



D3.4

HEIMDALL Demonstrations – Issue 1

Instrument	Collaborative Project
Call / Topic	H2020-SEC-2016-2017/H2020-SEC-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 3
Dissemination Level	PU
Contractual Delivery Date	M7
Actual Delivery Date	29/11/2017
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Document History			
Version	Date	Modifications	Source
0.1	05/09/2017	First draft + ToC	PCF
0.2	17/11/2017	Quality Assurance-ready version	PCF
0.3	24/11/2017	QA-reviewed version	DLR
1.0.F	29/11/2017	First Issue	PCF

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List of Acronyms

AVA	Avanti Communications LTD
AB	Advisory Board
CA	Consortium Agreement
CIMA	Centro Internazionale in Monitoraggio Ambientale – Fondazione CIMA (CIMA Foundation)
CRI	Associazione della Croce Rossa Italiana (Italian Red Cross)
CTTC	Centre Tecnològic de Telecomunicacions de Catalunya (Catalan Technological Telecommunications Centre)
DLR	Deutsches Zentrum für Luft- und Raumfahrt e.V. (German Aerospace Center)
DSS	Decision Support Services
EC	European Commission
EKUT	Eberhardt Karls Universität Tübingen
FBBR	Frederiksborg Brand og Redning (Frederiksborg Fire and Rescue Service)
GA	Grant Agreement
GUI	Graphical User Interface
ICGC	Institut Cartogràfic I Geològic de Catalunya (Catalan Institute of Cartography and Geology)
ICS	Incident Command System
INT	Departament d'Interior – Generalitat de Catalunya (Catalan Government – Department of Interior)
INT-FRS	Departament d'Interior – Generalitat de Catalunya (Catalan Government – Department of Interior); Fire and Rescue Services
INT-PD	Departament d'Interior – Generalitat de Catalunya (Catalan Government – Department of Interior); Police Department
IPR	Intellectual Property Right
MoM	Minutes of Meeting
PB	Project Board
PC	Project Coordinator
PCF	Fundació d'Ecologia del Foc i Gestió d'Incendis Pau Costa Alcubierre (Pau Costa Foundation)
QMR	Quarterly Management Report
SAS	Situation Assessment Services
SFRS	Scottish Fire and Rescue Service

SPH	Space Hellas S.A.
TL	Task Leader
TM	Technical Manager
ToC	Table of Contents
TSYL	Tecnosylva S.L.
UNISTRA	Université de Strasbourg (University of Strasbourg)
UTM	Universal Transverse Mercator
WP	Work Package
WPL	Work Package Leader

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Executive Summary

This document provides a first description of the different demonstrations of the HEIMDALL system and their deployment. Demonstrations will be held along the project lifetime, being coincident with different system releases. In order to be a validation tool for the end-user, demonstrations will serve to check the accomplishment or not, of user requirements, by a series of test cases or exercises that will be carried out by the end-users. In the same line, the deliverable describes the basic design needs to organize the different demonstrations. Demonstrations' exercises will be based and elaborated following the different case studies on forest fires, floods and landslides. The document contains also the relation of data that will be necessary to be extracted in the different study cases to feed the demonstrations. Also mentioned in the document is the strategy that end-users will follow to compile lessons learnt from the different case studies.

1 Introduction

The challenging HEIMDALL objectives will be achieved by following a detailed system engineering process, based on an iterative version of the well-established Vee model [2] for system engineering (see Figure 1-1) and a close cooperation with the relevant stakeholders (first responders), both the consortium partners and the members of the HEIMDALL Advisory Board (AB). Figure 2-1 depicts the interaction between the system engineering and the stakeholder management layers.

The success of system engineering is built upon a deep understanding of the stakeholder's needs and challenges, through the activities done in Task T2.3 and documented in the user requirements provided by HEIMDALL Deliverable D2.6 [3] (future versions of the user requirements will be documented in D2.7-D2.10).

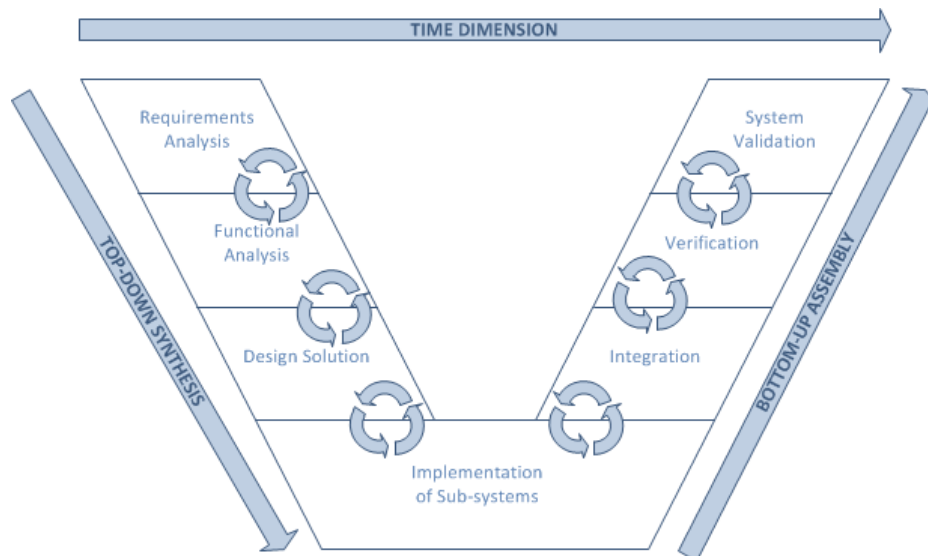


Figure 1-1: Vee model for system engineering

For building realistic multidisciplinary scenarios it is essential to integrate the expertise on management of complex emergency cases which relies on the stakeholders' experience and lessons learnt over several years of service. In order to integrate the valuable stakeholder expertise as an input to the project, HEIMDALL has been conceived to intensively involve relevant stakeholders across Europe listed in Figure 1-2 in the different stages of the platform development.

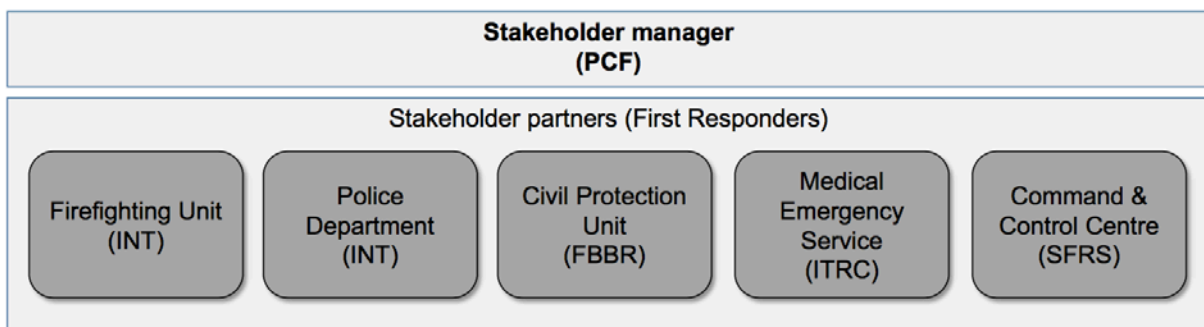


Figure 1-2 Representation of stakeholder partners

The document is structured as follows:

- Section 2 describes the approach to define the different project demonstrations, taking into account the objectives, the deployment, necessary data and constraints, among others;

- Section 3 describes the strategy for compiling lessons learnt to be associated to the different scenarios generated during the demonstrations;
- Section 4 defines the strategy to gather and document end user feedback to be used as input for the next iteration of the system engineering process;
- Finally, Section 5 provides recommendations to other Work Packages (WPs).

2 Design of the Demonstrations

2.1 Objectives

The demonstrations of the HEIMDALL platform (Demonstration 1, 2, 3 & Final Demonstration) will be carried out with the aim of providing a clear picture about the up-to-date status of the platform to end-users as well as to obtain their opinion and evaluation. The test of the integrated set of tools, services and products developed during the project as well as the evaluation of system viability will be done along the different releases (Releases A, B, C and Final Release) until the Final Operational Demonstration. The demonstrations will also serve to translate the end-users' feedback of gathered in each demonstration test exercise into recommendations using dedicated templates (see Section 5).

The different HEIMDALL demonstrations (1, 2 & 3) will be coincident with Advisory Board Workshops (2, 3 & 4), as shown in Figure 2-1, with the objective to consolidate the major and various stakeholder visions and expertise as best as possible.

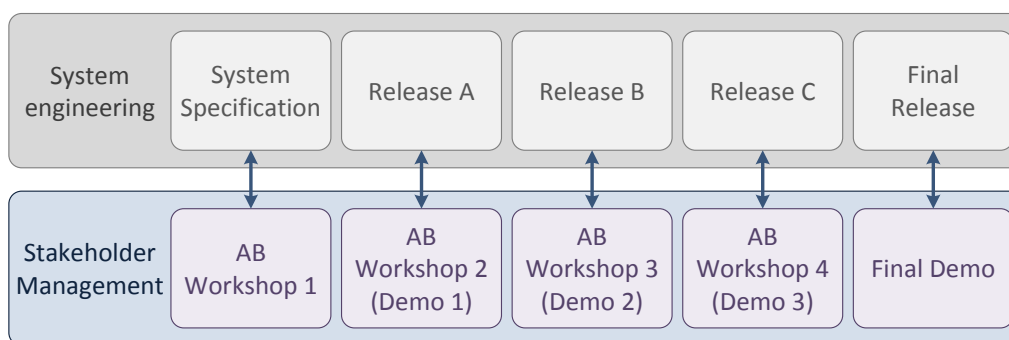


Figure 2-1 HEIMDALL demonstrations and system releases

2.2 Approach for case studies and demonstrations

The emergency management knowledge base, that is being assembled, stored and analysed by the HEIMDALL system arises from the end-users' active collaboration. It is derived from the end-users' experience itself, but also from information, lessons learnt and best practices identified along their active management of a variety of incidents.

For the HEIMDALL consortium the way to gather all this information and knowledge is by collecting a series of case studies of relevant incidents. The methodology to select, analyse and extract the relevant data from case studies is described in the HEIMDALL Deliverable D3.1 [5]. Case studies selected will represent the knowledge and experience of all end-user profiles (Fire and Rescue Service, Police Department, Medial Service, Command & Control and Civil protection) for the three main hazards in the project (forest fires, floods, flash floods and landslides). As it was agreed in the proposal preparation, there will be among all selected case studies a representation of each of the following situations:

- Cross-border incident
- Multi-disciplinary event
- "Request for assistance" situation
- Inter-organizational cooperation
- Population awareness

There will be a total of five case studies analysed, among them two forest fires cases, two flood and flash flood cases and one landslide case. These case studies will be led by a responsible project end-user respectively as defined in brackets in the following list:

- Forest fire case 1 (SFRS)

- Forest fire case 2 (INT-FRS)
- Flood, flash flood case 1 (FBBR)
- Flood, flash flood case 2 (INT-PD)
- Landslide case 1 (CRI)

Most first responders and emergency services produce reports of their interventions in all types of services. End-user partners will adapt their reports by following the methodology described in HEIMDALL deliverable D3.1 [5] for the selected case studies. These modified reports will be used to provide all necessary information and data for the HEIMDALL system and to prepare specific test cases for demonstrations which will be developed within Task 2.5 System Integration and Verification.

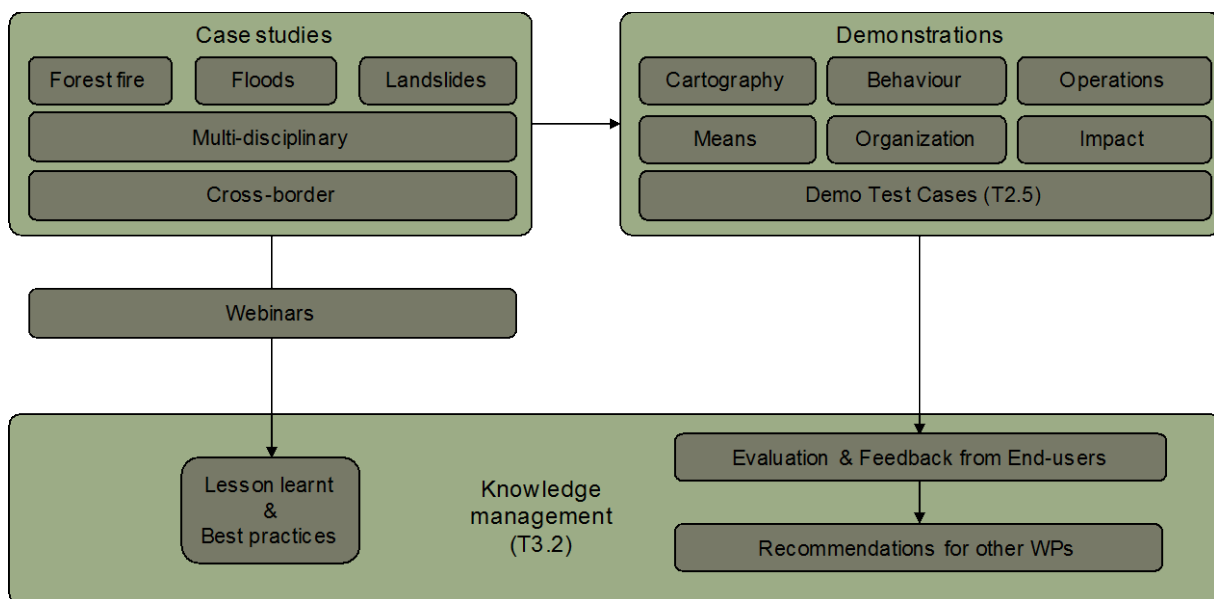


Figure 2-2 HEIMDALL case studies knowledge management

Once the different case studies are selected, a series of webinars will be organized to present these to the HEIMDALL Consortium and other stakeholders (e.g. Advisory Board, other projects, etc.).

Webinars are a tool to hold online presentations and conferences and will be used to introduce and share the selected case studies with other project consortium partners and relevant stakeholders in a dynamic way. The different webinar sessions will be also an opportunity for system developers to know the daily use of the end-users' specific tools (end-users' GUIs, risk maps, communications tools, etc.)

Webinars will focus on the different steps and management areas of a specific incident management case study, to facilitate the system developers' understanding of the case study and its translation into test exercises for each demonstration case.

As mentioned above, the specific methodology to analyse case studies will be further described in HEIMDALL deliverable D3.1[5]. However, the list below shows where webinars will address the generation of demo test cases:

- Hazard risk level and its monitoring by first responders
- Use of risk index by first responders
- Usage examples of the end-users' GUIs during incident management.

- Cartography used in C&C centres
- Summary of weather evolution over time
- Incident behaviour evolution over time (flame length, propagation speed, flood level, landmass mobilized, etc.)
- Description of incident management organization (positions, responsibilities, evolution over time, etc.)
- Incident complexity evolution
- Definition of strategy and tactics
- Use of communication tools among incident responsables and centres of command.
- Deployment of resources over time
- Decisions taken and operations
- Incident impact (population, vulnerable assets, economy impact)

The webinar sessions will be recorded and stored to be disseminated in future project steps.

2.3 Demonstrations deployment

HEIMDALL demonstrations will be organized and focused on obtaining different feedbacks, depending on the status and the release phase of the project.

- System release A and demonstration 1
 - Non-operational demonstration
 - No incident simulation is planned
 - Test and evaluation of system architecture and first validation of graphical user interface (GUI)
- System release B and demonstration 2
 - Single hazard simulation by simulating flood, forest fire or landslide incident
- System release C and demonstration 3
 - Multi-hazard simulation
- Final release and final operational demonstration
 - Major multi-hazard demonstration
 - Major hazard simulated by the deployment of prescribed burn by Catalan Fire Service (INT-FRS)
 - Multi-hazard situation by simulation of flood incident and landslide information

2.4 Data to populate demonstrations exercises

As mentioned above, selected case studies, once analysed and adapted will be the base to populate the HEIMDALL system and the source to get quality data to prepare exercises during demonstrations.

A detailed description of demo test cases and exercises will be provided in future issues of this deliverable. However, in a general way, exercises will serve to validate the HEIMDALL services Risk Assessment, Situation Assessment (SAS), Simulation, Graphical User Interface and Decision Support (DSS).

Data collected to feed test cases during demonstrations is described in HEIMDALL Deliverable D3.1[5]. In this deliverable, the data is categorized into the following areas:

- Incident photos
 - UTM coordinates
 - Summary of behaviour
- Cartography (different cartography layers)
 - Fire perimeter
 - Flooded area and
 - Land mass mobilized
 - Vegetation fuel
 - Return periods areas
 - Infrastructures
 - Etc.
- Hazard data
 - Risk index
 - Weather data
- Behaviour analysis
 - Fire behaviour (flame length, fire spread rate, spotting)
 - Flood behaviour (flood level, flood spread rate)
 - Landslide behaviour
 - Etc.
- Incident organization
 - Strategy, priorities and tactical objectives
 - Operations
 - Impacts (human loses, goods, environmental and economical)
 - Decisions taken
- Lessons learnt and best practices

2.5 Constraints

Main constraints and risks for not succeeding with the objectives of evaluation and deployment of the demonstrations can be classified on organizational, technical and end-user needs level. Mitigation measures were established in the Project Proposal.

- Technical constraints
 - To fail in establishing and maintaining communication from satellite constellations
 - Not to succeed in integrating existing end-user platforms into HEIMDALL
 - To fail in retrieving necessary data from case studies to feed demonstrations and WP4, 5 & 6
- Organizational constraints
 - Not to get necessary administrative permissions to deploy prescribed burning as real fire simulation for the final operational demonstration

- Not to get necessary permissions to obtain access to command and control centres to deploy the HEIMDALL Platform.
- For the final operational demonstration weather conditions are considered as special constraints, either for drought or rain. To avoid that, the final demonstration has been moved from October (M42) to March (M35)
- Not to get corresponding permissions to use local network communications (cell phone or radio)
- End-user risks
 - HEIMDALL products do not satisfy all end-user procedures and needs
 - Lack of engagement of end-users or Advisory Board members
 - Lack of getting lessons learnt from end-users to feed DSS

3 Strategy for compiling lessons learnt and best practices from case studies

Documenting lessons learnt is an opportunity for improvement, helping a team to identify either strengths or weaknesses from a specific incident. It is also an opportunity to carry out discussions about success and unintended outcomes and translate this into recommendations for others in similar situations.

The identification of lessons learnt and best practices is a process that can be done throughout the project life cycle.

The process to identify, discuss and debate about lessons learnt, and their use as a key tool for future improvement is a principal component of an organizational culture committed to continuous improvement and adaptive management. The mechanisms or processes used to collect, share, and disseminate lessons learnt may vary, but in general such a process is comprised of five main elements: defining the project, collecting information, verifying applicability, storage, and dissemination. Figure 3-1 is a summarized representation of this process adapted to the HEIMDALL Project.

This process will be used by HEIMDALL end-user partners to extract key lessons learnt and best practices from selected case studies. Afterwards, identified lessons learnt will be integrated in the SAS and DSS within the tasks done in T6.3, T6.4 and T6.5. Lessons learnt identified, extracted and analysed for each case study will be published in HEIMDALL Deliverables D3.5, D3.6 & D3.7.

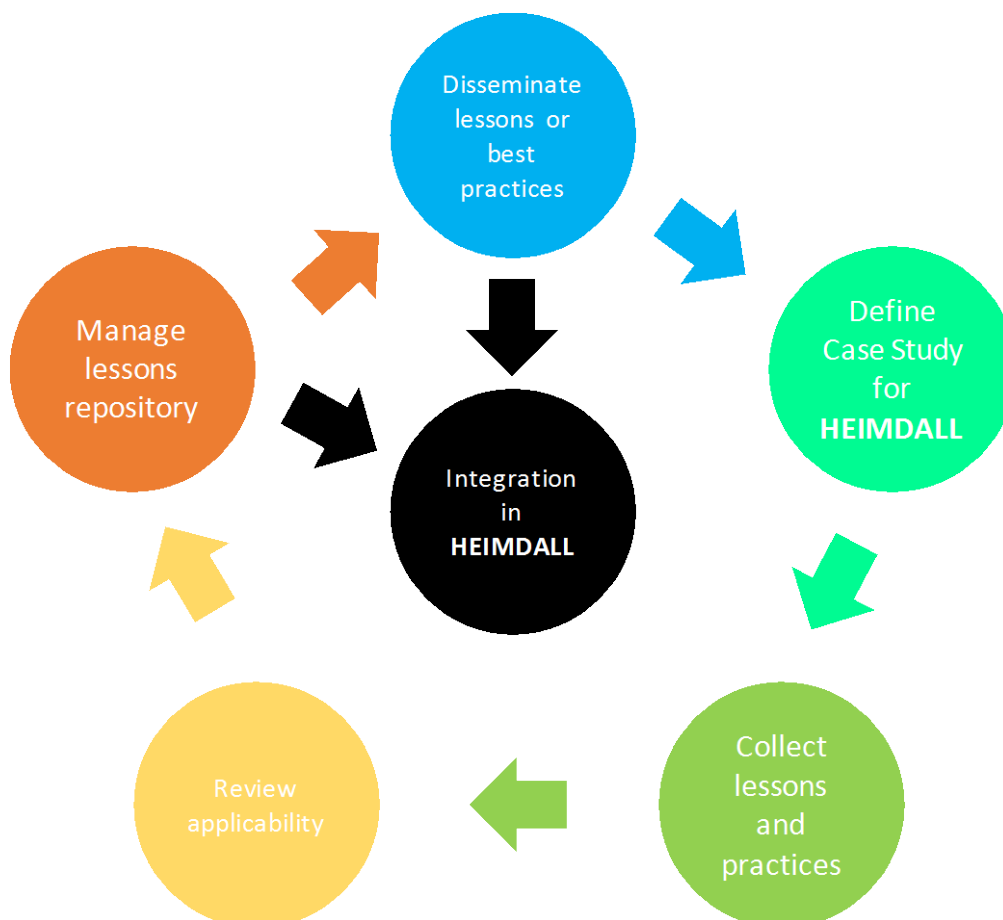


Figure 3-1 Lessons learnt collecting process

3.1 Basic lessons learnt process

The process of collecting lessons learnt is something to be done internally by all end-user partners. This process must be considered only as a proposal to be followed, that should be adapted depending on their specific considerations, internal legislations and organizational issues, etc.

1. Define case study for HEIMDALL

This is the initial step in the lessons learnt collecting process: the identification of the need for lessons learnt in the scope of a specific incident or situation. For HEIMDALL this scope will be specifically determined by the case studies selected and analysed in D3.1, D3.2 and D3.3. In this step, the team in charge of collecting lessons learnt and best practices should be also defined. It is important to understand the specific need and purpose for lessons learnt and all possible audiences that might have the repository of lessons, not only for HEIMDALL, but also the possibility to share it with other projects with different stakeholders (e.g. different actors and authorities, etc.). Initial engagement from all key players should be established in advance of the lessons learnt process. Staff should be selected with specific expertise or knowledge of the project and other needed skills such as communication and writing. The responsible to supervise the collecting process should agree also on the data collection and analysis methodologies (e.g., surveys, questionnaires, workshops) and process. This will be defined internally for each end-user partner. The product format of each lesson is defined in Annex B - Lessons learnt product format.

2. Collect lessons and practices

The collection process involves the capture of information through structured and unstructured processes such as project reviews, written forms, and meetings. The collection of lessons may come from as many sources as an organization is willing to solicit. Lessons learnt can be based both upon positive experiences that achieve organization goals, and upon negative experiences that result in undesirable outcomes. For some projects, a collaborative lessons collection process can be the same or more important as documenting the lessons.

3. Review applicability

In this step the accuracy and applicability of identified lessons will be verified. Review of lessons learnt will be carried out internally by end-users. Lessons learnt identified from different case studies will be shared among all partners in order to let all of them agree on the applicability to the HEIMDALL system.

4. Manage lessons repository

The repository of lessons learnt will be managed by tasks T6.3 Situation Assessment, T6.4 Decision Support Service and T6.5 Scenario Management as a manner share lessons with case studies.

5. Disseminate lessons or best practices

Each single identified lesson learnt is an opportunity to improve for the emergency services community. The option and way to disseminate lessons learnt by HEIMDALL will be discussed in future steps of the project. Seeking for potential synergies with other Horizon 2020 projects to disseminate lessons learnt to can be considered as very positive.

3.1.1 Process approach

The following table (Table 3-1) is an adaptation from White and Cohan [6] who presents a more specific lessons learnt collecting process as a suggestion to be followed internally by end-users. Each end-user will adapt internally this process under consideration of their organization and legislation.

Table 3-1: Simplified lessons learnt collecting process

Step	Lessons learnt collecting process
Step 1	Lessons learnt responsible meets with staff every 2 months to identify and discuss top key lessons. Each emergency service will adapt this timing internally.
Step 2	Lessons learnt responsible or assignees synthesize discussion and enter summary points into the case study format.
Step 3	Lessons learnt responsible or assignee submits/synthesizes lessons.
Step 4	Key lessons are summarized and distributed to all who participate in the group.
Step 5	Central lessons learnt coordinator disseminates lessons, either through regularly updated website or internal newsletter, or holds annual workshop on top lessons learnt for sharing between projects. Coordinator might also identify similar projects that can most benefit from specific lessons shared and facilitate short workshop.

3.2 Lessons learnt data collection

A questionnaire shall be designed in order to conduct a survey among the staff involved in the case study incident. Several free software tools are available for this purpose (e.g. Survey Monkey [8]).

General areas where to obtain information about:

- What went well?
- What didn't go well or had unintended consequences?
- If you had it all to do over again, what would you do differently?
- What recommendations would you make to others doing similar projects?

More detailed questions are suggested by White and Cohan:

- Were the project goals attained? If not, what changes need to be made to meet goals in the future?
- What surprises did the team have to deal with?
- What project circumstances were not anticipated?
- Did you develop any useful workarounds or solutions to problems that cropped up during the project? Document the details in a way that will make sense later
- For any problems that went unresolved what preventative measures can you invent now that can help things go more smoothly next time?
- Are there any new "best practices" you can derive from this project? Note anything that went so well – and now seems to be so thoroughly "road tested" – that you would want to repeat the positive experience next time
- Can you create an easily accessible repository for lessons learnt and best practices you have documented? This could be a database, website, or even a simple document

A compilation of more detailed guidelines is included in the Annex A - Identifying lessons learnt.

After compiled, all lessons learnt will be uploaded in the system accordingly to their associated case study. The responsible for the uploading process will depend on the step of the project. During the system developing process and the preparation and designing of demo test cases, lessons learnt will be uploaded by DLR-DFD. During the execution of

demonstrations sessions, the upload of lessons learnt will be used as one of the exercises to be completed and validated by the end-users.

HEIMDALL will allow end-users to upload lessons learnt in an afterwards steps of emergency management phases. Emergency services usually carries out reviewing phases of major incidents, HEIMDALL will permit to associate and upload lessons learnt to specific scenarios in that phases.

4 Strategy to compile end users feedback from demonstrations

End-user partners as well as Advisory Board members will carry out the evaluation of demonstrations during the planned workshops.

The main objectives of the user evaluation will depend on the release step of the project:

- Validation of the operational platform service functionality by use of emergency management scenarios
- Evaluation of the adaptability of the technology/implementation to forest fire, flood and landslide emergencies
- Evaluation of the technology transfer to emergency services
- Offline assessment of the situation compared to online assessment using dynamic tools
- Evaluation of the alert dissemination channels to the population and communication to first responders on the field
- Evaluation of all HEIMDALL services (e.g. Situation Assessment, Decision Support and Scenario Management)

Main end-user characteristics that are very valuable to carry out the evaluations are belonging to a professional group of emergency management, having an evident level of technological expertise and an evident level of expertise in emergency management. This is summarized and classified for each end-user profile:

- Fire and Rescue Service
- Police Department
- Medical System
- Civil Protection
- Command & Control Centre

The strength of having end-users as partners and as demonstration evaluators in the project resides in the wide variety of represented knowledge that comprises the complete phases of emergency management (prevention, preparedness, response and recovery) and knowledge and experience on:

- Emergency management organizations
- Incident Command System (ICS)
- Technical expertise (radio communication, EO tools, cartography software, etc.)
- Simulation tools
- Geographic Information Systems

Evaluations will be carried out from the point of view of the five main end-user profiles and the roles of:

- Incident commander
- Command & control operator
- Forward command post operator
- Advisor for strategic and tactical decisions

- Technical advisor
- Citizens
- Other authorities
- Other external advisors

For the final operational demonstration a wide variety of participants is expected which might have the following profiles, in addition to already mentioned roles and profiles:

- Academia and research institutions
- Other public and private entities

Since for the Final Demonstration a real fire will be deployed by INT, it will be highly valuable to receive feedback from two different perspectives (1) end-users working on the field during an emergency and (2) end-users working from a control room during an emergency.

4.1.1 Users evaluation form

The evaluation of end-users will be compiled by means of a dedicated form. A specific and dedicated form will be designed for every demonstration since each of them represents different releases of the system.

The evaluation process and the design of the evaluation form will be based on the experiences gathered during the PHAROS Project, and the evaluation reported in PHAROS Deliverable “D7.3 Evaluation of end users, conclusions and recommendations” [7].

The end-users evaluation form will address each of the system services and data sources:

- Space-based data
- Ground-based data
- Aerial-base data
- External data services
- Crowdsourced and first responder’s data
- Graphical user interface
- Scenario management
- Modelling and simulation
- Risk and vulnerability assessment
- Situation assessment and decision support services

Through this form end users will be able to check the achievement and applicability, as well as validate all requirements gathered in HEIMDALL Deliverable D2.6 [3].

5 Recommendations to other WPs

The methodology followed to create this section, is based on the lessons learnt from the PHAROS Project, and reported in PHAROS Deliverable “D7.3 Evaluation of end users, conclusions and recommendations” [8].

Accordingly, in Task 3.2 Knowledge Management, all feedbacks, evaluations and lessons learnt gathered from case studies and demonstrations will be categorized and derived into recommendations to be implemented during technical development of the HEIMDALL Platform by Work Packages 4, 5 and 6.

These recommendations will be converted into new requirements using the existing templates presented in HEIMDALL Deliverable D2.6 [3] and shown in Table 5-1.

Table 5-1 Requirement template

Requirement ID		Platform Services	
Timing			
<u>Requirement:</u>			
Data sources			
Profile			
Main Risk			
DRM Cycle			
Scenario Phase			
Source			

6 References

- [1] Collison, C. Parcell, G. "Learning to Fly - Practical knowledge management from leading and learning organisations". John Wiley & Sons; 2nd Revised edition, 2004
- [2] Haskins, C. (2011): INCOSE Systems Engineering Handbook v3.2.2; A Guide for System Life Cycle Processes and Activities; INCOSE-TP-2003-002-03.2.2, October 2011.
- [3] HEIMDALL Deliverable "D2.6 HEIMDALL Requirements Report – Issue 1"
- [4] HEIMDALL Deliverable "D2.1 HEIMDALL Service Concept Specification"
- [5] HEIMDALL Deliverable "D3.1 Case studies – Issue 1"
- [6] M. White, A. Cohan, "Guide to Capturing Lessons Learned". The Nature Conservancy.
- [7] PHAROS Deliverable "D7.3 Evaluation of end users, conclusions and recommendations"
- [8] Survey Monkey (www.surveymonkey.com)

Annex A - Identifying lessons learnt

The guidelines below are modified guidelines from the book "Learning to Fly - Practical knowledge management from leading and learning organisations" [1] which points out ten key steps to facilitate a lessons-learnt review:

1. *Call the meeting.* If conducting a post-facto process, hold a face-to-face meeting as soon as you can after the project ends, within weeks rather than months.
2. *Invite the right people.* The project leader needs to attend, as do key members of the project team. If a similar project is already underway, then there is great value in the new project team attending a "customer" for the knowledge.
3. *Appoint a facilitator.* Identify a facilitator who was not closely involved in the project. The facilitator should be someone who can ask questions from an independent, but non-threatening standpoint. This isn't an audit, it's an investment!
4. *Revisit the objectives and deliverables of the project.* Ask "what did we set out to do?" and "what did we achieve?"
5. *Go through the project step by step.* Revisit the project plan and identify any deviation from plan. Where were the delays, and what went ahead of schedule? What changed and why?
6. *Ask "what went well"?* Ask "what were the successful steps towards achieving your objective?" and "what went really well in the project?" Ask a "why?" question several times. This is vital, and will get you to the root of the reason. Don't take the initial response at face value. Often people don't even realise what the underlying reason behind a success or failure is.
7. *Find out why these aspects went well, and express the learning as advice or guidelines for the future.* This is a key point. Try to avoid expressing lessons learnt in a passive, past tense, such as: "Project Foxtrot completed ahead of schedule because the project team remained in-tact throughout the design and execution stages". The lesson will be far more accessible to others if it is expressed as: "On time-critical projects, ensure that the project team remains consistent throughout the design and execution stages of the project. This will eliminate any learning-curve issues due to the take-on of new staff". As the facilitator, acknowledge feelings and press for the facts. Ask "what repeatable, successful processes did we use?" and "how could we ensure future projects go just as well, or even better?"
8. *Ask "what could have gone better?"* Ask "what were the aspects that stopped you delivering even more?" Identify the stumbling blocks and pitfalls, so they can be avoided in future by asking "what would your advice be to future project teams, based on your experiences here?"
9. *Ensure that participants leave with their feelings acknowledged.* Ask for "Marks out of ten" and "What would make it a ten for you?" to access residual issues.
10. *Record the meeting.* Use quotes to express the depth of feeling. Express the recommendations as clearly, measurably and unambiguously as possible, using the guideline format explained in point 7. Take a photograph of the project team, and ensure that you record contact information (e-mail and telephone) to make follow-up conversations easy for anyone reading the lessons learnt. Ensure that you circulate the write-up around the participants for comment, and permission to use specific quotes before sharing more widely.

Annex B - Lessons learnt product format

Title:

Covered Period:

Date of the report:

Case Overview (1/2 - 3/4 page):

Background Project Objectives/Goals:

Conservation impact (1-2 paragraphs):

- Evaluative description of results/measures (include timeline)

What worked well? (1-2 paragraphs):

- Could include quotes from partners/staff - reflective description on lessons learnt

What didn't work so well? (1-2 paragraphs):

- Could include quotes from partners/staff - reflective description on lessons learnt

If you had it all to do over again, what would you do differently? (1-2 paragraphs):

What recommendations would you make to others doing similar projects? (1-2 paragraphs):

- Would the above two questions provide similar descriptions?

Suggestions for others (1-2 paragraphs):

- Could include quotes from partners/staff – prescriptive advice

Resources: Links to other relevant information

Metadata: Would the information below appear at the bottom of the case study report?

Author: Name/Job Title/OU/Region/email

Location of Project: Region, OU/Country/State

MHT: What is the Major Habitat Type for this partnership?

Types of Partners: Government, Place-based NGO, International NGO, Corporate, Community Based Organization etc.

Priority: Freshwater, Climate Change, Marine, Conservation Lands

Date: month/year written (place to allow for updating date)

Language: Language of case submission or translation

Also include a photo of partner/ partnering or place

Decision Making Phase: Situation Assessment / Plan Formation / Plan Execution

End of document