

D1.1

Project Handbook

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List of Acronyms

AB	Advisory Board
AVA	Avanti Communications LTD
CA	Consortium Agreement
CO	Confidential
CT	Change Tracking
DLR	Deutsches Zentrum für Luft- und Raumfahrt e.V.
EB	Ethics Board
EC	European Commission
GA	Grant Agreement
IM	Innovation Manager
IPR	Intellectual Property Right
IR	Internal Report
MB	Management Board
MoM	Minutes of Meeting
MS	Microsoft
HEIMDALL	Multi-Hazard Cooperative Management Tool for Data Exchange, Response Planning and Scenario Building
PB	Project Board
PC	Project Coordinator
PCF	Fundació d'Ecologia del Foc i Gestió d'Incendis Pau Costa Alcubierre
PM	Project Manager
PP	Restricted to the Programme's Participants
PU	Public
QMR	Quarterly Management Report
RE	Restricted
SM	Stakeholders Manager
SPH	Space Hellas S.A.
TL	Task Leader
TM	Technical Manager
ToC	Table of Contents

TSYL	Tecnosylva S.L.
WP	Work Package
WPL	Work Package Leader

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Executive Summary

This document provides guidance to the Project Consortium on the governance structure of the HEIMDALL project and the project boards, project tools for communication, planning and management. It specifies the quality plan and procedures to be applied during the project, as well as risk and ethical issues management procedures.

1 Introduction

The project handbook is a document that specifies structures, procedures and available tools for the implementation of the HEIMDALL project. The document provides all information required to access the available tools, understand and implement the procedures in a harmonised manner by all partners and clarify roles and responsibilities in specific procedures to be carried out during the project. In particular, the document is organised as follows:

Section 2 specifies the project governance structure and the project boards, with roles and responsibilities.

Section 3 describes the project tools for communication, management and planning.

Section 4 specifies the quality plan, including project document types' description, naming conventions, styles and templates, procedures to edit deliverables, to establish the dissemination level of deliverables, to edit quarterly management reports, etc. Additionally, the scientific quality assurance methodology is also described.

Section 5 specifies the risk management methodology.

Finally, section 6 summarizes and concludes the document.

2 Project Governance and Communication Flows

2.1 Project Management Structure

The HEIMDALL project management structure is depicted in Figure 2-1. The roles of each element of the management hierarchy are described in the following subsections.

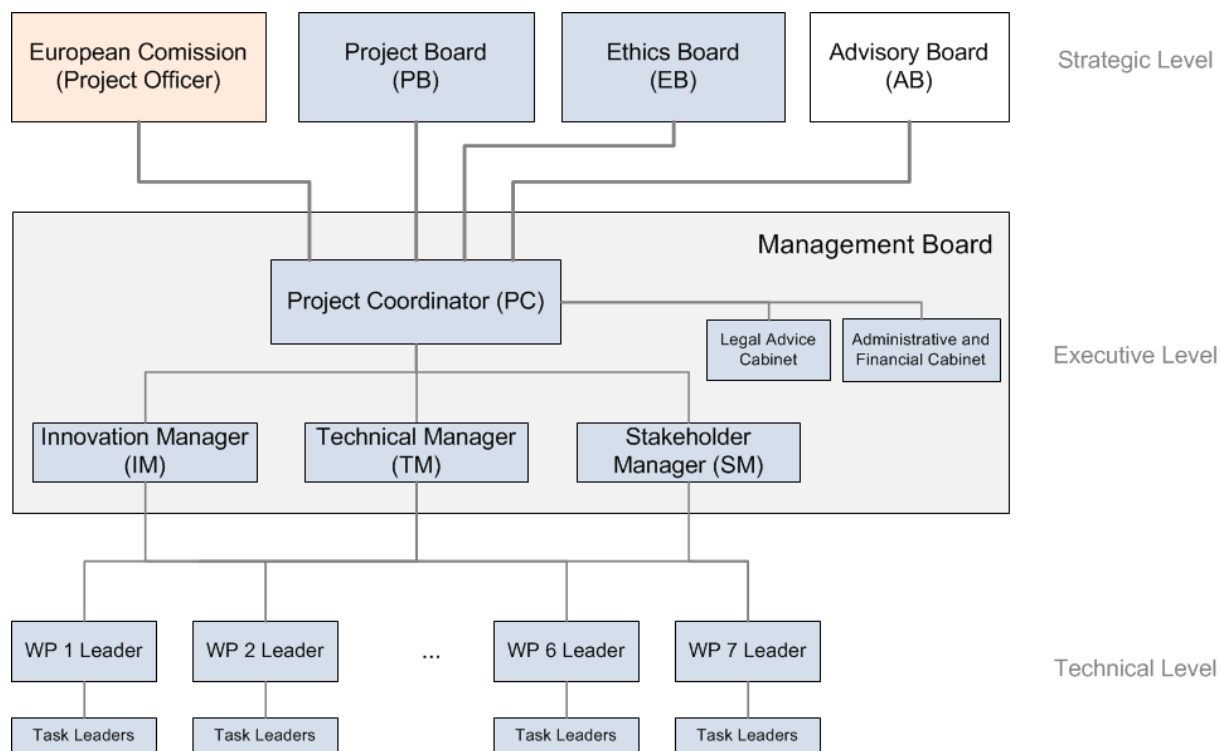


Figure 2-1: Project Management Structure.

2.1.1 Strategic Level

2.1.1.1 The Project Board (PB)

The PB is the formal decision making body of the consortium. It consists of the Project Coordinator (PC), as chair of the board, and one representative from each consortium partner, holding a mandate from their organisation to negotiate on its behalf and commit resources. The PB has the following duties:

- To establish policies for decision making at lower levels in the project;
- To decide on and execute changes to the project plan, in agreement with the EC;
- To approve/reject WP's work plan proposed by the WP leaders;
- To establish mechanisms, to be implemented by the PC, in order to ensure the quality and timely delivery of the project results and milestone achievement;
- To evaluate opportunities for co-operation with other projects and decide on their implementation;
- To decide upon joint publications of the consortium partners with regard to generated foreground during the project and contributions to standards;
- To consider recommendations of the Advisory Board (AB) and the Ethics Board (EB), deliberate with these boards on suitable solutions, decide on their implementation and establish the means to implement them;

- To resolve conflicts which affect the integrity of the consortium or imply changes to the work plan and/or budget.

The Project Board will meet at least every 3 months in a face-to-face basis, with meetings co-located with the general Progress Meetings. Attendance is mandatory for all PB members.

2.1.1.2 Ethics Board (EB)

The EB is responsible for identifying ethical issues in the course of the project work and for providing advice to the project team on addressing such issues. The EB is composed by the project partner with expertise in ethics in research (EKUT) and the project coordinator as representative of the PB. Its duty will be accomplished by the realisation of the following tasks:

- To continuously monitor the technical work in the project;
- To identify, document, communicate and monitor ethical issues related to the technical work;
- To propose countermeasures to address ethical issues to the PB and deliberate together on suitable solutions.

The Ethics Board will meet at least every 3 months in a face-to-face basis, with meetings co-located with the general Progress Meetings. Attendance is mandatory for all EB members.

2.1.1.3 The Advisory Board (AB)

The AB is a group of appointed international experts representing different stakeholder groups of the HEIMDALL system, which are external to the project consortium. European emergency/first responders and decision makers compose the AB, having expressed their interest in the project outcomes in letters of intent. The role of the AB is to provide advice to the project team from the stakeholder perspective and:

- Provide the relevant information to the management board to tailor strategic decisions to achieve relevant and efficient services for stakeholders;
- Provide insights in order to steer the developments towards the fulfilment of stakeholder needs;
- Enable validation of the project outcomes in the operational context of stakeholders.

To fulfil this role, the project team will organise five dedicated workshops during the course of the project where the AB will participate together with the project team. The purpose of these workshops will be (i) to gather and discuss user needs and achieve understanding on their operations, (ii) gather feedback on the project developments at different stages enabling in-process validation and in-time tailoring of developments to user needs, (iii) collect expert knowledge that needs to be shared, (iv) provide support, relevant data and access to facilities for selected test areas and (v) to participate in training and final demonstration for the final validation of the developed services in an operational context.

It shall be noted that the AB provides advice; however, the AB is neither involved in the decision nor in the conflict resolution processes. The advice provided by the AB is a powerful resource for the PB to make strategic decisions that may translate into specific technical decisions at executive level, where applicable (e.g. definition of user requirements and prioritisation of technical requirements, design decisions in specific aspects, selection of dissemination fora, etc.).

Several entities/experts have been contacted and some of them have already committed to join the Advisory Board (AB) of end users. At the time of issuing this document, the entities listed below have provided letters of intent.

- SAFE Cluster (France) [2]

- Agencia de Medio Ambiente y Agua, Consejería de Medio Ambiente y Ordenación del Territorio; Junta de Andalucía (Spain) [3]
- Conselleria de Medi Ambient, Agricultura i Pesca; Govern de les Illes Balears (Spain) [4]
- Instituto Geológico y Minero de España (Spain) [5]
- Departamento de Desarrollo Rural y Sostenibilidad; Gobierno de Aragón (Spain) [6]
- Croatian Firefighting Association (Croatia) [7]

2.1.2 Executive Level

2.1.2.1 The Management Board (MB)

The MB is responsible of the executive management and is composed of the PC, the Stakeholder Manager (SM), the Technical Manager (TM) and the Innovation Manager (IM). The MB meets at least every 3 months to ensure consistency between stakeholders' expectations, technical development, budget and business opportunities.

2.1.2.1.1 The Project Coordinator (PC)

The PC is the entity among the members of the consortium acting as the intermediary between the partners and the EC, having specific additional contractual, legal, financial and administrative obligations for the consortium coordination, and responsible at an operational level of the day-to-day management of the project. Mr. Javier Mulero Chaves (DLR) is the person to implement the duties assigned to the PC, assisted by the *Legal advice* cabinet and the *Administrative* and *Financial* cabinets, which hold the relevant competences to assist in administrative tasks and legal/contractual aspects. The PC responsibilities are:

- To act as intermediary for communication with the EC, other relevant European projects and initiatives and other relevant stakeholders;
- To monitor and make sure that all parties comply with their obligations under the Grant Agreement (GA) and Consortium Agreement (CA);
- To moderate conflict resolution processes and perform risk management;
- To evaluate risks on the achievement of project goals implied by the EB monitoring and ensure that such issues are addressed by the PB;
- To monitor the overall project progress in terms of technical achievements and financial aspects and liaise with the TM to propose solutions to the PB when required;
- To monitor the overall cooperation with the end users and AB members and liaise with the SM to identify plan deviations and propose solutions to the PB when required;
- To evaluate the impact of recommendations by the IM with regard to business opportunities and propose solutions to the PB if project plan changes are required;
- To report quarterly the EC about the project as well as by means of Periodic (yearly) and Final Reports;
- To organise, convene, document and chair PB meetings, technical meetings involving the full consortium and periodic teleconferences addressing the overall project progress;
- To appoint quality reviewers for project deliverables and supervise the quality control;
- To submit project deliverables to the EC.

2.1.2.1.2 The Technical Manager (TM)

The TM is responsible for coordinating the technical progress of the project in terms of system engineering. Mr. Benjamin Barth (DLR) is the person appointed to implement this role that includes the following duties:

- To ensure that the overall technical objectives of the project are met;
- To assist the PC in monitoring the overall project progress in terms of technical achievements, and liaise with WP leaders to propose solutions to arising issues of technical nature;
- To perform coordination of requirements engineering (definition, monitoring and maintenance) to ensure that the final results of the project comply with the targeted solution;
- To ensure the consistency of development activities in the project with the overall system objectives, considering the market opportunities reported by the IM.

2.1.2.1.3 The Innovation Manager (IM)

The IM is responsible for responding to emerging market opportunities, assuring that the targeted developments in the project can be transformed into competitive products and services. Hence, the IM assists the PC and TM in keeping the balance between the technical development and business opportunities related to the targeted users. Mr. Joseph Muna (AVA) is the person appointed to fulfil this role. The concrete duties of the IM are:

- To identify and monitor business and market opportunities related to the project scope;
- To communicate business and market opportunities to the PB in order to make sure that the technical developments in the project can be turned into sustainable services and products;
- To coordinate the business plan for the HEIMDALL system, including elaboration of concepts of operation, joint and individual exploitation plans, the relationship between partners in the exploitation of the results and the service deployment strategy and plan.

2.1.2.1.4 The Stakeholder Manager (SM)

The SM is responsible for coordinating the participation of the end users involved in the project and for ensuring that stakeholder knowledge is gathered and considered during the project duration. Therefore, the SM advises the PC and TM in the technical development. Mr. Jordi Vendrell (PCF) is the person appointed to fulfil the SM duties:

- To lead stakeholder engagement, including the AB and partners with end user profiles, ensuring their efficient involvement;
- To ensure that the societal acceptance, human factors and ethical issues activities are considered in the system development;
- To coordinate the interests of the different end user partners, i.e. firefighting units, medical emergency services, police departments, civil protection units and control command centres;
- To be the contact person for the consortium for general stakeholder topics;
- To assist the PC in monitoring the overall project progress in terms of stakeholder requirements;
- To support the TM in performing coordination of requirements engineering with focus on the stakeholder requirements;

- To assist the PC in the organisation of the demonstrations and the cooperation with the associated end users.

2.1.3 Technical Level

2.1.3.1 The Work Package Leaders (WPL)

The WPL is responsible for the achievement of the WP-relevant objectives in the scheduled time and for keeping consistency between developments in the different tasks of the respective WP. The WPL will fulfil this duty by implementing the following tasks:

- To propose and maintain a work plan for the respective WP that includes synchronisation points between the relevant tasks and with other WPs;
- To coordinate the technical work in the respective WP according to the proposed work plan, so as to ensure the achievement of the WP objectives;
- To maintain communication among the tasks within the WP and other relevant WPs;
- To monitor the technical progress of the WP and report periodically by means of an internal report document to the PC and TM on the technical progress of the WP, raise identified issues and propose suitable solutions. The internal report document will be a draft document contributing to the technical reports to be delivered to the EC allowing the deliverables to evolve during the project and prevent partners from being overloaded by the amount of deliverables due at the end of the technical development at M38);
- To ensure quality of and consistency between deliverables of the WP and the internal report documents by implementing established quality procedures in the project;
- To organise and chair WP meetings;
- To contribute to the Periodic and Final Reports with respect to technical achievements.

2.1.3.2 The Task Leaders (TL)

The TL is responsible for the achievement of the task-relevant objectives in the scheduled time by:

- Coordinating the technical work at task level and apply the work plan;
- Raising any issues to the WPL that may put in risk the achievement of the task objectives, proposing suitable solutions;
- Reporting periodically to the WPL about the technical progress of the task;
- Coordinate the regular update of the internal report documents;
- Coordinating the documentation of task outcomes in the form of deliverables.

2.2 Communication Flows

The communication flow in HEIMDALL will be facilitated by several means, **fostering transparency in the information flow** as follows:

- E-mail distribution lists will be created for communication to the whole project team and for specific targeted recipients (e.g. work packages, administrative staff, etc.).
- MS Word and MS Power Point will be established as the text processing and presentation tools.

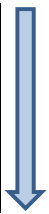
- A Teamsite based on Sharepoint will be established to share and maintain all project-relevant documents, such as internal reports and deliverables, management tools and relevant literature. This supports a transparent versioning and recovery functions.
- Face-to-face meetings will be organised regularly for several purposes: PB meetings, technical and WP-specific meetings, EB meetings and AB workshops. These meetings and workshops will be organised in a coordinated manner to minimise travel costs whenever possible.
- Regular teleconferences will be organised with all partners to track progress and solve issues in a timely manner. Additional dedicated teleconferences per WP will be organised by each WPL.
- For communication with the EC, the PC will be the interface to/from the project team. The communication channels with the EC will be the participant portal, email and face-to-face meetings, e.g. for project reviews.
- The decisions made in any meeting (including teleconferences) will be documented in the form of Minutes of Meeting (MoM) and stored in the Teamsite in a consistent structure settled by the PC to enable traceability at all times.

2.2.1 Decision making and conflict resolution

The **decision making process** in HEIMDALL follows the policy “*the lowest adequate level decides*” (technical, executive and strategic), in accordance with the policies (strategic guidance) established by the Project Board. Under this principle, the established decision making and conflict resolution escalation model is shown in Table 2-1.

Table 2-1: Decision making and conflict resolution escalation model

Management Level	Bodies	Issue Concerned				Escalation Level
		Technical	Financial	Strategic	IPR	
Technical	WPL	Mediation	N/A		1st Stage	
	PC	Mediation				
Executive	PC + MB + WPL	Mediation / Vote		Mediation	Mediation / Vote (depending on importance)	2nd Stage
	PB	Vote (if required)		Vote	Vote (if required)	3rd Stage
Strategic	EC	Consultation				



Technical decisions that affect a single WP will be made normally at the respective WP level in consensus between the WPL and the involved partners. However, prior to making a decision, the decision options will be presented by the WPL to the Management Board to assess potential impact into other WPs and the business aspects. In case the impact to other WPs and business aspects is considered to be non-negligible, the decision making process is escalated to the MB and involving all WPLs to minimise risks. Decisions are made on the basis of technical aspects, effort and risk to accomplish the project objectives. In case that consensus is not achieved voting and where necessary escalation to the Project Board will be implemented.

Project decisions, i.e. decisions with regard to issues of strategic importance (including financial, strategic and Intellectual Property Rights) that affect the overall work plan, resources or integrity of the project and the project consortium or unsolved conflicts are duty of the Project Board. The PC is responsible for presenting solution options that shall be considered by the PB. The PB will decide on the basis of consensus or voting where consensus cannot be achieved. In case of voting, a simple majority must be achieved to make a decision.

3 Project Tools

3.1 Project Teamsite

The project teamsite is hosted in the following address:

<https://teamsites-extranet.dlr.de/kn/HEIMDALL/>

It is a web Teamsite based on Microsoft Sharepoint that has been set up for enabling communication and documents management and exchange within the HEIMDALL team.

3.2 Project Website

The project will devise a dedicated website to publish project updates, such as project status, project news or project submitted deliverables. The design and configuration of the project website will be described in detail in D1.2.

3.3 Project Mailing Lists

The following mailing lists are created for email traffic within the project:

- heimdall-all@dlr.de: for email exchange involving the whole HEIMDALL team.
- heimdall-admin@dlr.de: for email exchange involving administrative, legal and financial information.
- heimdall-wp2@dlr.de: for email exchange involving technical discussion within WP2.
- heimdall-wp3@dlr.de: for email exchange involving technical discussion within WP3.
- heimdall-wp4@dlr.de: for email exchange involving technical discussion within WP4.
- heimdall-wp5@dlr.de: for email exchange involving technical discussion within WP5.
- heimdall-wp6@dlr.de: for email exchange involving technical discussion within WP6.
- heimdall-wp7@dlr.de: for email exchange involving technical discussion within WP7.

It shall be noted that, for technical discussions that are only relevant to the participants of a given WP, the subject will be preceded by the following heading:

[HEIMDALL; WP X] where X represents the WP number

For technical discussions that are only relevant to the participants of a single Task, the email subject will be preceded by the following heading:

[HEIMDALL; Task X.Y] where X.Y represents the Task number.

The PC and the WP/Task leader of the relevant WPs/Tasks shall always be included in the list of recipients.

In order to manage the participants included in each list, an MS Excel table has been provided in the project team site.

The language to be used in any email exchange is English.

3.4 Teleconference Tools

For the support of teleconferences, Adobe Acrobat Connect Pro will be used. Additionally, Adobe – Acrobat Connect Pro is applied for sharing documents during teleconferences. In particular, a conference room has been set for the HEIMDALL teleconferences, accessible through the following link:

<https://webconf.vc.dfn.de/heimdall/>

Participants shall access the meeting room as guests, giving their name. In order to avoid confusion, the guest shall give their first name, surname and organisation when the system asks for it.

Teleconference invitations (to be distributed via email) must always be completed with the access information.

3.5 Management and Planning Tools

The management and planning tools are tools tailored to the project needs to ease the planning and tracking of resources, activities and risks during the project. The project manager manages all these tools. Additionally, the project manager will request the project partners to provide inputs to those tools when necessary. The specific management of each tool is specified below.

3.5.1 Risk Register

The risk register is an MS Excel based tool that will be applied for implementing risk management, according to the roles and procedures specified in section 5. A screenshot of the risk register is provided in Figure 3-1.

The risk register is available in the teamsite under the following path:

Working Space > WP 1 > Task 1.1 > HEIMDALL_Risk_Register.

The rules to edit the risk register are specified in 5.4. The project manager is the only project participant allowed to edit the risk register; however, any project participant shall identify risks and communicate them to the project manager at any time

HEIMDALL RISK REGISTER									
Managed by: Javier Mulero (DLR)				Last Update: 27/06/2017					
Risk ID	WP / SWP	Risk Description	Probability	Impact	Mitigation Measure	Risk Owner	Status	Impact (kE)	Notes
1									
2									
3									
4									
5									
6									
7									
8									
9									

Probability → Likelihood that the risk occurs	Low	Medium	High	
Impact → Time & cost impact on the project if the risk occurs	Low	Medium	High	
Status → Status of the considered risk	Idle	Open	Mitigating	Closed

Figure 3-1: Screenshot of the HEIMDALL Risk Register.

- New actions are inserted (if any new action has been identified), assigning an AI number, a responsible partner (or several responsible partners, if it is a shared action), the type of action (which identifies the type of activity), the WP (and Task if applicable) in which the action should be solved, a description, a deadline and a status (Open). The “Comment” field can be applied to explain details related to the action when applicable.
- If prior or during the AILog revision the responsible for a specific action reports satisfactorily about its completion, the action status is set as “Done” and the date of the meeting is inserted in the “Date of closing” field. The action that justifies the status change is clarified in the “Comment” field.
- The status of an action that is under the responsibility of a partner not present in the meeting must not be updated in that meeting.
- When relevant, any change of the status field in the AILog has to be completed with an explanation of the work carried out that justifies the status change in the “Comment” field.
- After the revision of all “Open” and “Ongoing” actions, the field “Last Revision” is updated with the date of the meeting and the AILog is stored in the Teamsite, overwriting the previous version.
- Closed actions must not be deleted from the AILog after their completion.
- The responsible partner (or partners) of an AI must be a project partner, subcontractor, project officer or combinations of them (for shared actions).
- The possible types of actions are the following:
 - MGT: management actions
 - TECH: actions related to the RTD work in the project
 - USR: actions related to the End Users in the Consortium
 - OTH: actions not related to management or RTD developments
- The possible values of the field “Status” are:
 - Open: the action was identified, but not yet addressed.
 - Ongoing: the action has been already addressed but not yet sufficiently to close the action.
 - Closed: the action has been addressed successfully and is considered as closed.
 - Outdated: the issue that created the action is not anymore relevant and therefore no further work will be devoted to close the action.

Last Revision: 28/06/2017											
AI	Responsible Company(ies)	Type	WP	T	Description	Deadline	Date of closing	Status	Comment		
AI - 1	All partners	MGT	1	1	To provide the Financial ID form for each partner.	22/05/2017		Ongoing			
AI - 7	DLR-KN and PCF	TECH	7	1	To agree on a way to perform tracking of dissemination activities and automatically transfer it to the reporting in the Participant Portal.	12/5/17		Open			
AI - 8	All partners	TECH	7	1	To provide proposals for the project logo.	9/6/17	28/06/2017	Closed	Deadline has been extended.		
AI - 9	All partners	TECH	7	1	To provide the logos of their organisation for dissemination purposes.	25/05/2017		Ongoing			
AI - 11	DLR-KN	TECH	2	1	To coordinate together with the WP leaders a calendar for the provision of draft versions of the deliverables.	31/05/2017		Open			
AI - 12	SPH	TECH	2	5	To define the physical implementation architecture for the system.	30/09/2017		Open	The idea would be to identify as soon as possible the IT constraints which may appear for the interconnection of the different modules.		
AI - 13	DLR-KN	TECH	2	1	To generate a Glossary in the team site to include all relevant project definitions.	30/05/2017		Open			
AI - 14	DLR-KN	TECH	2	1	To generate a first version of a time line describin what are the case studies, scenarios, use cases...	30/05/2017		Open			
AI - 16	SPH and CIMA	TECH	2	1	To prepare the PHAROS and RASOR platform so that they can be presented during the next Progress Meeting.	30/06/2017		Ongoing	The presentation should provide guidelines about how the integration between the two platforms will be done and how the system can build upon them.		
AI - 18	SPH	TECH	5	4	To generate a list of the different external systems and data providers which shall be integrated within HEIMDALL so that this information is ready by the beginning of the task in M6.	31/10/2017		Open	The list of external systems shall consider also Copernicus services.		
AI - 19	CIMA	TECH	5	5	To provide TSYL with 5 or 6 different approaches about how to provide the modelling/simulations for floods and landslides.	30/06/2017		Open			
AI - 29	DLR-DFD	TECH	6	5	To provide PCF with a first set of properties to be used for defining scenarios.	31/05/2017	20/06/2017	Closed			
AI - 33	All partners	MGT	1	1	To provide their availability for PM2.	16/06/2017	20/06/2017	Closed			

Figure 3-3: Screenshot of AllLog

3.5.4 Resource Usage Tracker

The resource usage tracker is an MS Excel-based tool to track the resource usage in the project in a quarterly manner. This tool contains a number of interconnected spreadsheets as follows:

- **Description:** it provides a functionality description of the rest of spreadsheets, including editing writes and change propagation, i.e. it is specified which other spreadsheets are affected by editing changes in each spreadsheet.
- **Timeplan:** it provides an overview of the project plan related to project months, natural months, project years and natural years up to Task level.
- **PM_Overview:** it provides an overview of the planned effort (in terms of Person Months (PMs)) per partner and task, at total project, WP and Task levels.
- **DLR:** it provides for each project quarter the planned effort share for each Task and WP for the partner DLR and empty cells where the partner DLR will insert its actually spent number of PMs per quarter. The spreadsheet includes an automatic calculation of cumulative planned vs. actually spent effort for each project quarter and generates automatically figures that show how the actually spent effort curve per quarter matches the planned effort curve per quarter.
- **Other partners:** these spreadsheets have the same functionality as 'DLR' spreadsheet, but for each project partner.
- **Total_Effort_per_WP:** this spreadsheet shows the planned effort per quarter and WP and Task and calculates automatically from the partner-dedicated sheets, the cumulative effort spent by the team up to each quarter in each WP and Task. Additionally, it automatically generates comparative curves between planned vs. actually spent effort per WP in each project quarter.
- **Total_Effort_Overview:** this spreadsheet calculates automatically, from the partner-dedicated sheets, the planned vs. actually spent effort in each quarter by each partner in each WP and Task.
- **Total_Direct_Other_Overview:** this spreadsheet provides the planned budget for travel, equipment, consumables, generation of CFS and for ethical issues per partner and has empty cells where each partner shall insert the cumulative actual costs already achieved in the current quarter.

15 days before the due date of the next quarterly management report (QMR), the PC will enable the tool to allow partners inserting the actually spent effort data corresponding to that quarter. The tool will be closed 10 days after its opening in order to process the acquired data timely to allow submission of the respective QMR. When the tool has been enabled, each partner must access its dedicated spreadsheet and complete the green-marked cells with the actually spent effort, travel costs, equipment, consumables and subcontracting in the relevant quarter.

It shall be noted that all spreadsheets are protected against changes. In each quarter, the relevant cells are set free for editing by each partner. This means, DLR will get a password to edit the green-marked cells in DLRs spreadsheet. Any other cell in that spreadsheet or any other spreadsheets are protected and cannot be edited. The same way, each partner will get a password to edit the green-marked cells in its own dedicated spreadsheet. This security mechanism is only meant to avoid that any partner edits the wrong cell by mistake.

The Resource Usage Tracker can be downloaded from the Teamsite under the following path:

Working Space > WP 1 > Task 1.2 > HEIMDALL_BudgetTracking

3.5.5 Dissemination and Standardisation Planning Tool

The dissemination planning tool is an MS Excel document intended to plan and track the project's participation in upcoming dissemination activities, such as conferences, scientific publications, end user oriented events or events targeted to industrial partners, to name a few. The dissemination planning tool allows all partners to introduce relevant dissemination events or publications and their classification according to several criteria. Based on those criteria, all proposals are classified according to their relevance and the participation is agreed or rejected in the corresponding periodic teleconferences.

All project participants are allowed to enter potential events into the tool, specifying the following information: "Activity/Action name", "Topic" (Emergency management, risk management, communications...), "Typology/Action", "Date", "Deadline", "Location", "Partner", "Website" and "Addressed Audience".

Once this information has been provided, new entries in the table will be evaluated by PCF (as Task Leader of Task 7.1) and the PC. The criteria to evaluate the proposals are: "Appropriateness", which measures if the action addresses the project scope and objectives, "Effectiveness", which evaluates if participating in the action will be effective in terms of the relevant audience reached, "Targetable", which measures the feasibility of attending the action, "Measurable", which identifies if the effect of participating in the action will be measurable and "Economical", which states if the participation in the action is affordable within the project budget. Based on these criteria, a value is given to each proposal to decide whether to participate or not. The attending partners will be coordinated by the project manager. A screenshot of the dissemination table of the planning tool is shown in Figure 3-4. A screenshot of the Evaluation Criteria is shown in Figure 3-5. The table is stored in the Teamsite under the following path:

Working Space > WP 7 > Task 7.1 > HEIMDALL_Dissemination activities repository

With regard to standardisation, the standardisation planning tool allows all project partners introducing proposals for standardisation activities and the corresponding tracking of their participation. The tool is a MS Word document with a table in which partners can introduce proposals by providing the following information for each entry: date of the event; standardisation group, location, type of contribution, (tentative) title of contributions, attending partners, status and date of the entry. New entries are evaluated by the PC and DLR-DFD, as Task 7.2 leader in the upcoming meetings/teleconferences and thereafter, participation is agreed or rejected according to its relevance. The template of the standardisation planning tool can be found in Annex A. The table is stored in the Teamsite under the following path:

Working Space > WP 7 > Task 7.2 > HEIMDALL_Standardisation.Planning

HEIMDALL

MULTI-HAZARD COOPERATIVE MANAGEMENT TOOL FOR DATA EXCHANGE, RESPONSE PLANNING AND SCENARIO BUILDING

N°	ACTIVITY / ACTION NAME	TOPIC	TYOLOGY / ACTION	DATES	DEADLINE	LOCATION	PARTNER	WEBSITE	ADDRESSED AUDIENCE
1	Aerial Firefighting Europe 2017	Networking / sharing knowledge / promotion of cooperation	Conference	October 17 - 18, 2017		Nimes, France	PCF	https://www.aerial-firefighting-europe.com	End users
2	National Cohesive Wildland Fire Management Strategy Workshop	Emergency Management	Workshops	March 26-29, 2018		Reno, Nevada	PCF		End users
3	The Fire Continuum Conference Preparing for the Future of Wildland Fire	Emergency Management	Conference	May 21-24, 2018		Missoula	PCF	http://firecontinuumconference.org	End users
4	8th International Symposium on Scale Modelling	Risk modelling/management	Congress	September 12-24		Portland, USA	PCF	http://www.me.tut.ac.jp/cece/issm8/	Scientific Community
5	UK Wildfires Conference 2017 - Wildfire resilience in a UK context	Emergency Management	Conference	November, 7-8 2017		Dorset, UK	PCF	https://www.dorsetforyou.gov.uk/uk-wildfire-conference	End users
6	World Conference on Disaster Management	Emergency Management	Conference	June, 22 2017		Toronto, Canada	PCF	https://10times.com/worldconference-disaster-management	End users
7	2017 Common Alerting Protocol (CAP) Implementation Workshop	Emergency Management	Workshops	September 20-21		Rome, Italy	DLR-DFD	http://preparecenter.org/resources/cap-workshop-2017	End users
8	ICDEM 2018 : 20th International Conference on Disaster and Emergency Management	Emergency Management	Conference	March 5-6 2018	June 20, 2017	Rome, Italy	PCF	* https://www.waset.org/conference/2018/03/rome/ICDEM	End users
9	The International Emergency and Catastrophe Management Conference & International Disaster and Risk Conferences (IDRC)	Emergency Management	Fairs	March 5-7 2018		Dubai	PCF	http://www.emergency.ae	General Public
10	International Disaster and Risk Conferences (IDRC)	Emergency Management	Conference	August 26-30		Davos, Switzerland	PCF	https://idrc.info	End users
11	European Geosciences Union General Assembly 2018	Other...	Conference	April 8-13, 2018	January 10, 2018	Vienna, Austria	DLR-DFD	http://www.egu2018.eu/	Scientific Community
12	Natural Hazards and Earth System Sciences (NHES)	Emergency Management	Journal publications				DLR-DFD	http://www.natural-hazards-and-earth-system-sciences.net/	Scientific Community
13	GI4DM - GeoInformation For Disaster Management	Emergency Management	Conference	March 14-18, 2018	November 17, 2017	Cyprus	TSYL	http://www.gi4dm2018.org/?p=home	Scientific Community
14	4th International Conference on Information and Communication Technologies for Disaster Management	Emergency Management	Conference	December 11-13, 2017	July 15, 2017	Münster, Germany	UNISTRA	http://ict-dm2017.ercis.org/	End users
15	2018 IEEE International Geoscience and Remote Sensing Symposium	Other...	Conference	July 23-27, 2018		Valencia, Spain	UNISTRA	https://www.giss-ieee.org/conferences/future-igarss/	Scientific Community

Figure 3-4: Dissemination Planning Tool

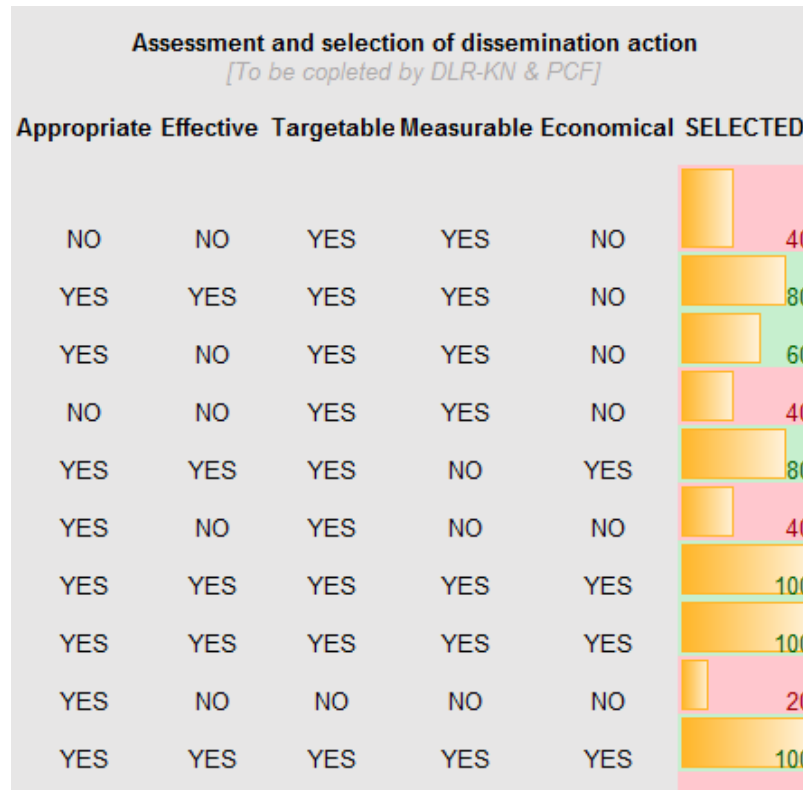


Figure 3-5: Dissemination Planning Evaluation Criteria

4 Quality Plan

The HEIMDALL quality plan provides means to achieve high quality documents both in terms of form and in scientific content. The quality plan presents quality assurance tools and methods to be followed by the project team in the development of project documentation.

4.1 Documents

4.1.1 Document Types

Several types of documents will be generated during the project lifetime with different purposes, namely technical deliverables, management reports, internal reports, presentations, minutes of meeting, meeting invitations and publications. In order to allow wide interoperability, all reports and text documents must be prepared in MS Word version 2003 and above, while presentations must be prepared in MS PowerPoint version 2003 and above. For formal submission of documents and presentations, PDF format is mandatory. Official language for all project documents is British English, unless a different language shall be used for specific reasons (for instance, for particular conferences or dissemination fora).

- Deliverables: formal technical documents, management reports and software tools or prototypes to be delivered to the EC in due time. They serve as reporting vehicle about the project progress and technical achievements towards the EC.
- Internal Reports: documents internal to the HEIMDALL team, which can be treated more informally in comparison with project deliverables. Internal reports can be used to develop contributions to project deliverables or to guide, ease and document discussions. In the case that an internal report is generated to prepare contributions to a project deliverable, the same Table of Contents as in the relevant project deliverable shall be used, whereas only the relevant parts of the document to that contribution shall be edited, and the rest can be left empty. This will contribute to ease integration of contributions in the deliverable.
- Project presentations: they shall be prepared and shared within the team in MS Power Point. In case a project presentation is shared with an external entity, this must be done in PDF format.
- Meeting support documents: these are the meeting agenda, minutes of meeting (MoM) and action item log. In particular, the meeting agenda must contain the planned schedule and discussion topics for the meeting as well as relevant information to reach the meeting place and find accommodation; the MoM document is the summary of relevant information, discussions and decisions made during a project meeting, which is completed by the presentations given during the meeting and the updated action item log after the meeting results.
- Publications: press releases, scientific papers in journals and conferences.

4.1.2 Names and Versioning Convention

In general, the documents shall be named so that the following information can be distinguished: project acronym, type of document and document identifier, editor and version. For the different types of documents, however, slight differences apply. The naming and versioning conventions detailed in Table 4-1 to Table 4-4 for each project document type apply to the project documents and must be respected by the project team. The company short names to be applied to the "EditorAcro" field of a report name are those specified in the "beneficiary short name" field of Table 4-5.

Table 4-1: Deliverables and Internal Reports naming convention.

ProjectAcro_ReportNo.EditorAcro.vX.Y.Status.PlatformExtension	
ProjectAcro	HEIMDALL
ReportNo	If the document is a deliverable: Dx.x , as identified in the deliverable list in the DoW [1]. If the document is an internal report: IRx.y , where x refers to the WP to which the IR is relevant and y is an integer number to be used as a counter (+1) starting from 1, so that consecutively generated IRs are assigned consecutive values of y.
EditorAcro	Company short name responsible for editing the deliverable.
vX.Y	version X.Y: X corresponds to the major version identifier and Y corresponds to the minor version identifier.
Status	D: draft; if this field is left empty, it shall be understood that the document is a draft version. DCT: draft in change tracking mode. DR: draft containing peer review comments. F: final (version after implementing amendments according to review comments). FCT: final in change tracking mode.
PlatformExtension	Extension of the software platform in which the document was created, for example: docx (for MS Word), xlsx (for MS Excel), pptx (for MS PowerPoint), pdf (for AdobeAcrobat), etc.

Table 4-2: Presentation naming convention.

ProjectAcro_PresentationShortName.EditorAcro.vX.Y.PlatformExtension	
ProjectAcro	HEIMDALL
PresentationShortName	'MeetingAcro_WPNo' for internal meeting presentations, indicating the short name of the relevant meeting and WP (or Task) number. For external presentations, the PresentationShortName can be freely assigned.
EditorAcro	Company short name responsible for editing the presentation.
vX.Y	version X.Y: X corresponds to the major version identifier and Y corresponds to the minor version identifier.
PlatformExtension	Extension of the software platform in which the document was created, for example: docx (for MS Word), xlsx (for MS Excel), pptx (for MS PowerPoint), pdf (for AdobeAcrobat), etc.

Table 4-3: Meeting Support Documents naming convention.

ProjectAcro_MeetingShortName_Date.DocumentType.Status.PlatformExtension	
ProjectAcro	HEIMDALL
MeetingShortName	KO for kick-off meeting PM for progress meeting, completed by the meeting number, e.g. PM1. RM for review meeting, completed by the meeting number, e.g. RM1. TM for technical meeting, completed by the meeting number, e.g. TM1. EUW for End User Workshops, completed by the meeting number, e.g. EUW1.
Date	First day of meeting: yyyyymmdd.
Document Type	MoM, Agenda
Status	D: draft; if this field is left empty, it shall be understood that the document is a draft version. DCT: draft in change tracking mode. DR: draft containing peer review comments. F: final (version after implementing amendments according to review comments). FCT: final in change tracking mode.
PlatformExtension	Extension of the software platform in which the document was created, for example: docx (for MS Word), xlsx (for MS Excel), pptx (for MS PowerPoint), pdf (for Adobe Acrobat), etc.

Table 4-4: Versioning convention.

Version Identifier	Meaning
X	Major version identifier. The value 0 indicates that the document is a draft. The values 1 and above indicate consolidated versions.
Y	Minor version identifier. The value of Y shall be increased for relevant updates to the document, for example new contributions have been integrated or the comments acquired during internal revision have been solved.

Table 4-5: Beneficiaries name

Beneficiary Number	Beneficiary Short Name	Beneficiary Complete Name
1	DLR	Deutsches Zentrum Fuer- Luft und Raumfahrt e.V.
2	SPH	Space Hellas S.A.
3	PCF	Fundació d'Ecologia del Foc i Gestió d'Incendis Pau Costa Alcubierre
4	TSYL	Tecnosylva S.L.
5	AVA	Avanti Communications Ltd.
6	EKUT	Eberhard Karls Universität Tübingen
7	UNISTRA	Université de Strasbourg
8	CTTC	Centre Tecnològic de Telecomunicacions de Catalunya
9	ICGC	Institut Cartogràfic i Geològic de Catalunya
10	CIMA	Centro Internazionale in Monitoraggio Ambientale – Fondazione CIMA
11	INT	Departament d'Interior – Generalitat de Catalunya
12	FBBR	Frederiksborg Brand og Redning
13	SFRS	Scottish Fire and Rescue Service
14	CRI	Associazione della Croce Rossa Italiana

4.1.3 Templates and Style

A series of document templates are available in the project team site under the library Templates, in order to harmonise the structure of documents and style. A description and screenshots of these templates are provided in the following subsections.

4.1.3.1 Deliverables

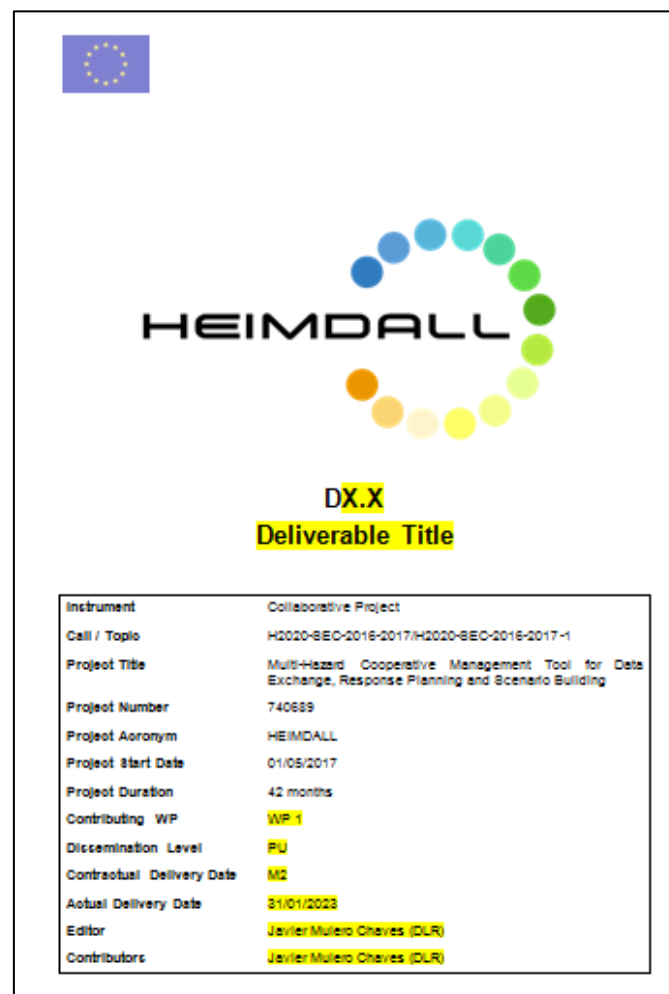
A general template for project deliverables (reports) is available in the project team site. This template presents a basic common structure to all deliverables, including the mandatory elements: the front page, document history, table of contents, list of figures, list of tables, list of acronyms, executive summary, introduction, conclusions and references. The document provides also a number of heading formats and text formats that must be respected, as well as a unified format for inserting annexes. Figure 4-1 shows the front page of the HEIMDALL deliverable template. The deliverable template can be found in the Teamsite in the following path:

Templates > HEIMDALL_D1.1.Partner.v0.1.Status

Additionally, the template provides active fields and a number of indications to the contributors and editors:

- Active fields:
 - Deliverable No: it must be edited in the front page body; it will be automatically updated in the header.

- Actual delivery date: it must be edited in the front page body; it will appear updated automatically in the footer of all pages in the deliverable (except the front page).
 - Table of Contents: it is generated automatically by using the heading formats provided in the document when creating sections and subsections. The Table of Contents must be however updated before saving.
 - List of Figures: it is generated automatically by using the caption formats for figures provided in the document when creating new figures. The List of Figures must be however updated before saving. Referencing of figures must be done using the cross-reference tool of MS Word.
 - List of Tables: it is generated automatically by using the caption formats for figures provided in the document when creating new figures. The List of Figures must be however updated before saving. Referencing of tables must be done using the cross-reference tool of MS Word.
 - List of References: references shall be inserted in this list according to the IEEE conventions in referencing. When a reference is cited in the document body, the cross-reference tool of MS Word must be used.
- Description of expected content in relevant mandatory sections, for example the Executive Summary, the Introduction and the Conclusions.
 - Guidance for the insertion of tables and figures, the inclusion of captions and format of references; in particular, IEEE conventions are applied for referencing and the cross-reference tool of MS Word.



DX.X
Deliverable Title

Instrument	Collaborative Project
Call / Topic	H2020-BEC-2016-2017/H2020-BEC-2016-2017-1
Project Title	Multi-Hazard Cooperative Management Tool for Data Exchange, Response Planning and Scenario Building
Project Number	740689
Project Acronym	HEIMDALL
Project Start Date	01/05/2017
Project Duration	42 months
Contributing WP	WP 1
Dissemination Level	PU
Contractual Delivery Date	M2
Actual Delivery Date	31/01/2023
Editor	Javier Mulero Chaves (DLR)
Contributors	Javier Mulero Chaves (DLR)

Figure 4-1: Front page of the HEIMDALL deliverable template

4.1.3.2 Internal Reports

Since internal reports are ad-hoc documents, there is no existing consolidated list of IRs in the project plan. However, an empty list of IRs has been generated and made available in the team site to register every new IR that is made public within the project team. This list will also help avoiding ambiguities in the assignment of an IR number. The list is available in the following path:

Working Space > WP 1 > Task 1.1 > HEIMDALL_InternalReportList

A general template for project internal reports, which is a simplified version of the deliverables template, is available in the project team site. This template presents a basic common structure to all IRs, including the mandatory elements: the front page, document history, table of contents, list of figures, list of tables, list of acronyms, scope of the document and references (the latter, if applicable). The document provides also a number of heading formats and text formats that must be respected, as well as a unified format for inserting annexes. Figure 4-2 shows the front page of the HEIMDALL IR template. It shall be noted that, if the IR is a contribution to a deliverable, a field in the front page must indicate which is the relevant deliverable; otherwise, that field shall be filled with 'N/A'. Additionally, the template provides a number of indications to the contributors and editors:

- Active fields:
 - IR No: it must be edited in the front page body; it will be automatically updated in the header.
 - Table of Contents: same as for the deliverables template.
 - List of Figures: same as for the deliverables template.
 - List of Tables: same as for the deliverables template.
 - List of References: same as for the deliverables template.
- Guidance for the content of section “Scope of the Document”
- Guidance for the insertion of tables and figures, the inclusion of captions and format of references; as in the deliverables template.

The template for the internal reports is available under the following path:

Templates > HEIMDALL_IRX.Y.Partner.v0.1.Status

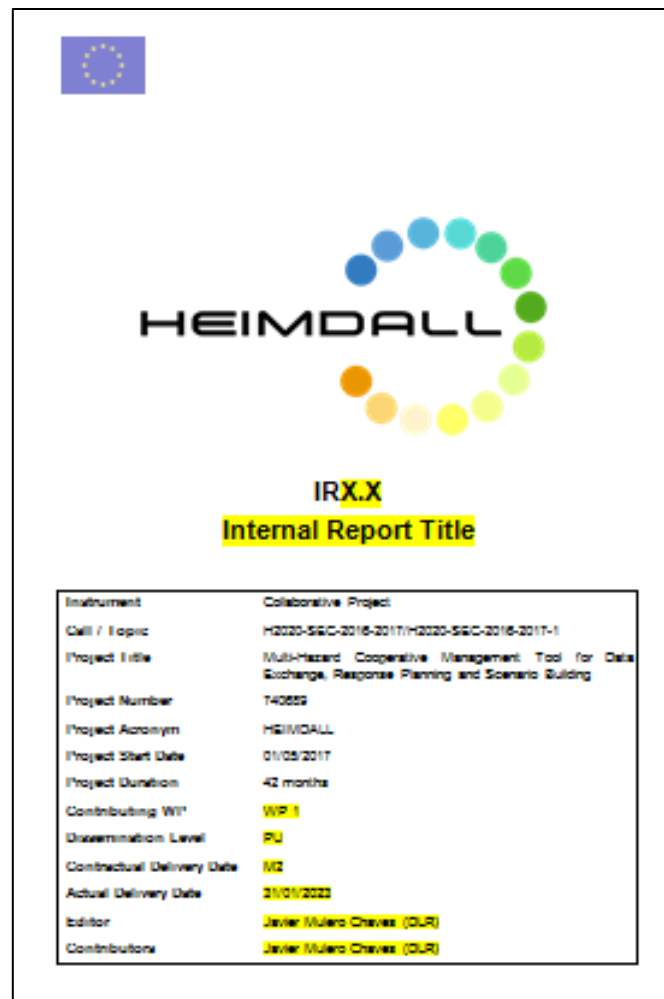


Figure 4-2: Front page of the HEIMDALL IR template

4.1.3.3 Presentations

A template for the HEIMDALL presentations based on MS PowerPoint has been created and made available in the team site under the following path:

Templates > HEIMDALL_Presentations.Partner.v0.1

All project presentations to any internal or external entity to the project shall apply this template, respecting margins and style. The font size of the presentation body can be adapted to the available space, but must be larger than 12 points. Figure 4-3 shows the front page of the HEIMDALL presentation template.



Figure 4-3: Front page of the HEIMDALL presentation template

4.1.3.4 Meeting Agenda, Minutes of Meeting and Action Item Log

In preparation of project meetings, an agenda must be made available in duly time with the invitation to the meeting. A template for the meeting agenda is provided in the Teamsite under the following path:

Templates > HEIMDALL_Agenda.MeetingName.v0.0

The template to be used for defining the agenda for the different meetings can be found in Annex A.

The Minutes of Meeting (MoM) is the written record of the meeting reflecting relevant information, such as location, start and end time and attendees, and summary of major discussions as well as decisions made. The template for the MoM is provided in the Teamsite under the following path:

Templates > HEIMDALL_MoM_MeetingName

The template to be used for gathering the MoM for the different meetings can be found in Annex A.

4.1.3.5 Publications

The style of publications is typically determined by the publisher or conference organiser. However, all HEIMDALL publications must contain the EC flag (if the template allows for that) and the following text referring to H2020 in the acknowledgments section of the paper:

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 740689.

4.2 Reporting

4.2.1 Editing Deliverables

This section refers to all deliverables other than management reports. The template for deliverables presented in section 4.1.3.1 must be used. Each deliverable has assigned an editor. The editor is responsible for assigning responsibilities in the completion of the deliverable, collecting contributions and integrating them. Typically, the editor of the deliverable is the leader of the contributing Task. For deliverables that rely on contributions from more than one Task, an editor is nominated in **Error! Reference source not found.**

Table 4-6: List of Deliverables

Deliv. No	Deliverable name	WP	Lead (Short name)	Type ¹	Diss. level ²	Delivery date (in months)
D1.1	Project Handbook	1	DLR-KN	R	PU	M2
D1.2	Project Website and Collaborative Platform Description	1	DLR-KN	R	PU	M2
D1.3- D1.6	Quarterly Progress Report – Issue 1 to 4	1	DLR-KN	R	PU	M13, M25, M37, M42
D2.1- D2.5	HEIMDALL System Engineering Report – Issue 1 to 5	2	DLR-KN	R	PU	M14, M20, M27, M34, M40
D2.6- D2.10	HEIMDALL Requirements Report – Issue 1 to 5	2	DLR-KN	R	PU	M6, M22, M28, M35, M42
D2.11	Service Concept Specification	2	DLR-KN	R	PU	M10
D2.12	HEIMDALL System Architecture	2	DLR-KN	R	PU	M10
D2.13	HEIMDALL Integrated System	2	SPH	DEM	PU	M38
D2.14	HEIMDALL Integration and Verification Report	2	SPH	R	PU	M38
D3.1- D3.3	Case studies – Issues 1 to 3	3	PCF	R	PU	M8, M16, M26
D3.4- D3.8	HEIMDALL Demonstrations – Issue 1 to 3	3	PCF	R	PU	M7, M20, M34, M42
D3.9	Stakeholders Webinars	3	PCF	R	PU	M42

¹ R: Document, report (excluding the periodic and final reports)

DEM: Demonstrator, pilot, prototype, plan designs

DEC: Websites, patents filing, press & media actions, videos, etc.

OTHER: Software, technical diagram, etc.

² PU: Public, fully open, e.g. web

CO: Confidential, restricted under conditions set out in Model Grant Agreement

CI: Classified, information as referred to in Commission Decision 2001/844/EC.

D3.10- D3.12	Analysis of Human Factor Involvement in the use of Autonomous Systems in DRR and Response and Specifications for User Requirements – Issues 1 to 3	3	EKUT	R	PU	M8, M20, M42
D3.13- D3.16	Analysis of Societal Acceptance and Ethical Acceptability – Issues 1 to 3	3	EKUT	R	PU	M7, M19, M42
D4.1- D4.2	Service Platform Design and Specification – Draft and Final	4	SPH	R	PU	M18, M38
D4.3	Service Platform for Multi-Hazard Management	4	SPH	DEM	PU	M38
D4.4- D4.5	Users and Roles Management Specifications – Draft and Final	4	SPH	R	PU	M20, M38
D4.6	Users and Roles Management Services	4	SPH	DEM	PU	M38
D4.7- D4.8	User Interface Design – Draft and Final	4	AVA	R	PU	M18, M38
D4.9- D4.10	User Interfaces – Draft and Final	4	AVA	DEM	PU	M18, M38
D4.11- D4.12	User Guide – Draft and Final	4	AVA	R	PU	M20, M38
D4.13- D4.14	Communications and Information Sharing Specifications – Draft and Final	4	DLR-KN	R	PU	M18, M38
D4.15	Communications and Information Sharing	4	DLR-KN	DEM	PU	M38
D4.16- D4.17	Communications to Remote Areas – Design and Specifications – Draft and Final	4	AVA	R	PU	M22, M38
D4.18	Communications to Remote Areas	4	AVA	DEM	PU	M38
D5.1- D5.2	EO Tools and Products – Specifications – Draft and Final	5	DLR-DFD	R	PU	M18, M38
D5.3	EO Tools and Products	5	DLR-DFD	DEM	PU	M38
D5.4- D5.5	In-Situ Sensors – Specifications – Draft and Final	5	DLR-KN	R	PU	M18, M38
D5.6	In-Situ Sensors	5	DLR-KN	DEM	PU	M38
D5.7	First Responders Data Module Design	5	AVA	R	PU	M38
D5.8	Smartphone/Tablet Device Application for First Responders	5	AVA	DEM	PU	M38
D5.9- D5.10	Interfaces for External and Existing Systems – Specifications – Draft and Final	5	SPH	R	PU	M22, M38
D5.11	Interfaces for External and Existing	5	SPH	DEM	PU	M38

	Systems					
D5.12- D5.13	Modelling and Simulation Services – Specifications – Draft and Final	5	TSYL	R	PU	M22, M38
D5.14	Modelling and Simulation Services	5	TSYL	DEM	PU	M38
D6.1	Concept Design and Technical Specification for Risk Analysis Methods and Components	6	DLR-DFD	R	PU	M18
D6.2- D6.3	Validated Risk Analysis and Emergency Response Methods which have been Coordinated with Product Development Specifications – Draft and Final	6	DLR-DFD	R	PU	M24, M38
D6.4- D6.5	Concept on Hazard, Scale and User-Specific Risk Assessment Information, Products and Service Workflows Specifications – Draft and Final	6	TSYL	R	PU	M18, M38
D6.6	Validated Risk Assessment Products, Information and Service Workflows	6	TSYL	DEM	PU	M38
D6.7- D6.8	Information Fusion, Situation Assessment and sCOP Specification and Implementation Report – Draft and Final	6	DLR-DFD	R	PU	M18, M38
D6.9	Situation Assessment Services	6	DLR-DFD	DEM	PU	M38
D6.10- D6.11	Decision Support Specification and Implementation Report – Draft and Final	6	DLR-DFD	R	PU	M18, M38
D6.12	Situation Assessment and Decision Support Configuration	6	DLR-DFD	R	PU	M38
D6.13	Decision Support Services	6	DLR-DFD	DEM	PU	M38
D6.14- D6.15	Scenario Specification, Scenario Management Specification and Scenario and Situation Metrics – Draft and Final	6	DLR-DFD	R	PU	M12, M18
D6.16	Scenario Management Implementation Report	6	CIMA	R	PU	M38
D6.17	Scenario Management Services	6	CIMA	DEM	PU	M38
D7.1- D7.2	Dissemination Activities Report – Issue 1 to 2	7	PCF	R	PU	M21, M42
D7.3	HEIMDALL User's Manual for End-Users	7	PCF	R	PU	M42
D7.4- D7.5	Standardisation Activities Report – Issue 1 to 2	7	DLR-DFD	R	PU	M21, M42
D7.6- D7.7	Business Model Spreadsheet, Business Plan and Sustainability	7	AVA	R	PU	M30, M42

Report – Issue 1 to 2					
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The Editor shall generate and upload to the team site a first internal version of the deliverable, including a draft executive summary of expected content and a tentative table of contents (ToC) in a timely manner (not later than 1/3 of the duration of the contributing activity).

Contributions to the deliverable by each contributing partner can be delivered (through the team site) in form of an internal report or by directly editing the deliverable. This shall be agreed with the editor in each case, whereas working with internal reports is recommended. In the case that the contributions are delivered in the form of an internal report, the editor shall integrate the contribution into the deliverable.

The following rules shall be respected:

- The draft ToC is the starting point for all deliverables. The draft ToC shall be uploaded by the editor to the team site and stored in the folder of the corresponding WP. If the editor considers it relevant, a dedicated folder for that deliverable can be created under the WP folder.
- For deliverables where several issues of the same document shall be submitted at different points in time, a single working document will be kept in the team site. The version to be submitted will be the current status of the deliverable at the corresponding point of submission, after having passed the quality assurance process.
- When a contributor or the editor is going to update a deliverable two procedures can be carried out:
- The first procedure is as follows:
 - First, the document must be checked out in the team site;
 - The document is edited, applying all changes in change tracking mode;
 - The document is uploaded to the team site;
 - The document is checked in again in the team site.
- In the period of time in which a document is checked out by any partner, any other partner must not edit the document. The checking in/out functionality is there to reserve the document for changes, avoiding integration problems.
- A document shall remain checked out for a maximum of 4 hours to allow the rest of partners to provide contributions. This is easily respected by checking out a document only when a contribution to be integrated is ready. For this reason, it is recommended that each contributor keeps a local version including own contributions only.
- Every update in a deliverable must be recorded in the history of the document, even if those changes do not imply a version change; in this case, the changes shall be documented in the cell of the document history corresponding to the current version.
- The second procedure is as follows:
 - The Teamsite allows the modification of a document by several partners simultaneously.
 - The sections being modified by the different partners are checked out without necessity of checking out the complete document.
 - The checked out sections appear in the display of all the partners modifying the document.

- Only the editor is allowed to change the version numbering of the deliverable and the history of the document.

When the consolidated version of a deliverable, ready to be submitted to the EC, is ready, the PC assigns the version v1.0.F to the document, converts it to PDF and submits the document to the EC.

4.2.2 Dissemination Level of Deliverables

The dissemination of foreground of the project is limited. Therefore, the classification in Table 4-7 will be considered:

Table 4-7: Dissemination levels.

Short Name	Definition
PU	Public
PP	Restricted to other programme participants (including the Commission Services)
RE	Restricted to a group specified by the consortium (including the Commission Services).
CO	Confidential, only for members of the consortium (including the Commission Services)

In case that only part of the content of a deliverable yields any form of restricted dissemination, a public version of the deliverable can be setup, omitting the restricted parts.

The dissemination level of each deliverable will be assigned according to its IPR issues according to the following procedure:

1. Each partner willing to protect foreground due to IPR issues, shall inform the Project Board (PB).
2. The Project Board will assign the most suitable dissemination level between PU, PP, RE and CO, according to the requesting partner requirements, in the next Project Board meeting, previous to the deliverable submission.

4.2.3 Quarterly Management Reports

The quarterly management reports (QMRs) report about the progress made in periods of three months. For this type of deliverable, an extended template has been created, with a concrete table of contents, partly filled tables, expected figures and concrete indications on how to complete the document in each project quarter.

Additionally to the mandatory sections in all deliverables, see section 4.1.3.1, the developed QMR template provides the following contents:

- 1 *Introduction*
 - 1.1 *Purpose of this document*
 - 1.2 *HEIMDALL Factsheet*
- 2 *Main Progress and Achievements in the Reported Period*
 - 2.1 *WP 1*
 - 2.2 *WP 2*
 - 2.3 *WP 3*
 - 2.4 *WP 4*
 - 2.5 *WP 5*

- 2.6 *WP 6*
- 2.7 *WP 7*
- 2.8 *WP 8*
- 3 *Project Status*
- 3.1 *Status of Project Deliverables*
- 3.2 *Project Milestones*
- 3.3 *Planned vs. Actual Effort*
- 3.4 *Travel Costs*
- 3.5 *Plan Deviations*
- 4 *Risk Management*

The PC will collect inputs from WP leaders, Task leaders and partners to complete the QMR in due time. In particular, WP leaders must provide reminders of the overall objectives in each WP, Task leaders must provide an overview of the activities carried out in the reported quarter within the specific Tasks and each partner must provide a statement on the spent effort in the reported quarter for each Task, using the resource usage tracker presented in section 3.5.4, as well as travel expenditures. With the collected inputs, the PC completes the QMR.

4.2.4 Progress Reports

The content of the Intermediate Progress Reports is the same as the content of the QMRs. The main difference between these two types of report is basically, the reporting period. While QMRs focus on given periods of three months, Intermediate Progress Reports report about the progress made in a cumulative way. There are four Progress Reports to be submitted to the EC in M13, M25, M37 and M42.

4.2.5 Periodic Management Reports

The project will deliver four periodic management reports during the project, one per project reporting period. The first periodic management report is due on M14, while the second one is due on M26, the third in M38 and the last one in M44. The ToC for these reports will be guided by the EC. However, the following content is expected:

- A publishable summary with a reminder of the project objectives for the period and a summary of the achievements
- A description of the project objectives
- A description of scientific progress and achievements (per WP)
- Status of deliverables and milestones
- Project management issues
- Justification of used resources
- Financial statements
- Financial certificates

For the completion of these management reports, the PC will request inputs from the WP leaders regarding the progress of each WP. Additionally, all partners shall provide justifications for major deviations in their resource plan, the financial statements and, for those who are requested to, the financial certificates.

4.2.6 Submission to the EC and Publication to Reviewers

The PC is the only responsible for submitting deliverables to the EC. The submission to the EC will be done through the Participant Portal.

The project deliverables must be made also available to project Reviewers to allow them reading the documents previously to the respective Review Meeting. For that purpose, all public deliverables will be made available in the project website. Confidential or Restricted deliverables will be provided to the Reviewer by the Project Officer.

4.3 Scientific Quality Assurance Methodology

The following measures are implemented in the project for the purpose of scientific quality assurance of the project results and documentation:

- Given the wide range of scientific topics in the project, and in each WP, three levels of scientific guidance are deployed in the project: overall technical coordination (by the TM), WP coordination (by the WPL) and Task coordination (by the TL). Given that each WP contains tasks dedicated to very different scientific topics, the Task guidance is implemented by expert scientists in the specific scientific topic of the Task. The WPLs are responsible for the achievement of the overall WP objectives, enabling that the pieces of the puzzle provided by the different Tasks match and are coherent with each other. The PC and the TM will be responsible for the alignment of different WPs inputs and outputs and coherence amongst all WPs.
- The technical guidance in the project is driven by the TM, experts in the different topics, experienced researchers with a strong scientific track and leading. Furthermore, discussions with all experts in the team, with different backgrounds and perspectives (for example researchers vs. end users in the project team) will support the scientific work.
- Regular teleconferences and progress meetings will allow the close tracking of activities, identification of issues and will generate constructive discussions to enrich the technical content of the project.
- Project deliverables are edited by one responsible person, typically the Task leader. The edition task will allow the Task leader to identify gaps, overlaps, incoherencies, etc. in deliverables already at early stages.
- Each WPL shall review the deliverables generated in the WP under his/her lead, except those deliverables that are edited by the WPL (company). In such case, the peer review shall be assigned (agreed by the PB members) to another member during the PB meeting.
- Each deliverable shall be reviewed in two phases by the corresponding WPL (or an assigned one, see previous bullet): draft document (2 months before submission) and consolidated document (3 weeks before submission). The splitting in two phases will avoid major changes in dates close to the submission deadline. Comments shall be provided using the comments tool of MS Word.
- A Quality Assurance review will be performed 2 weeks before the submission. The Quality Assurance reviewer will be proposed and agreed by the affected partners in each Progress Meeting for the deliverables due in the next 6 months. Comments shall be provided using the comments tool of MS Word.

The deliverables shall be reviewed within a period of 5 working days and made available to the editor. The editor and contributors to the deliverable shall provide amendments according to the received comments in change tracking mode. The editor shall make available two versions of the deliverable: one in change tracking mode (adding the extension 'CT' to the document name as stated in section 4.1.2), and another "clean" version with accepted changes, ready for submission.

4.4 Meeting Plan

4.4.1 Project Progress Meeting Plan

Project meetings can be carried out in the form of a physical meeting or as a teleconference. Physical meetings devoted to make or track progress in RTD activities of the project are called Technical Meetings; these can be devoted to specific WPs, groups of WPs or even Tasks; Technical Meetings can be organised in an on-demand basis; however, regular teleconferences are the major vehicle for technical discussions during the project. In particular, teleconferences are organised every two weeks to have a close tracking of activities and active discussion among partners.

The project plan includes a number of Progress Meetings; these are physical meetings which are planned to include WP meetings, PB meetings and plenum meetings to tackle issues that affect the overall progress of the project. Progress Meetings will be held tentatively every three months during the project. The exact starting date and duration of each meeting will be decided during the previous meeting. It is expected that, depending on the content to be discussed and potential events with the Advisory Board, progress meetings will last for 2 days to 3 days. Table 4-8 shows the already planned meetings at the time of submitting this document.

Table 4-8: Already planned meetings

Meeting ID	Tentative Date	Tentative Location
KO	03-04/05/2017	Oberpfaffenhofen (DLR premises)
PM1 and EUW1	05-06/07/2017	Barcelona (CTTC premises)
PM2	17-18/10/2017	Athens (SPH premises)

4.4.2 Convening a Meeting

Meetings of each project body shall be convened by the relevant body leader. However, if meetings are held together in the same physical meeting, the PC is responsible for convening them.

The following conventions apply:

- The PB shall meet at least twice a year.
- The PB Chair shall give notice of a PB meeting to all members of the PB not later than 45 calendar days before the meeting day for ordinary meetings (15 calendar days for extraordinary meetings). The respective agenda shall be available 15 calendar days before the meeting for ordinary meetings (7 calendar days for extraordinary meetings).
- Any agenda item requiring a decision by the Members of a Consortium Body must be identified as such on the agenda. Any Member of a Consortium Body may add an item to the original agenda by written notification to all of the other Members of that Consortium Body up to the minimum number of days preceding the meeting as indicated below:
 - PB meeting: 14 calendar days, 7 calendar days for an extraordinary meeting.

Technical meetings are convened in an on-demand basis by the respective WPL (or Task leader, when applicable), providing the agenda 7 calendar days before the meeting date.

4.4.3 Meeting Support Documentation

In preparation of Progress Meetings, the PC, WPLs and Task leaders will prepare presentations related to the WPs and Tasks under their lead to support the discussion. Additionally, the PC may ask (indicated in the agenda of the respective meeting) specific partners to prepare additional presentations to support the meeting discussions.

During the meeting, Minutes of Meeting will be prepared by the Chair person. The draft MoM will be distributed to the attendees of the meeting within 5 calendar days. Upon reception of the draft MoM, the attendees are requested to provide feedback in order to consolidate the MoM within 5 working days.

The presentations provided during each meeting, the agenda and the MoM will be made available in the teamsite after the meeting.

It should be noted that the MoM template shall be applied for physical meetings. The discussion during teleconferences will be captured by informal minutes in text form (for example an email) indicating (at least) the following information:

- Attendees,
- Discussion items and major conclusions,
- New AIs identified.

5 Risk Management

The project risk management methodology that will be applied during the project includes the processes concerned with conducting risk management planning, identification, analysis, responses, and monitoring and control. The objectives of project risk management are to decrease the probability and impacts of events adverse to the project.

Figure 5-1 depicts, in general terms, the overall risk management process that is followed in the HEIMDALL project. Each of the risk management functions is shown in Figure 5-1.

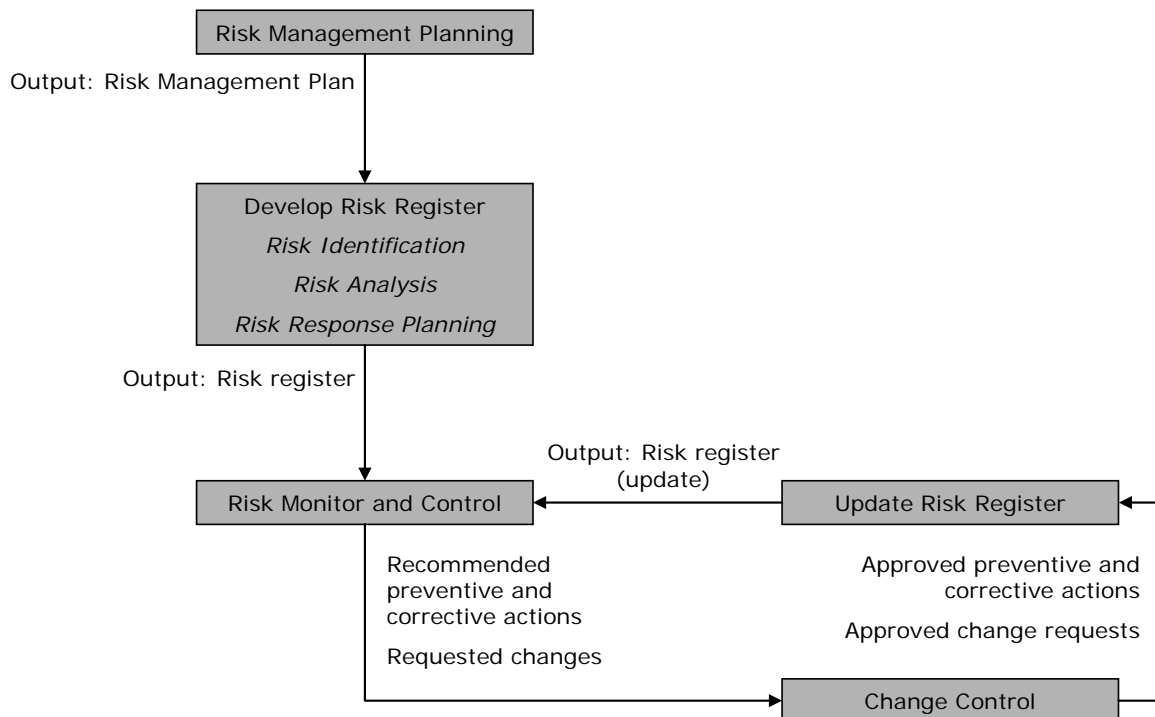


Figure 5-1: Risk Management Process

5.1 Risk Management Planning

Risk Management Planning is the process of deciding how to approach, plan, and execute the risk management activities in the HEIMDALL project. The risk register ultimately contains the outcome of all risk management processes.

5.1.1 Risk Categories

Risk categories provide a structure that ensures a comprehensive process of systematically identifying risks to a consistent level of detail. The risk categories may be revisited during the risk identification process.

The risk categories for the HEIMDALL project include:

- Technical risks
- Organisational risks
- External risks

5.1.2 Definition of the Risk Probability and Impact

The risk analysis process requires that different levels of the risk probabilities and impacts are defined. For the HEIMDALL project, the risk probabilities are categorized into four levels:

- Very Unlikely
- Unlikely
- Likely
- Very likely

Furthermore, four impact levels of a risk are defined:

- Low Impact
- Moderate Impact
- High Impact
- Unacceptable Impact

The risk impact is investigated in terms of three HEIMDALL objectives: technical quality, cost, and schedule. Table 5-1 shows the definition of impact scales on these three objectives.

Table 5-1: Risk Impact Matrix

	Low	Moderate	High	Unacceptable
Technical Quality	Minimal or no impact	Reduction of one minor functionality	Reduction of one key functionality	Most project results are effectively useless
Cost	<5% cost increase	5-10% cost increase	10-20% cost increase	>20% cost increase
Schedule	Not able to meet intermediate deadline. Deliverable or Milestone deadline not affected	Minor slip in Deliverable or Milestone deadline	Major slip in Deliverable or Milestone deadline	Cannot meet major project Milestone

5.1.3 Roles and Responsibilities

The HEIMDALL PC supported by the PB is responsible for coordinating and monitoring all risk management activities.

All individuals in the HEIMDALL project team are involved in the identification, analysis, response planning, and monitoring of HEIMDALL risks. The detailed roles and responsibilities for the different tasks are described in the following section.

5.2 Development of Risk Register

The risk register ultimately contains the outcome of all risk management processes. The risk register includes a list of identified risks together with their analysis and potential responses.

5.2.1 Risk Identification

Risk identification is the first step in the risk assessment process. Risk identification can be done by reviewing documentation, gathering information, using checklists/ questionnaires, or analysing the validity of assumptions on which the HEIMDALL project is conceived.

The risk categories defined in section 5.1.1 provide a structure to identify risks in a systematic and effective way. Risks are identified by all individuals in the HEIMDALL project team. Information is transferred to the project manager and a regular review of the risk register that includes the list of identified risks is performed during the Project Board meetings (that are typically integrated in progress meetings).

5.2.2 Risk Analysis

Risk analysis is the evaluation of the identified risks to determine the probability and impact of each identified risk and to establish a risk rating. The levels defined in Table 5-1 are used throughout the HEIMDALL project.

Risks with a high probability and/or high impact are identified as major risks that require particular attention.

A quantitative analysis should be performed for the major risks, where quantitative estimates on the probability, costs and time delays are given.

All individuals in the HEIMDALL project team shall inform the PC about any event that implies a change in the risk assessment. A regular review of the risk register that includes the likelihood and impact of identified risks will be performed during the Project Board meetings.

5.2.3 Risk Response Planning

After the project's risks have been identified and assessed, the approach to handle each significant risk must be developed. There are essentially four techniques or options for handling risks:

- Avoidance - application of tasks to avoid the risk event.
- Mitigation – application of tasks to reduce the probability and/or impact of the risk to an acceptable level.
- Transfer – Transferring the risk simply gives another party responsibility for its management; it does not eliminate it. Transferring liability for risk is most effective in dealing with financial risk exposure.
- Acceptance – If the identified risk is acceptable or no suitable response strategy has been identified, monitor and control this risk to ensure that the likelihood and impact remains on a low level.

For all identified risks, the various handling techniques should be evaluated in terms of feasibility, expected effectiveness, cost and schedule implications and the effect on the system's technical quality and performance.

The results of the evaluation and selection will be included and documented in the risk register.

This documentation includes:

- Assigned responsibilities
- Agreed-upon response strategies
- Specific actions to implement the chosen response strategy
- Budget and schedule activities required to implement the chosen responses
- Their relationship to significant project activities/milestones
- Recommended metrics for tracking the action
- Residual risks that are expected to remain after the planned responses
- Secondary risks that arise as a direct outcome of implementing the planned responses

The Project Coordinator, in close cooperation with the Project Board and the concerned WP leaders, is responsible for developing and evaluating different risk handling strategies that are best fitted to the project's circumstances. The selected strategies require approval by the Project Board before being applied.

The PC is responsible for monitoring and controlling the performance of risk-handling actions.

5.3 Risk Monitoring and Control

The project work should be continuously monitored for new and changing risks. Risk monitor and control include the following tasks:

- Risk re-assessment – Identification of new risks and reassessment of risks are often required. Risk reassessment is discussed in the HEIMDALL Project Board meetings.
- Technical performance measurement – Technical accomplishments during the project execution are compared to the planned schedule of technical achievement.

Risk monitor and control results in an updated risk register and in recommended corrective and preventive actions.

Risks are newly identified or re-assessed by all individuals in the HEIMDALL project team. Information is transferred to the PC and a regular review of the risk register that includes the list of identified risks is performed during PB meetings.

5.4 Risk Register

The risk register is maintained using an MS Excel tool available in the team site, as indicated in 3.5.1.

The PC is responsible for editing the risk register. Other project participants than the PC have read rights on the risk register.

The risk register is reviewed in every progress meeting by the PB along with the related actions in the AILog. According to the conclusions of the PB, the PC will update the status and countermeasures to each risk entry in the risk register, when applicable.

If any project member identifies a new risk at any moment in time, he/she shall inform immediately the PC. The PC will insert this new risk in the risk register, which will be revised in the next Progress Meeting. In the case that the PC identifies that this risk is highly critical and its management cannot wait until the next PM, the PC will convene an extraordinary PB meeting (possibly a teleconference) to manage the risk. The current status of the Risk Register at the time of submitting this document can be found in Annex A.

6 Conclusion

This document provided guidance to the project team on the governance structure of the HEIMDALL project and presents the project boards, project tools for communication, planning and management, it specifies the quality plan and procedures to be applied during the project, as well as risk and ethical issues management procedures.

The guidelines provided in this document shall be followed and the tools provided shall be used by the Project Consortium.

7 References

- [1] HEIMDALL Description of Work, H2020 (H2020-SEC-2016-2017/H2020-SEC-2016-2017-1) under grant agreement n° [740689].
- [2] SAFE Cluster website, available at: <http://www.safecluster.com/?lang=en> [last accessed in June 2017].
- [3] Agencia de Medio Ambiente y Agua website, available at: <https://www.agenciamedioambienteyagua.es/> (in Spanish) [last accessed in June 2017].
- [4] Conselleria de Medi Ambient, Agricultura i Pesca de les Illes Balears website, available at: <http://www.caib.es/govern/organigrama/area.do?lang=ca&coduo=138143> (in Catalan) [last accessed in June 2017].
- [5] Instituto Geológico y Minero de España website, available at: <http://www.igme.es/> (in Spanish) [last accessed in June 2017].
- [6] Departamento de Desarrollo Rural y Sostenibilidad website, available at: <http://www.aragon.es/DepartamentosOrganismosPublicos/Departamentos/DesarrolloRuralSostenibilidad> (in Spanish) [last accessed in June 2017].
- [7] Croatian Firefighting Association website, available at: <http://www.hvz.hr/en/> [last accessed in June 2017].

Annex A: HEIMDALL Templates and Risk Register

This section provides a series of templates developed within the HEIMDALL project in order to achieve the quality criteria described in the present deliverable.

Minutes of the Meeting Template**HEIMDALL****“Multi-Hazard Cooperative Management Tool
for Data Exchange, Response Planning and
Scenario Building”**

Minutes of Meeting	
Meeting Subject	
Meeting Date	
Location	
Invitation and Agenda dated	

Minutes No KO	Session Day 1	Organisation DLR	Date 03/05/17 – 04/05/17	Meeting Location Oberpfaffenhofen (Germany)
Subject HEIMDALL				Begin 03/05/17 10:05 End 03/05/17 10:05
Session Chair Javier Mulero	Telephone Nr. +498153283815	Minutes Secretary Benjamin Barth	Telephone Nr. +498153284259	Invitation and Agenda from Javier Mulero

Participants		
J. Mulero (DLR)	Miguel Mendes (TSYL)	Michele Crosetto (CTTC)
Benjamin Barth (DLR)	Joseph Muna (AVA)	Pere Buxó (ICGC)
Monika Friedemann (DLR)	Rubén González Criado (AVA)	Roberto Rudari (CIMA)
Michel Wurm (DLR)	Regina Ammicht Quinn (EKUT)	Edgar Nebot Hernandez (INT)
Georgios Gardikis (SPH)	Andreas Baur-Ahrens (EKUT)	Kim Lintrup (FBBR)
Alexandros Bartzas (SPH)	Stephanie Battiston (UNISTRA)	Bruce Farquharso (SFRS)
Jordi Vendrell (PCF)	Stephen Clandillon (UNISTRA)	Lorenzo S. Massucchielli (CRI)
Anna Fàbrega (PCF)	Oriol Monserrat (CTTC)	

Agenda Reminder
1. Welcome, agenda review and introduction to the meeting objectives 2. ...
Discussion
1. <u>Welcome, agenda review and introduction to the meeting objectives</u> ...
2. <u>abc</u> ...

Relevant documents:

- AI Log (AI_log.xlsx)
- Presentations during the meeting

Current Status of the Risk Register

HEIMDALL RISK REGISTER			
Managed by:	Javier Mulero (DLR)	Last Update:	27/06/2017

Risk ID	WP / SWP	Risk Description	Probability	Impact	Mitigation Measure	Risk Owner	Status	Impact (kE)	Notes
1	1	Lack of agreement between partners.	Low	Medium	A protocol for decision making and conflict resolution has been devised in the proposal.	All partners	Idle		
2	1; 2	A shift in the delivery of a task output induces a shift in the beginning of a depending task.	Medium	Medium	Tasks with dependencies foresee a phased delivery of outputs enabling dependent tasks to initiate their work based on preliminary versions of outputs. Following the Vee model, a time overlap between activities in different development phases is established to enable flexibility. Additionally, due to the iterative approach with different releases, previous versions can be used to overcome any existing delays.	All partners	Idle		
3	1	Withdrawal of a critical consortium partner.	Low	High	Overlapping competences at some of the partners together with the strong commitment of the HEIMDALL partners mitigate significantly this risk. Additionally, the Consortium Agreement (CA) has established a framework that discourages withdrawal.	All partners	Idle		
4	1	Lack of resources or underperformance of a partner.	Medium	High	Early detection will be established by the continuous monitoring formalised by quarterly progress reports, progress meetings and periodic teleconferences. The procedures of the PB will enable work plan adaptations to solve such issues (e.g. shift resources to other partners or outsourcing).	DLR-KN	Mitigating		

Risk ID	WP / SWP	Risk Description	Probability	Impact	Mitigation Measure	Risk Owner	Status	Impact (k€)	Notes
5	2; 3	Difficulties in requirements specification and requirements updating due to evolving user requirements.	Medium	Medium	A strong interaction between the TM and SM will be established to derive the technical requirements from the user requirements. The involvement of stakeholders in the project consortium and a close interaction with the SM will help monitoring, reviewing and validating the requirements. In addition, five workshops with the AB are planned. Requirements will be reviewed with the AB in each occasion to perform in-process validation of the project progress and review of requirements.	DLR-KN, PCF	Mitigating		
6	2; 3	Project products do not fit to all end-users' procedures due to European lack of standardized emergency management protocols.	Medium	Low	HEIMDALL will feed from end-users needs to reduce uncertainty in large disasters management, which is a global challenge. Partners with end user profiles and Stakeholders from AB will give an overall European picture of end-users procedures, and in the same way, the project will track the operability of products through a continuous dialog with them.	DLR-KN, PCF	Mitigating		
7	3; 7	International cooperation is not satisfactory due to the lack of feedback from the international end-users contacts.	Low	Medium	HEIMDALL dissemination plan includes the participation in international end-users multi-agency forums and round tables, where HEIMDALL products and results will be shown and promoted. This risk is mitigated by the project partners with end user role.	PCF	Mitigating		
8	3	The final demonstration fails due to lack of access to operation centre.	Low	High	The involvement of several stakeholders as full partners will enable the access to several operation centres. This redundancy will mitigate this risk.	PCF	Mitigating		

Risk ID	WP / SWP	Risk Description	Probability	Impact	Mitigation Measure	Risk Owner	Status	Impact (k€)	Notes
9	2	The final demonstration fails due to non-readiness of technology.	Medium	High	The technology developments in the project do not start from scratch and are widely based on already existing services and prototypes that will be adapted and brought to high technology readiness level, where applicable. Hence, prototypes can be used as fall-back solution in most of the cases. The scope of the final demonstration will be planned starting from the beginning of the project, as part of WP 3, including definition of the operational context, the site and the case study used for demonstration. An incremental plan will be established with priorities for demonstration of technologies from lower to higher TRL. Furthermore, the iterative development approach with consistent interfaces among the different releases gives the opportunity to use a previous release.	All partners	Mitigation 9		
10	3; 4	Refusal of permission for the use of mobile communication frequencies used to provide coverage for remote areas.	Low	Medium	The area for the trials will be selected according to the availability of free frequencies. The national spectrum manager shall approve any frequency used even in the case of experimentation purposes. Alternatively, the mobile communication setup can be replaced by a WiFi network which uses the ISM band.	DLR-KN, AVA	Idle		
11	4	The smartphone / tablet applications planned in HEIMDALL for use by first responders and for crowdsourcing are not available at once for all major mobile operating systems (i.e. Android, iOS, Windows) to validate the fully integrated nature of the HEIMDALL platform.	Low	Low	The responder and crowdsourcing smartphone / tablet device applications will be firstly developed for Android and iOS, as acknowledgment of the market share and prevalence of these two mobile operating systems, and then if schedule and project resources allow, also Windows-based versions will be developed.	AVA	Idle		

Risk ID	WP / SWP	Risk Description	Probability	Impact	Mitigation Measure	Risk Owner	Status	Impact (k€)	Notes
12	4	It is not possible to make use of the satellites to provide communication backhaul via satellite.	Low	Medium	The satellite operator (AVA) is a project partner, mitigating the risk. Additionally, AVA has multiple satellites that will be available for use in this project (HYLAS 1 and HYLAS 2) and a new satellite, HYLAS 4, is scheduled for launch in Q2 2017 with ample capacity. Alternatively, the existing commercial network will be used. For this purpose, a lightweight version of the GUI for mobile devices will be developed.	AVA	Idle		
13	5	Space- and ground-based data cannot be acquired and integrated into the platform.	Low	High	The partners included in the project are by themselves developing products that will feed into the HEIMDALL system. Therefore, the acquisition of data is guaranteed. Additionally, they have the necessary know-how about the available interfaces that will be developed to perform the integration.	SPH	Idle		
14	5	Existing systems cannot be integrated into HEIMDALL due to administrative or technical constraints.	Low	Medium	Partners in the consortium usually work with many of the operational products intended to be integrated and are therefore familiar with the technical constraints. Additionally, the participation as partners of end users from the specific areas in which the trials will take place will provide the connections to address administrative constraints. The scope and strategy for developing the system will be addressed already at the beginning of the project, as part of WP 2. This will allow early identification of any relevant constraint and provide some additional time for solving any issue, if needed.	SPH	Idle		

Risk ID	WP / SWP	Risk Description	Probability	Impact	Mitigation Measure	Risk Owner	Status	Impact (k€)	Notes
15	3	Preparation of the pilot demonstration cannot be performed due to lack of the corresponding administrative permissions.	Medium	High	The scope and strategy for developing the final demonstration will be addressed already at the beginning of the project, as part of Task 3.3. This early identification of the relevant administrative constraints will allow the necessary time to obtain the corresponding permissions, if any. Additionally, the operational demonstration will be held in the geographical areas in which the involved first responders are active, having already triggered the contacts for its performance. Participation of the Catalan Department of Interior is a valuable asset in this regard.	PCF	Mitigating		
16	3	Weather constraints can affect the operational demonstration.	Medium	Medium	Planning of the operational demonstration will be carried out taking into account seasonal constraints for the participation of the fire brigades and the performance of a prescribed burning. An alternative plan will be developed to be able to demonstrate system functionality in an operational environment making use of simulated or previously stored data.	PCF	Mitigating		

End of document