. Consultation on this issue have also been made with NIVA.
- 6) Meeting with leader "Norwegian Maritime Forum" on cooperation on involving the Maritime Industry Cluster in Norway in the demonstrations of the new sensors and to establish dialog between partners of the NEXOS project and the Maritime industry in Norway.
- 7) A Major part of the project description of NEXOS has been translated to Norwegian in order to make it easier to communicate the NEXOS Project to regional Governments and to the Maritime Industry.
- 8) Planning of the next Project Meeting in Norway has started

**FIGURE 5.2 EXAMPLE OF WORK PACKAGE LEADER TRACKER E-MAIL IN NEXOS**

### NeXOS Management Stages

Project management is planned, monitored and controlled on a stage-by-stage basis. This principle provides the Project Management Structure with control points at major intervals throughout the life cycle of the project. Each management stage will allow control and monitoring of the progress of activities planned for that period, as a unit. At the end of each management stage each organizational level can monitor its progress, compare the level of achievement with the plan, detect problems/issues and risks and initiate corrective actions where needed.

Management stages have been established as follows:

**1<sup>st</sup> MANAGEMENT STAGE: Project Initiation– Month 1 to Month 13**

**2<sup>nd</sup> MANAGEMENT STAGE: Initiating Project Developments – Month 14 to Month 21**

**3<sup>rd</sup> MANAGEMENT STAGE: Finalizing Project Developments & Integration- Month 22 to Month 41**

**4<sup>th</sup> MANAGEMENT STAGE: Demonstrations & Project Closure - Month 42 to Month 50**

The number and duration of the management stages have been determined considering the following criteria:

- a) **Alignment with the end of Technical Work Packages (1, 3-9) and/or key NeXOS products delivery:** Based on these criteria, crucial dates are.
  1. **M9:** Delivery of Deliverable 1.1:Requirement Framework, which will also include the main specifications of the sensors to be developed in WP4 – WP7.
  2. **M39:** All development WPs in NeXOS should have delivered their products and the integration of sensors within the selected platforms should be concluded.
  3. **M47:** Demonstration Tasks should have concluded according to the initial project plan.
- b) **Alignment with Periodic Reporting periods established by the European Commission:** NeXOS have 3 compulsory reporting periods at the end of which a complete Technical and Financial Reporting has to be delivered. Delivery dates for these periods are established as follows.
  1. First Reporting Period (M1-M18): Delivery date: **M19-M20**
  2. Second Reporting Period (M19-M36): Delivery date: **M37-M39**
  3. Third and Final Reporting Period (M37-M48): Delivery date: **M49-M50**
- c) **NeXOS periodic Checkpoint Reports (CPR):** These reports must be prepared and delivered by each WP Leader every 4 months. This allows for a complete review of the work conducted within each Work Package, expected on: M4, M8, **M12**, M16, **M20**, M24, M28, M32, M36, **M40**, M44 and **M48**.

A balance of these 3 main criteria have been made to plan the management stages with the aim to take advantage of the work previously done in each of these activities to be collected and presented as part of the control, monitor and reporting activities at the end of each management stage. On the basis of these premises:

- **The end of 1<sup>st</sup> Management stage on M13** includes M9 as defined in criteria a.1 and terminates with the CPRs of M12.
- **The end of 2<sup>nd</sup> Management stage on M21** includes the First technical and Financial Report that has to be sent to the EC between M19-M20 and terminates with the CPRs of M20.
- **The end of the 3<sup>rd</sup> Management stage on M41** includes M39 as defined in criteria a.2, the the 2<sup>nd</sup> EC Periodic Report presented between (M37-M39) and finally, the CPRs of M40.
- **The end of the 4<sup>th</sup> Management stage on M50** includes M47 as defined in criteria a.3 and the CPRs on M48. At the end of this stage, the project should have ended. All the collected inputs will be used to prepare the final EC 3<sup>rd</sup> periodic report and NeXOS Final Report that have to be delivery between M49 and M50.

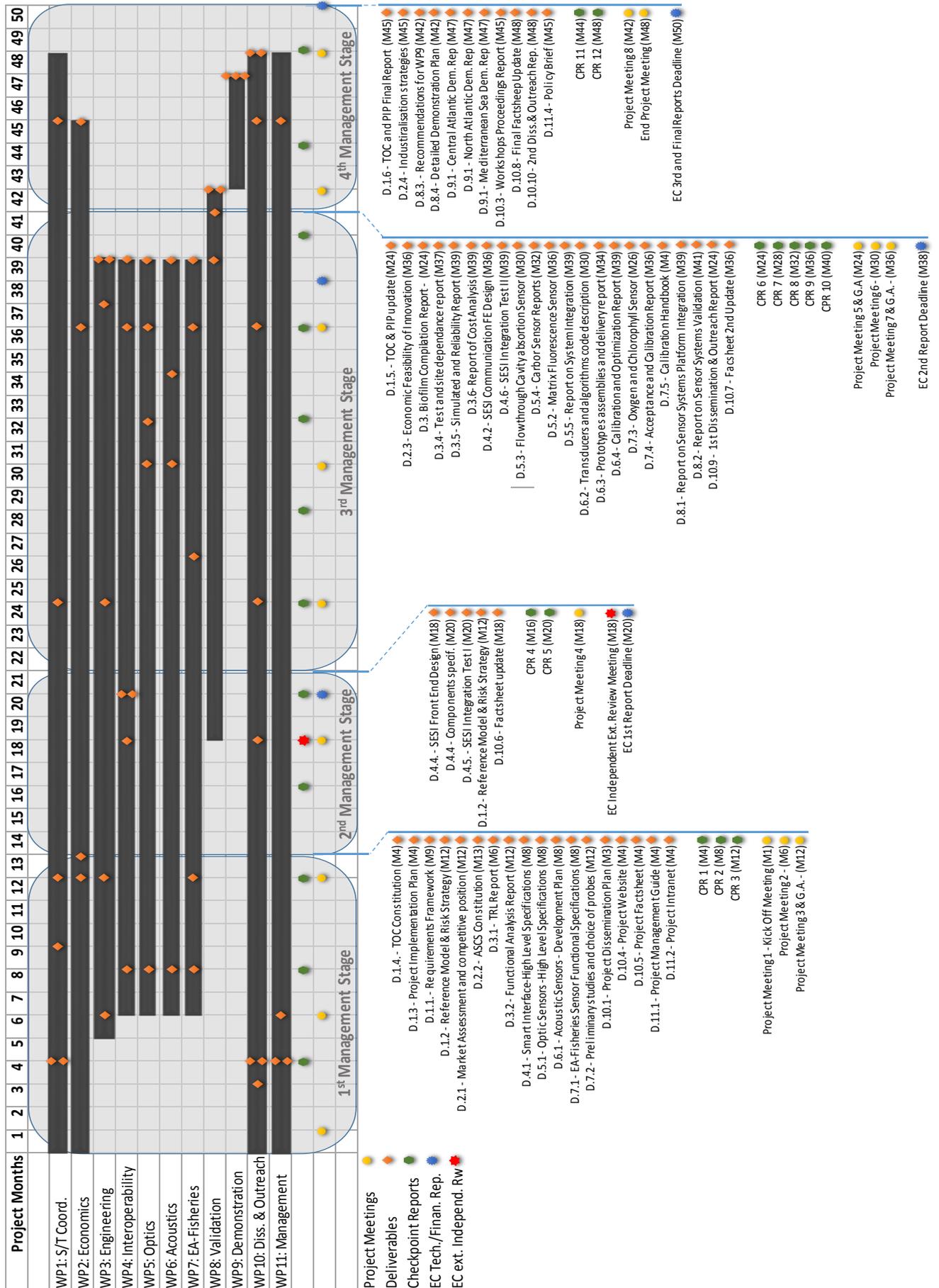


FIGURE 5.3. NEXOS MANAGEMENT STAGES AND PRINCIPAL CONTROL MECHANISMS.

## 6. QUALITY MANAGEMENT STRATEGY & QUALITY REGISTER

According to PRINCE2 Management methodology, Quality is generally defined as *the totality of features and inherent or assigned characteristics of a product, person, process, service and/or system that bear on its ability to show that it meets expectations or satisfies stated needs, requirements or specifications.*

In NeXOS, before submitting reports and deliverables to the European Commission, the Chief Scientist will assign a person from the Steering Committee or the partners with the adequate expertise to conduct a Quality Review that will involve, scientific & technical and editorial aspects, to ensure that:

- Deliverable content is in agreement with the Description of Work (GA Annex I)
- The scientific and technical content is of high quality and fit for purpose
- The formatting is in accordance with the general deliverable guidelines for NeXOS deliverables
- The language used in the report is high quality, clear, and unambiguous.
- The deliverable title, number and type match that used in Annex I

The Quality Assurance procedure is designed to be light-touch and should ensure that all deliverables also have a consistent look and feel. Two controls will be implemented:

**Brief deliverable outlines:** (2-3 pages maximum) should be sent to the Chief Scientist no later than one month after the start of the related task, who will check the coherence with the Description of Work, the general structure and objectives, the assigned roles and timeline.

**Completed deliverables:** should be submitted to the Chief Scientist no later than one calendar month before submission to the EC, to allow for the review. The selected reviewer will send their review to the Chief Scientist. The Chief Scientist will then inform the lead of the deliverable. The report will be revised by the lead of the deliverable who will send the revised report, with « track changes » (or similar) enabled, to the Coordinator with the Chief Scientist in copy. The Coordinator will submit the deliverable.

To trace the process, each document shall have a box on the copyright page with the names of the lead author and a report version number and date.

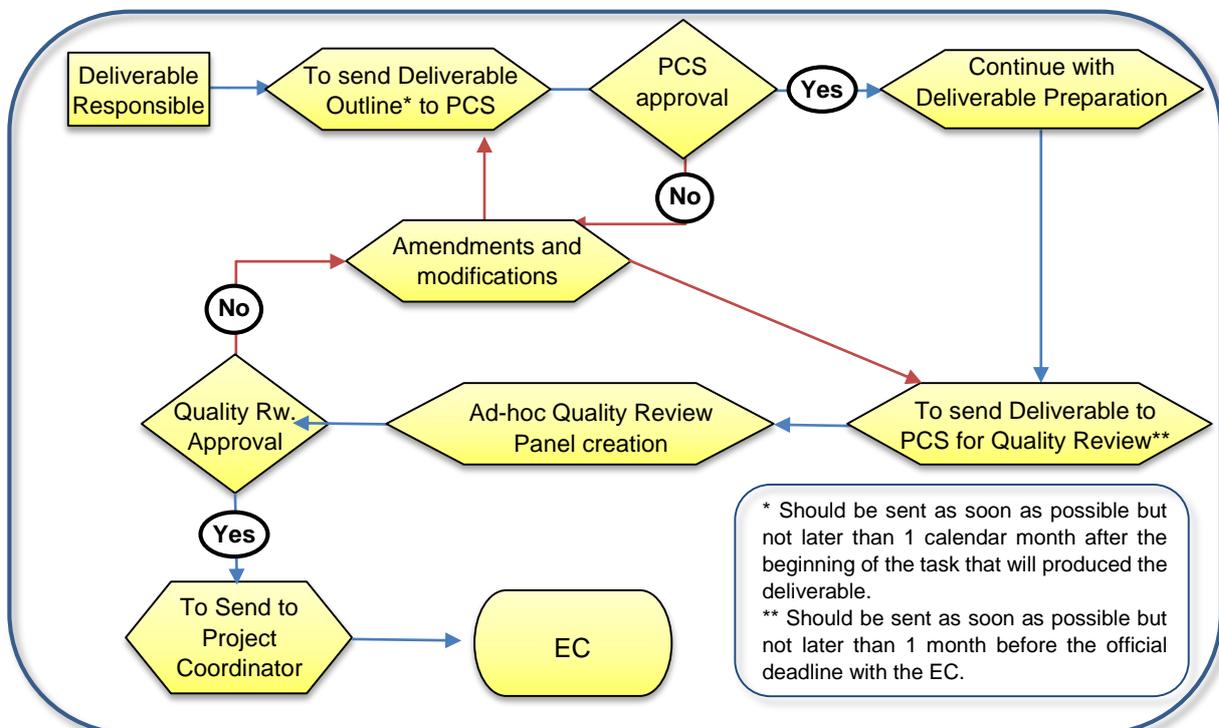


FIGURE 6.1 FLOW DIAGRAM OF THE QUALITY REVIEW PROCESS IN NEXOS

Any issues raised by the checking process will be added to a quality register maintained by the Chief Scientist so that persistent issues can be resolved and/or this guidance updated. The Quality Register will be implemented and updated by means of the NeXOS intranet. As shown in Figure 6.1, the NeXOS Quality register will be composed of the following columns:

**N°:** This item registers the quality identifier for each Deliverable.

**Document ID:** Registers the code assigned to each Deliverable under evaluation.

**EC Deadline:** Registers the delivery date for each Deliverable under Quality review.

**Responsible:** Registers the partner responsible for the Deliverable under evaluation.

**QR Responsible:** Identifies the partner that is responsible for Quality Evaluation Process. This partner is the University of Bremen (Uni-HB) as leader of WP1: Scientific and Technical coordination and, particularly, by the Project Chief Scientist (PCS). The PSC will assign the adequate Quality reviewer to each product that will be evaluated. When the Responsible for Deliverable creation is Uni-HB, it will be PLOCAN the QR Responsible.

**Result:** Registers the conclusion of the Quality review process. Only two options will be available in the Register; OK when has been approved or pending either because has failed or has not been review yet.

**Outline:** Registers the date when the Outline of the Deliverable has been submitted for Quality Review

**Planned Delivery (QR):** Registers the date when the results of the Quality Review of the Outline is planned to be delivered.

**Delivery Date (QR):** Register the actual date when the result of the Quality Review of the Outline has been performed.



Quality Register

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  - Outlines
  - Project Deliverables
  - Reports
- 5.-Dynamic documentation
  - Issue Register
  - Quality Register**
  - Risk Register
- 6.-Meetings
  - Consortium Meetings
  - Internal Meetings
  - Meeting Documentation

5.-Dynamic documentation >  
Quality Register

The quality review of the deliverables should be done progressively, while the deliverable is being performed. Finally, the deliverables will be sent to WP11 Members (Project Management Team Contact List) one month before the European Commission deadline.

[Add item](#) [Customise this list](#) Showing 3 items

N°	Document ID	Document Title	EC Deadline	Responsible	QR Responsible	Result	Outline	Planned Delivery (QR)	Delivery Date (QR)
Sort ↓ 3	Sort ↓ 140119-NXS- Outline-D.1.3	Sort ↓ Outline of D.1.3-Project Implementation Plan	Sort ↓ 31 January 2014	Sort ↓ Uni-HB	Sort ↓ PLOCAN	Sort ↓ Pending	Sort ↓ 19 January 2014	Sort ↓ 24 January 2014	Sort ↓
2	140122-NXS- WP11_NXS- D.11.1-v.0.1	D.11.1. Project Management Guide	31 January 2014	PLOCAN	Uni-HB	OK	1 January 2014	10 January 2014	23 January 2014
1	131230-NXS- WP10_D.10.1- v.1.2_final	D.10.1-NeXOS Dissemination and Outreach Plan	31 December 2013	IEEE	Uni-HB	OK	2 December 2013	22 December 2013	22 December 2013

Showing 3 items

FIGURE 6.2 SHOWS A SCREENSHOT OF THE NEXOS QUALITY REGISTER

## 7. RISK MANAGEMENT STRATEGY & RISK REGISTER

### General aspects

As part of the General Management Procedures, this section describes a simplified version of the Risk Management Strategy and the baselines of the procedure, i.e. how the risks in the project will be registered.

The level of multidisciplinary Scientific and Technical complexity in NeXOS, requires a permanent coordination, throughout the project, that will constantly deal with technical risks identification, plan and implementation of responses and/or contingency measures. This role is taken in NeXOS by WP1 Leader, the Project Chief Scientist, assisted and supported by WP3 Leader as Project Chief Engineer. The Risk Management Strategy will be completed in full detail with the Development of this Work Package and, in particular, under the execution of Task 1.3 and the production of Deliverable 1.2.

**Task 1.3 of the Scientific and Technical Coordination Work Package (WP1) deals with Risk identification and the preparation of the contingency plans for specific Research and Technological Developments goals in the Project.** Technical risk management, as integral part of

the Risk Management Strategy, includes the identification, quantification, impact assessment, and implementation of mitigation measures throughout the development cycle.

This task shall establish and implement a risk management plan to assess variability and uncertainty in regard to requirements and needs. The plan will:

- identify potential sources of technical risk including critical parameters that can be risk drivers
- quantify level of risk, and impacts on cost (including life cycle costs), schedule and performance
- determine alternative approaches to mitigate moderate and high risks
- take actions to avoid and control risk
- make decisions for selection of specification requirements and alternative designs and solutions that factor in risk

Mitigation measures will include redistribution of funds between the tasks, adaptation of requirements (if specifications are not feasible) and rescheduling of development tasks.

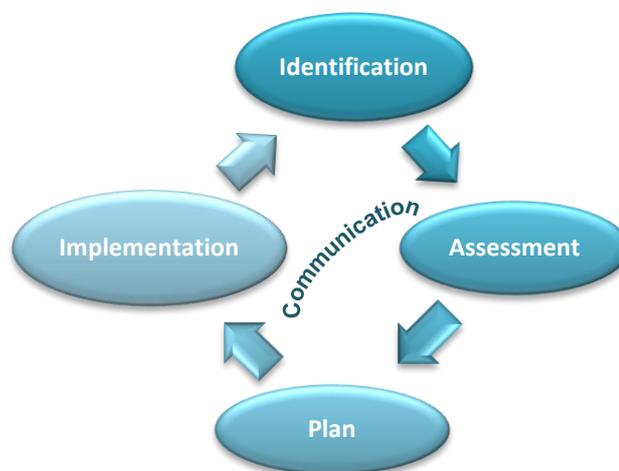
**A specific deliverable of the Risk Management Strategy will be included in Deliverable 1.2: Final Report on General System Requirements, to be delivered on M12.**

**Risk management procedure**

Management of risk is established as a systematic process based on a proactive identification, assessment and control of risks that might affect the delivery of the project’s objectives. The aim of the risk procedure is to support better decision making through a good understanding of risks, their causes, likelihood, impact, timing and the choice of responses to them.

The concept of risk is, based on the PRINCE2 methodology applied to NeXOS, any *uncertain event or set of events that, should it occur, will have an effect on the achievement of objectives*. It consists of a combination of the probability of a perceived threat or opportunity occurring, and the magnitude of its impact on objectives. **Threat** is used to describe an uncertain event that could have a negative impact on objectives while an **Opportunity** is an uncertain event that could have a positive impact on objectives.

The risk management procedure consists of 4 sequential steps which include: Identify, Assess, Plan & Implement, and an additional transversal step which is to Communicate each of the findings of the previous steps. Figure 7.1 shows NeXOS Risk Management procedure as tailored from PRINCE2 methodology.



**FIGURE 7.1 NEXOS RISK MANAGEMENT PROCEDURE**

1. **Risk Identification:** This step is to recognize the risks (threats & opportunities) that may affect the project’s objectives.

In NeXOS, through formal and informal communication means, the risks can be raised to the Project

Management Team by any person involved in the project. The PMS will then include the new risks in the Risk register.

2. **Risk Assessment:** This step is to assess the threats and opportunities to the project in terms of their variables of probability and impact. The risk proximity is also analyzed to estimate how quickly the risk is likely to materialize if no action were taken.

Management risk assessment will be coordinated by the Project Management Team. The PC or the PMS will require punctual and/or specific support to determine the probability/impact and proximity of each risk to other members of the consortium when relevant.

Technical risk assessment will be coordinate by the Project Chief Scientist in the framework of Work Package 1.

After the assessment of each variable, the results will be registered to the Risk Register.

3. **Response Plan:** The primary goal of the Plan is to prepare specific responses to the threats and opportunities identified and assessed, ideally to remove or reduce the threats and to maximize the opportunities. The Project Management Team will provide responses to management risks while the PCS, in the framework of WP1, will provide potential responses to technical/scientific risks.

4. **Response Implementation:** The goal of this step is to ensure that the planned risk responses are implemented, their effectiveness monitored and contingency actions executed if the planned responses do not solve the problem.

When managing the risks, clear role and responsibilities are necessary:

- *Risk owner:* the person responsible for the management, monitoring and control of all aspects of a particular risk.
- *Risk actionnee:* the person assigned to carry out a risk response action/s to respond to a particular risk.

### Risk Register

Risk management activities will be recorded in the Risk Register, hosted by the project Intranet. The Project Management Team will review and update the Risk Register as part of their activities throughout the management Stages.

[5 - Dynamic documentation >](#)  
Risk Register

The risks' detection in the project is carried out by all the project members (information about risks will be given by the Work Packages Leaders in the Checkpoint Reports). The Project Management Team will update the Risk Register on a regular basis.

Ref.	Author	Date	Risk Category	Description	Probability	Impact	Proximity	Response Category	Response	Status	Owner
1	PLOCAN	2/7/2013	Threat	Problems in the project procedures for partners (e.g. failures of accountability, internal systems and controls, organisation, etc.)	Low	Medium	Within project	Reduce	This risk is considered with low probability since all the partners have long experience in working in the context of FP Projects. Possible problems will be reduced through an early shared of the Project Management Guidelines (D.11.1, M2) and the periodic monitoring and control of the Project Management Team (PMT).	Active	PLOCAN
2	Uni-HB	2/7/2013	Threat	Excess of additional requirements identified in WP1 The project may propose additional sensors or requirements not foreseen at proposal stage. This may result in unattainable objectives.	High	High	Within stage	Reduce	The development team will be continuously interacting with WP1 to reduce the definition of unattainable objectives.	Active	Uni-HB
3	PLOCAN	2/7/2013	Threat	Unforeseen delays may occur in the development of the sensor components, which would impact the execution of subsequent activities	Low	Medium	Within stage	Avoid	Interim reporting within WPs will permit early identification of bottlenecks. These will be handled with diligence as soon as they are identified in order to mitigate the risk of delays	Active	PLOCAN
4	PLOCAN	2/7/2013	Threat	Validation or demonstration activities are delayed due to meteorological or operational reasons	High	High	Within stage	Avoid	The project was purposefully scheduled on four years to provide sufficient time margin for rescheduling these activities	Active	PLOCAN
5	IFREMER	2/7/2013	Threat	Innovative biofouling protection is disturbing one of the wavelength necessary for an optical sensor	Medium	Low	Within stage	Avoid	Use local chlorination for this specific sensor. The biofouling protection control can be applied as well in this case	Active	IFREMER
6	IFREMER	2/7/2013	Threat	The first biofouling protection control experiment provides results too dependent on the biology of the site (WP3) to convince the market.	High	Low	Within stage	Reduce	Experiments in WP3 and WP9 will allow comparison between several sites.	Active	IFREMER
7	PLOCAN	2/7/2013	Threat	Platform unavailability for validation or demonstration due to unforeseen operational events	Medium	Medium	Within project	Fallback	NEXOS would reassign resources to other partner of the consortium, who owns platform of similar characteristics	Active	PLOCAN
8	PLOCAN	2/7/2013	Threat	Integration and validation significantly delayed due to incomplete or delayed assembly	Medium	Medium	Within stage	Reduce	Several units will be prepared for integration and validation. If one is delayed, remaining units will be validated according to plan, and progression of the project will not be significantly affected.	Active	PLOCAN

FIGURE 7.2 SCREENSHOT OF NEXOS RISK REGISTER ON THE PROJECT INTRANET

The Risk register consists of the following items:

**Ref:** Unique reference for risk identification

**Author:** The partner who creates the risk

**Date:** The date that the risk was registered

**Risk Category:** This item describes whether the risk is a threat or an opportunity

**Description:** A short description of the risk

**Probability:** This item describes the probability of the risks in terms of how likely they are to occur.

**Impact:** The impact of each risk in terms of how they will affect project objectives.

**Proximity:** The proximity of the risk with regard to when the risk might materialize.

**Response category:** This item describes the type of response plan for each risk

**Response:** A short description of response implementation for each risk.

**Status:** This item describes if the risk is still active or has been closed.

**Owner:** The partner who is in charge of the management, monitoring and control of the risk

**Actionee:** The partner who represents the main responsible to carry out the risk response action or actions.

## 8. ISSUE MANAGEMENT STRATEGY & ISSUE REGISTER

Annex 1 of the NeXOS Grant Agreement, a.k.a Description of Work (DoW), constitutes the baseline document agreed for the project execution. However, the Project Management Structure will need to deal with changes during the life of the project and, therefore, an effective Issue Management Strategy and Issue Register system should be established.

According to PRINCE2 methodology tailored in NeXOS, an Issue is any relevant event that has happened, was not planned and requires management action/s. An issue is classified in NeXOS as a concern or a problem, a request for a change or a suggestion or off-specification raised during the project execution:

**Request for a change:** Any proposal made by any partner for a change to the project baseline (DoW).

**Off-specification:** Something that should be provided by the project (Outline, deliverable, report, etc...) but currently is not provided. This might be a missing product of the project or a product not meeting its specifications in terms of timing, costs, quality or scope.

**Problem/concern:** Represents any other issue that needs to be resolved or escalated.

Issues may be raised at any time during the project by anyone involved in it. The formal and informal communication systems detailed in sections 4 and 5 can be used. The Project Management Team will register each of the formal Issues identified, as well as those considered relevant to impact on project objectives, in the Issue Register on the project intranet.

[5 - Dynamic documentation >](#)  
[Issue Register](#)

The issues' detection in the NeXOS project is carried out by all the project members (information about issues will be given by the Work Packages Leaders in the Checkpoint Reports). The Project Management Team will update the Issue Register on a regular basis.

[Add item](#) [Customise this list](#) Showing 2 items

N°	Issue Type	Description	Date Raised	Raised by	Priority	Severity	Status	Closure Date
2	Request for change	Change O&Dw1 for mini-workshops	Monday, 20 January 2014	IEEE	Medium	Low	Pending	
1	Problem/Concern	Inputs for WP2-Economics		ECORYS	Medium	Medium	Closed	

Showing 2 items

[Add files](#)

**FIGURE 8.1 SCREENSHOT OF NEXOS ISSUE REGISTER ON THE PROJECT INTRANET**

The Issue Register is composed of the following items and will be updated on a regular basis by the Project Management Team.

**N°:** Issue identifier

**Issue Type:** This item determines the type of issue registered.

**Description:** A short description of the issue registered.

**Date raised:** The date when the issue was communicated.

**Raised by:** The partner who elevated the issue.

**Priority:** The management priority assigned by the Project Management Team

**Severity:** The relevance level of their potential impact on the project objectives.

**Status:** Determines if the issue is still opened or closed.

**Closure date:** When the issue was considered solved.

## 9. CONFIGURATION MANAGEMENT

The configuration management represents the technical and administrative activity concerned with the maintenance and controlled change of configuration of any NeXOS product (Outline, deliverable, reports, etc.).

The Intranet is the tool used to contain the records baselines of each of the project products and will ensure that the correct version is the one provided for their specific purposes.

Documents in NeXOS will be encoded in order to keep track of the changes and the different versions, as follows: YYMMDD\_NXS\_WPN\_DIN\_v.X.X, where:

- YY: Year when the document was created
- MM: Month when the document was created
- DD: Day when the document was created
- NXS: Project identifier, in this case NXS for NeXOS
- WPN: Work Package Number;
- DIN: Document specific identifier:
  - In case of a Deliverable: *D.X.X.* where X.X are the numbers assigned to each deliverable in NeXOS Description of Work.
  - In case of other type of document it will be use one word for identification, e.g. in case of a project Outline: *Outline.*
- V.X.X: Version number of the document. First "X" varies from 1 to 9 due to major modifications. Second "X" varies from 1-20 according to light modifications. When no further modifications are allowed the word "final" will be added.

For example the final version of this deliverable will be encoded 140129\_NXS\_D.11.1-v.1.0-final.

The NeXOS Intranet for Configuration Management and Register consists in the following folders and objectives:

1. **Baseline Documentation:** where the main Reference, Legal and Support Documents are recorded
  - 1.1. **Legal Documentation:** contains NeXOS Confidentiality Agreement, Consortium Agreement and Grant Agreement.
  - 1.2. **Main Guidelines:** contains the main documents provided by the European Commission in regard to "The Ocean of Tomorrow Call", involved Work Programmes, main guidelines and instructions.
  - 1.3. **Project Proposal Documentation:** contains the Description of Work and Grant Preparation Forms of NeXOS. In addition it contains Part B of the Project sent as proposal and its modification after the negotiation process.
2. **Project Reporting:** contains the main documentation produced in NeXOS: Dissemination activities register, NeXOS Deliverable Outlines, NeXOS Deliverables sent to the EC, NeXOS Reports and NeXOS Templates.
3. **Meetings:** contains all the documentation prepared pre, during and post-meetings. This includes: meeting agendas, meeting presentations and support documentation, and meeting minutes.
4. **Project Workspace:** allows each Work Package Leader to organize the documentation relevant to their work packages. Furthermore, within this folder, specific areas for NeXOS Management Committees and Subcommittees are available.

More information on the structure of the intranet can be found in NeXOS Deliverable 11.2: NeXOS Intranet.

## 10. ANNEX I: PROJECT TEMPLATES

### NeXOS PROJECT TEMPLATE FOR DELIVERABLE OUTLINE



NeXOS Work Package X Deliverable x.x Outline

*Delivery date of the final deliverable: dd/mm/yyyy*

*Deliverable Responsible Institution Name*

	 <p>COOPERATION</p>	<p>NeXOS — Next generation Low-Cost Multifunctional Web Enabled Ocean Sensor Systems Empowering Marine, Maritime and Fisheries Management, is funded by the European Commission's 7<sup>th</sup> Framework Programme, Grant Agreement number 614102.</p>
---	--	--

General Editorial Guidelines: Please consult the Project Management Guide to meet the standard format requirements (e.g. fonts) and use the Deliverable template, which can be found in the “[Configuration Register](#)” in NeXOS Intranet.

PLANNING

Participant	Person-Months	Contributors	Role in Dx.x /WPx
Acronym	...	Name	...
Add rows...	...	...	...
<b>TOTAL</b>	...		

NEXOS TASK X.Y – FROM THE DESCRIPTION OF WORK

<b>Objectives</b>
<i>&lt;List here the objectives of the work to be done&gt;</i>

<b>Description of Work</b>
<ul style="list-style-type: none"> <li>Associated Task(s) X. Title [Partners involved; Mx–Mx]</li> </ul> <i>&lt;Summary of work to be carried out, include subtask level, for each task&gt;</i>

<b>Input needed</b>
<ul style="list-style-type: none"> <li>Dx.y: Title</li> </ul> <i>&lt;Description of input needed, e.g. links with other deliverables, dependencies, etc&gt;</i>

<b>Task work plan</b>
<ul style="list-style-type: none"> <li>...</li> </ul> <i>&lt;Give a brief description of your task work plan, step by step&gt;</i>

**Task timeline (See example below – double click to edit in Excel or compatible)**

	Project month									
	M13	M14	M15	M16		M33	M34	M35	M36	
	mars-13	avr-13	mai-13	juin-13		oct-14	nov-14	déc-14	janv-15	
<b>Task 5.4: Environmental Monitoring Programme</b>										
Define initial outline										
Review of background documents										
...										
Design of...										
Development of...										
Testing of...										

## DELIVERABLE STRUCTURE/OUTLINE

### 1. *Executive Summary*

*<Depending on document size; A 3 to 5 page executive summary is desired for deliverables of more than 100 pages>*

### 2. *Introduction*

### 3. *Reference documents*

### 4. *Section Title*

*<For each section title, describe what you plan to report on, name a lead of the section and add the subsections where necessary>*

#### a. *Subsection x*

*<Subsections are useful for identifying who does what, so if you add subsections each subsection should come with a lead name>*

### 5. *Conclusions*

### 6. *Bibliography*

*NeXOS PROJECT TEMPLATE FOR DELIVERABLE PREPARATION*



**DX.X– Deliverable name**

Lead organisation for this deliverable  
Institution Full Name

Lead authors: name and surname (Acronym), ....

Contributors: name and surname (Acronym), ....



**THE OCEAN OF TOMORROW**

NeXOS - Next generation Low-Cost Multifunctional Web Enabled Ocean Sensor Systems Empowering Marine, Maritime and Fisheries Management, is funded by the European Commission's 7<sup>th</sup> Framework Programme - Grant Agreement number 614102

**Deliverable X.X – Deliverable name****Project Acronym:** NeXOS**Project Title:** Next generation Low-Cost Multifunctional Web Enabled Ocean Sensor Systems Empowering Marine, Maritime and Fisheries Management.**Programme:** The Ocean of Tomorrow 2013 – 7<sup>th</sup> Framework Programme**Theme 2:** Food, Agriculture and Fisheries, and Biotechnology**Theme 4:** Nanosciences, Nanotechnologies, Materials and new Production Technologies**Theme 5:** Energy**Theme 6:** Environment (including climate change)**Theme 7:** Transport (including aeronautics)**Topic:** OCEAN.2013-2 Innovative multifunctional sensors for in-situ monitoring of marine environment and related maritime activities**Instrument:** Collaborative Project**Deliverable Code:** 131230-NXS-WPX\_D.X.X-v.X.X\_final**Due date:** YYYY/MM/DD

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Restricted to a group specified by the consortium (including the Commission Services)	
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<i>Edit./Rev.</i>	<i>Date</i>	<i>Name</i>
Prepared	...	
Checked	...	
Approved	...	Project Coordinator

**DOCUMENT CHANGES RECORD**

<i>Edit./Rev.</i>	<i>Date</i>	<i>Chapters</i>	<i>Reason for change</i>

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## Abstract

<Insert the abstract of the deliverable>

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Subsection 1.2

**2. CHAPTER 2**

Subsection 2.1

Subsection 2.2

....

**NeXOS PROJECT TEMPLATE FOR CHECK POINT REPORT PREPARATION**

**NeXOS Work Package X Checkpoint Report Template**  
*Months ...<sup>th</sup> to ...<sup>th</sup> (Month X 201... – Month Y 201...)*

*Work Package Leader Institution Name*

 	NeXOS — Next generation Low-Cost Multifunctional Web Enabled Ocean Sensor Systems Empowering Marine, Maritime and Fisheries Management, is funded by the European Commission's 7 <sup>th</sup> Framework Programme, Grant Agreement number 614102.
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*Work Package Leader.*

*When setting a red or yellow traffic light, a reason must be given why the deliverable will not be available as anticipated>*

			
<u>Products completed n<sup>a</sup>1</u>			
<i>&lt;description here&gt;</i>			
<i>&lt;Add rows if necessary&gt;</i>			

Quality management activities carried out during the period	
Quality Management Activities	Status
<i>&lt;E.g. Outline review, deliverable quality control phase, etc&gt;</i>	<i>&lt;Sent, reviewed, approved, etc.&gt;</i>

Issues and risks identified during the work execution
<i>&lt;List here all issues and risks identified&gt;</i>

Lessons identified during the work execution
<i>&lt;List here lessons identified, if any&gt;</i>

Contributions to Gender Balance
<i>&lt;List here all contributions to gender balance&gt;</i>

Dissemination activities							
<p>&lt;List of all dissemination activities (publications, conferences, workshops, web sites/applications, press releases, flyers, articles published in the popular press, videos, media briefings, presentations, exhibitions, thesis, interviews, films, TV clips, posters). Table 2-1 must be presented.&gt;</p> <p>Table 2-1. Dissemination activities carried out in the present period</p>							
#	Type <sup>5</sup>	Leader	Title	Date & Place	Audience <sup>6</sup>	Scope	Link
1	Conference	PLOCAN	Euroceans 2013	6th-8th November; Gran Canaria	Scientific Community, 85 persons from 19 countries	Internt.	<a href="#">Eur-Oceans</a>
...		...		...			

### NEXT reporting period

The work to be conducted in the next Checkpoint Reporting Period (4 months), including:

- Expected meetings to be held.
- The products being developed by the team during the next reporting period.
- The products planned to be completed by the team during the next reporting period.

Quality management activities planned for

<sup>5</sup> Select the type of dissemination activity from the following list: publications, conferences, workshops, web, press releases, flyers, articles published in popular press, videos, media briefings, presentations, exhibitions, thesis, interviews, films, TV clips, posters, Other.

<sup>6</sup> Include the type of public from the following list: Scientific Community (higher education, research), Industry, Civil Society, Policy makers, Medias, Other