



D6.4-Plan for business and exploitation of results (preliminary)



ADAPT TO SURVIVE

Expecting the unexpected and knowing how to respond

Plan for business and exploitation of results (preliminary)

VERSION

Version 1.0

DATE

3-June-2017

ABSTRACT

The DARWIN project aims to develop state of the art resilience guidelines and innovative training modules for crisis management. The guidelines, which will evolve to accommodate the changing nature of crises, are developed for those with responsibility of protecting the population or critical infrastructure/services from policy to practice.

This deliverable describes the DARWIN initial plan for business and exploitation of results. The principal objective for exploitation in the DARWIN project is to implement an exploitation strategy to facilitate the successful exploitation and adoption of results and benefits within emergency services, research communities and policy advisers. Exploitation activities in the DARWIN project aim to ensure the longevity of the project's results through either policy uptake, further research or commercial applications.

This deliverable constitutes a preliminary version of D6.8, which will comprise the final plan for business and exploitation of results. It focuses on the project's exploitation objectives and methodology and discusses the exploitation environment through a basic analysis of strengths, weaknesses, opportunities and threats (SWOT) and an overview of the main competitors. It describes the relationship and the joint dissemination and exploitation activities taking place between DARWIN and the other DRS-7 projects. It presents the DARWIN exploitation strategy including key exploitable results, exploitation potential, partners' interest and role in exploitation as well as relevant target sectors, audiences, stakeholders and markets. It outlines the impact that the project is set out to have and roughly outlines the types of exploitation KPIs to be formulated. Finally, it presents the timeline and the implementation of the exploitation activities and lists the next steps.

KEYWORDS:

Resilience, resilience engineering, crisis management, exploitation, business plan, SWOT analysis, innovation management, marketing, impact



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Executive Summary

This deliverable is the initial plan for business and exploitation results of DARWIN (hence the suffix "(preliminary)" to its title). It identifies the key exploitable results and the methodology that will be implemented to achieve the objectives. It defines the different types of exploitable entities (knowledge, methods, agreements, technologies and networks) and their expected added value for key stakeholders. It provides assurance that the impact the project is set out to have after the end of the funding period is achieved. It discusses the project partners' commitment to and responsibilities in the exploitation activities to be carried out. It presents an overview of how the exploitable results will be utilised by key stakeholders. It outlines potential barriers and external threats and proposes ways in which these will be overcome.

This deliverable constitutes a preliminary business and exploitation plan. The development of the plan will continue throughout the final year of the project, and D6.8 will present the final business and exploitation plan for the project in M36 (May 2018).

About the project: The DARWIN project aims to develop state of the art resilience guidelines and innovative training modules for crisis management. The guidelines, which will evolve to accommodate the changing nature of crises, are developed for those with the responsibility of protecting population or critical services from policy to practice.

The guidelines address the following resilience capabilities and key areas:

- Capability to anticipate
 - Mapping possible interdependencies
 - Build skills to notice patterns using visualisations
- Capability to monitor
 - Identify resilience related indicators, addressing potential for cascade
 - Establish indicators that are used and continuously updated
- Capability to respond and adapt (readiness to respond to the expected and the unexpected)
 - Conduct a set of pilot studies
 - Investigate successful strategies for resilient responses
- Capability to learn and evolve
 - Explore how multiple actors and stakeholders operate in rapidly changing environments
 - Enable cross-domain learning on complex events
- Key areas: social media and crisis communication; living and user-centred guidelines; continuous evaluation and serious gaming



1 Introduction

1.1 Purpose of the document

The purpose of this deliverable is to create a business and exploitation plan that will explore the potential for the development and exploitation of the resilience guidelines beyond the life of the DARWIN project. All partners have contributed to and will continue to be engaged in exploitation activity assessing the re-use potential, commerciality and applicability of the concepts and ideas central to the evolution of the guidelines.

This deliverable aims to:

- Present a preliminary exploitation strategy for the project and provide a holistic overview of the exploitation landscape surrounding it;
- Introduce the actors, markets and sectors that are relevant in the context of exploitation, and to emphasise the importance of iteratively analysing their role, needs and potential;
- Serve as a step towards setting out clear and measurable exploitation targets, the results of which will be monitored and reviewed regularly;
- Serve as a guidance document for DARWIN project partners and to stimulate exploitation engagement among partners;
- Ensure that exploitable entities will be utilised in an optimal way and that the desired impact is achieved;
- Act as a preliminary document that will be developed further in the last year of the project and finally result in D6.8 Plan for business and exploitation of results (final) in M36 (May 2018).

1.2 Intended readership

This deliverable is a public document accessible to anyone interested in the DARWIN plan for business and exploitation of results.

As this deliverable is public, it is openly accessible to external stakeholders. It is thus disseminated both internally within the project consortium and externally to any interested parties outside the project.

It is of particular interest to all DARWIN project partners, as all partners have committed to contributing to and engaging in the exploitation activities assessing the re-use potential, commerciality and applicability of the concepts and ideas central to the evolution of the guidelines as they are developed and a set of actions to ensure further exploitation and impact of the guidelines.

This deliverable serves as an instrument that helps see the big picture and understand the exploitation objectives of the project. It aims to help the partners understand where they fit in and the ways in which they can contribute. The work involved in preparing this deliverable sparked partners to think about strengths and weaknesses of the project and to identify possible corrective actions to implement in the final part of the project.

1.3 Inputs from other projects

The cooperation efforts between the DRS-7 projects will lead to an exchange of best practices and ideas on how to maximise impact. The present deliverable does not include significant inputs from other projects. The use and the content of the exploitation grids, however, were inspired by the work conducted within another project (see section 2.2).

It is expected that D6.8 Plan for business and exploitation of results (final) will contain exploitation related details shared by the other DRS-7 projects, namely IMPROVER, RESILENS, SMR and RESOLUTE. Details on the cooperation between the projects is provided in section 4.2 Other projects and the DARWIN context.



1.4 Relationship with other deliverables

This deliverable is closely linked to other deliverables in work package six as well as deliverables in other work packages across the project. Having to do with the exploitation of the results, it is essentially connected to all deliverables discussing the identification and analysis of stakeholders, requirements and the use and re-use of the results. In WP1, it is linked especially to D1.3 Practitioner and academic requirements for resilience management guidelines. In WP2, it is linked to D2.1, D2.2 and D2.3 that discuss relevant stakeholders. In WP3, there is a close link to D3.1 and D3.2 where relevant target audiences are identified.

In addition, this deliverable has a strong relationship with D6.8 *Plan for business and exploitation of results [final]* (due in M36, i.e. May 2018), which will build on this deliverable contain the final business and exploitation plan that will explore the potential for the development and exploitation of the resilience guidelines beyond the life of the project. This deliverable also draws on elements covered in D6.1 *Dissemination, exploitation and external collaborations strategy [preliminary]* in M3 and on D6.3 *Dissemination, exploitation and external collaborations strategy [update of D6.1]*, both of which describe the planning and execution of the dissemination and exploitation strategy.

This deliverable will also be important for the creation of the final version D6.7 *Dissemination, exploitation and external collaborations strategy [final of D6.1]* in M36.

1.5 Acronyms and abbreviations

Term	Explanation
DARWIN Resilience Management Guidelines ¹	Help or advice for DARWIN Resilience Management Guideline users to recognise or improve resilient performance (from the definition of “guidance”, Merriam-Webster Online Dictionary)
DRS-7	Topic ID for the call behind this project. Full name of call is “Disaster-resilience: safeguarding and securing society, including adapting to climate change”. Full name of topic 7 is “Crisis and disaster resilience – operationalizing resilience concepts”. There are five Horizon 2020 projects financed under this topic (DARWIN, IMPROVER, RESILIENS, RESOLUTE, SMR)
Exploitation	The utilisation of results in further research activities other than those covered by the action concerned, or in developing, creating and marketing a product or process, or in creating and providing a service, or in standardisation activities (European Commission 2013, 2016b)
Resilience ²	The ability to resist, absorb, accommodate to and recover from the effects of disturbances and changes in a timely and efficient manner, including through adaptation and restoration of basic structures and functions (adapted from UNISDR, 2009; Hollnagel, 2011)
Stakeholder	Person or organization that can affect, be affected by, or perceive themselves to be affected by a decision or activity. A decision maker can be a stakeholder (ISO 31000:2009)

Table 1: List of definitions

¹ This is a working definition, which may be updated throughout the DARWIN project, likely as part of WP2.

² This is a working definition, based on the DoA definition and a common definition in Resilience Engineering. As a working definition, it may be updated throughout the DARWIN project, likely as part of WP2.



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Term	Explanation
ATM	Air Traffic Management
CI	Critical Infrastructure
CoCRP	Community of Crisis and Resilience Practitioners
CoU	Community of users
CCRAAAFFFTING	Creating Collaborative Resilience Awareness, Analysis and Action for the Finance, Food and Fuel System in INteractive Games (Swedish Funded Project, 2017-2020)
CRAMSS	Collaborative Resilience Assessment and Management Support System
DCoP	DARWIN Community of Practitioners
DG SANTE	Directorate General for Health and Food Safety
DoA	Description of Action
DRMG	DARWIN Resilience Management Guidelines
DRIVER	DRiving INnoVation in crisis management for European Resilience (FP7-SEC)
DRS-7	Disaster Resilient Societies 7
ESREL	European Safety and Reliability Conference
HC	Healthcare
IPR	Intellectual Property Rights
JRC	Joint Research Centre
KPI	Key Performance Indicator
PEDR	Plan of Exploitation and Dissemination of Results
SotA	State-of-the-Art
SSH	Social Sciences and Humanities
SWOT	Strengths, weaknesses, opportunities and threats
TIPS	Transport R&D for Innovation - A support action funded by the European Commission in the period 2012-2014 (under the Seventh Framework Research Programme) to enhance the capacity of EU transport projects to transform research results into innovative products and services.
TORC	Training for Operational Resilience Capabilities (SAFERA EC FP7 Project)
TRL	Technology Readiness Level

Table 2: List of abbreviations



2 Exploitation Objectives and Methodology

This section explains how DARWIN defines successful exploitation of its results and how this translates in to exploitation objectives. This section will also address the parameters of this exploitation plan and the methodology used in order to arrive at the preliminary exploitation strategy.

2.1 Exploitation Objectives

The principal objective for exploitation in the DARWIN project is to implement an exploitation strategy to facilitate the successful exploitation and adoption of results and benefits within emergency services, research communities and policy advisers. Exploitation activities in the DARWIN project aim to ensure the longevity of the project's results through either policy uptake, further research or commercial applications.

Exploitation is referred to by the European Commission as ³:

“The utilisation of results in further research activities other than those covered by the action concerned, or in developing, creating and marketing a product or process, or in creating and providing a service, or in standardisation activities.”

The meaning of the word “results” in this context is broad, and refers to “any tangible or intangible output of the action, such as data, knowledge and information whatever their form or nature, whether or not they can be protected, which are generated in the action as well as any attached rights, including intellectual property rights”.

The European Commission considers the activities to disseminate and exploit results from research and innovation projects, and to evaluate the performance of EU funding as well as carry out communication activities, as an important and integral part of the Horizon 2020 programme. Enhanced dissemination and exploitation are considered strategic matters for the success of Horizon 2020 and for the achievement by the programme of sizeable economic, social and environmental impacts. For this reason, each project is required to produce a Plan of Exploitation and Dissemination of Results (PEDR) (European IPR Helpdesk 2015) showing how the partners intend to communicate and use the results of the project, both during and beyond its execution.

The DARWIN Exploitation task (T6.2) aims to explore the potential for the development and exploitation of the project results (in particular the DARWIN resilience management guidelines) and to plan the following exploitation process. According to the Grant Agreement (art. 45) exploitation is in fact a compulsory activity, as each beneficiary must — up to four years after the period set out in end of the project — take measures aiming to ensure ‘exploitation’ of its results (either directly or indirectly, in particular through transfer or licensing). Exploitation measures accepted by the Commission include:

- (a) using results in further research activities (outside the action);
- (b) developing, creating or marketing a product or process;
- (c) creating and providing a service, and
- (d) using results in standardisation activities.

Based on this requirement, task 6.2 aims to address exploitation in a coherent manner throughout the project and to support the beneficiaries in eliciting and coordinating their exploitation strategies, thus increasing the

³ http://ec.europa.eu/research/participants/portal/desktop/en/support/reference_terms.html



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chances for the results of the project to become, through appropriate exploitation measures, innovations that can produce tangible benefits and satisfy specific needs and wants. In particular, support is provided to:

- elicit the key exploitable results of the project, intending them as concrete objects that are able to survive and be used after the end of the project
- identify the added value of the project and boost further scientific developments
- define the market potential, the target end-users and all potential competitors
- define the partners' exploitation strategies

2.2 Exploitation Methodology

The DARWIN exploitation methodology was structured in a three-step process, having the aim to support the partners in the definition of the project exploitation strategy reported in this document. All partners were actively involved in the process and contributed to its application.

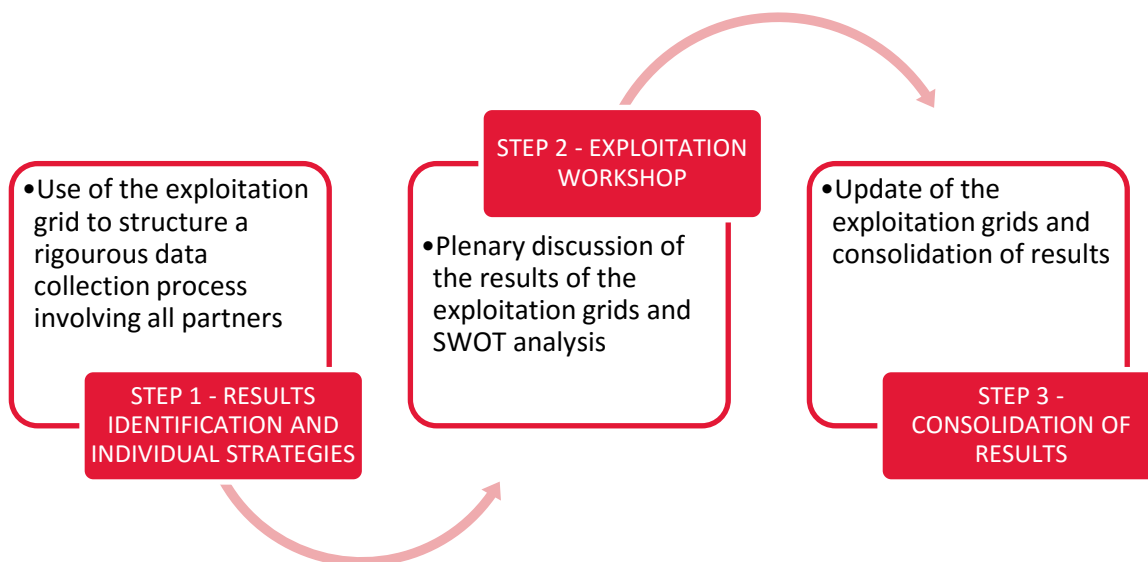


Figure 1: Exploitation methodology and process

2.2.1 Step 1 – Results identification and individual strategies

The first step of the process was aimed to support the partners in identifying the exploitable results they are interested in and in defining their exploitation strategy. A specific data collection tool, called **Exploitation Grid**, was designed for this purpose by the team in charge of the exploitation task (Deep Blue and CARR) and shared with the other partners. Specific phone conference meetings were organised to collect feedback on the usability of the grid, train the partners on how to use it and check the suitability of the answers provided. The grid was implemented in MS Excel and was used by each partner individually.



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The exploitation grid was inspired by the work done in the TIPS project⁴. In particular, the overall approach to exploitation and the toolkit of supporting materials produced by TIPS were deeply analysed by the DARWIN Consortium, who grounded the work on exploitation on the guidelines of the project and used some of its results to structure the exploitation grid and define the exploitation methodology adopted.

The exploitation grid was intended to structure a rigorous data collection process involving all partners. It is designed in two parts: the first one (Table 3) is generic and intended to collect information about the results that each partner plans to exploit, while the second part (Table 4) is more specific to market-oriented activities and so limited to those partners interested in this kind of exploitation.

⁴ TIPS is a support action funded by the European Commission in the period 2012-2014 (under the Seventh Framework Research Programme) to enhance the capacity of EU transport projects to transform research results into innovative products and services. The project was aimed to develop and pilot measures and support tools to help other publicly funded transport projects to succeed in reaching their final target group and achieving innovation development. All measures and tools were undertaken to pursue the goal of “opening the eyes” and “guiding” project consortia through to a structured process of successful exploitation. For information: www.transport-tips.eu



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A	B	C	D	E	F	G
	Name and Organisation: Please specify	Type of Organisation: Please specify (academia, industry, end user....)				
	KEY EXPLOITABLE RESULTS <i>This column contains the key exploitable results identified in the DoA and in D6.1. Please fill in JUST the rows concerning the results that you intend to exploit at the end of the project and feel free to introduce additional exploitable results if necessary.</i>	YOUR INTEREST IN THE EXPLOITATION <i>Please indicate your level of interest in the exploitation of such result. High interest = to exploit such result is very important for my activity Medium interest = I would like to exploit such result at the end of the project but I am not sure Low interest = I may decide to exploit such result at the end of the project</i>	YOUR ROLE IN THE EXPLOITATION <i>Please note that you are one of the owners of the exploitable result if you contributed to its development. You are a beneficiary partner if you are interested in exploiting a result produced by other partners</i>	EXPLOITATION STRATEGY <i>Please explain how you intend to exploit such result.</i>	TARGET SECTOR <i>Please describe your target sector of application, try to be as specific as possible in the description. Example of target sectors could be: "Air traffic management in Europe", "Healthcare in France", "European Research on Resilience Engineering".</i>	TARGET USERS/CLIENTS/AUDIENCE <i>Please describe the target users/clients/audience of your exploitation activity, trying to be as specific as possible.</i>
D6.1 R1	Improved knowledge of crisis and emergency best practices					
DoA R1	Systematically Literature Review, catalogue of resilience concepts and key research findings					
D6.1 R2						
DoA R2	Generic Resilience management guidelines - results of pilot and evaluation					
D6.1 R3						
DoA R5	Relisience guidelines adapted to specific domains					
DoA R3	Storage of guidelines					
DoA R6/7	Community of Crisis and Resilience Practitioners					
DoA R8	Training modules on resilience guidelines					
DoA R9	Pilot implementation of resilience management guidelines					
D6.1 R5						
DoA R4	Tools for simulation and serious games					
D6.1 R6						

Table 3: Exploitation Grid Part 1



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A	B	I	J	K	L	M	N
	<p>KEY EXPLOITABLE RESULTS</p> <p><i>This column contains the key exploitable results identified in the DoA and in D6.1. Please fill in JUST the rows concerning the results that you intend to exploit at the end of the project and feel free to introduce additional exploitable results if necessary.</i></p>	<p>POSSIBLE COMPETITORS</p> <p><i>Please describe if you are aware of possible competitors offering similar products and in case what they do and in which sector. This is important to understand the differences with what you offer</i></p>	<p>EXPECTED ADDED VALUE</p> <p><i>Please explain the added value of your exploitable result with respect to other products currently available on the market.</i></p>	<p>POSSIBLE MARKET BARRIERS</p> <p><i>Please list here the barriers having the potential to affect the market penetration of your exploitable result. Examples of market barriers could be related to "absence of awareness about the need of such product", "potential users not accepting it", "high costs of commercialisation"</i></p>	<p>TIMETABLE OF THE EXPLOITATION</p> <p><i>Please explain the process that you foresee for the exploitation and provide target exploitation date if available. Example: "prototyping and testing activity in the period 2018-2020, commercialisation by 2022".</i></p>	<p>IMPACT ON YOUR PORTFOLIO</p> <p><i>Please describe if the exploitable result is intended to integrate your current portfolio (for instance it will give you the possibility to offer additional services to your clients) or rather is expected to extend your portfolio (for example, disclosing new markets for your activity, or opening the way to new clients).</i></p>	<p>IPR MEASURES</p> <p><i>Please describe how you plan to protect your intellectual property rights.</i></p>
D6.1 R1	Improved knowledge of crisis and emergency best practices						
DoA R1 D6.1 R2	Systematically Literature Review, catalogue of resilience concepts and key research findings						
DoA R2 D6.1 R3	Generic Resilience management guidelines - results of pilot and evaluation						
DoA R5	Relisience guidelines adapted to specific domains						
DoA R3	Storage of guidelines						
DoA R6/7	Community of Crisis and Resilience Practitioners						
DoA R8	Training modules on resilience guidelines						
DoA R9 D6.1 R5	Pilot implementation of resilience management guidelines						
DoA R4 D6.1 R6	Tools for simulation and serious games						

Table 4: Exploitation Grid Part 2



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In the first part of the grid (Table 3) the partners are requested to identify the key exploitable results that they intend to exploit and their strategy.

In column B, by default, the exploitation grid contains the **key exploitable results** identified so far in the project. The mapping between them and the documents where they have been expressed is available in Column A. For instance, the code “DoA R2 / D6.1 R3” associated to the key exploitable result “Generic Resilience management guidelines - results of pilot and evaluation” means that this is the key exploitable result n.2 in the Description of Activity (DoA) and key exploitable result n.3 in D6.1 “Dissemination, Exploitation and External Collaboration Strategy (preliminary)”. At the end of a research project partners may have developed different kinds of results, e.g. process/process technologies, methods, models, recommendations for standards, services/service technologies, prototypes/pilots for a product, software codes, intellectual property right (i.e. patent), publications in journals, presentations. This column serves to list all the results that the partners consider exploitable.

While filling in the grid, the partners are invited to pick up just the exploitable results they are interested in and to complement the list with additional results not yet identified at project level as exploitable that they consider of interest for their specific exploitation activity. This is important to evaluate whether the key exploitable results identified at the beginning of the project are still considered as such or rather other exploitable results emerged in the meantime.

For each of the key exploitable result selected the partners are then requested to declare:

- their specific **level of interest in the exploitation** (column C), distinguishing among “high interest” (when they are strongly inclined to exploit this result because it is important for their main activity), “medium interest” (when they plan to exploit the result but are not sure they will actually do it) and “low interest” (if the interest is quite limited but they think they may decide to exploit the result in the future) and no interest at all.
- their specific **role in the exploitation** (column D), distinguishing if they are in the position to exploit the result as “owner” (because they contributed to the development of the specific result) or as a “beneficiary” (if they are interested in exploiting a result produced by the project without their direct contribution); this choice is important to understand results that are intended to be exploited by more than one partner, discuss the possibility of joint exploitation initiative and the IPR measures to be applied.
- their **exploitation strategy** (column E), explaining how they intend to exploit the specific result selected; in this case the question is open, as there are no predefined answers and the partners are free to write the text that better describe their own strategy.
- the **target sector** (column F) and the **target audience** (column G) they intend to address with this exploitation strategy.

This first part is generic and shall be filled in for all the exploitable results selected.

The second part of the grid (Table 5) is then dedicated to deepen the analysis and the description of the strategy applied in case of market oriented results, i.e. those results that are intended to be exploited at commercial level as products or services. Not all the results of a project are in fact suitable to be used in the market. Let us consider for example the case of publications: they can be relevant exploitation materials for the partners as they increase the chances for them to access to new research projects, but cannot be spent at commercial level. This kind of exploitable results are not market oriented, while other results (such as for instance software



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codes, or methods) are, and require additional information to be collected to define the exploitation strategy. Market-oriented exploitation can be defined as⁵: any exploitation process of research outcome that has a commercial objective, i.e. it ultimately (aims for or) contributes to gaining or increasing profits and/or economic (i.e. market-related) competitiveness. As a condition, there has to be a traceable link between the research outcome and the supposed economic effect.

In order to support the partners in better describing their exploitation strategy of market oriented results, they are requested to declare:

- **possible competitors** already in the market or expected to enter it: in order to plan how to position in the market it is important for the partner to understand who are the potential competitors, what they offer, in which sectors, to which target and at which conditions,
- **added value** of the proposed solution with respect to what already in the market or being proposed by other subjects, justifying the choice of the partner and the associated effort necessary to propose it into the market,
- **possible market barriers** that the product/service may encounter while positioning in the market and having the potential to affect its market penetration. For example, market barriers could be related to "absence of awareness about the need of such a product/service", "potential users not accepting it", "high costs of commercialisation" but also to the "high level of novelty of the product" in case of research breakthroughs or radical innovations. The identification of possible market barriers implies the need for the partner to study the market, identify suitable measures to overcome the barriers and check the efficacy of the actions undertaken,
- **impact on partner portfolio**, explaining in particular whether the new product/service is intended to integrate the current portfolio (for instance it will give the possibility to offer additional services) or rather is expected to extend the portfolio (for example, disclosing new markets for the partner's activity, or opening the way to new clients), and
- **IPR measures** that the partner plans to adopt to protect its intellectual property rights; examples of possible options include patent, licence, trademark, registered design etc.

2.2.2 Step 2 – Exploitation Workshop

The second step of the methodology consisted in the organisation of an Exploitation Workshop having a twofold objective of i) presenting and discussing the information collected through the exploitation grids and ii) complement the definition of the exploitation strategy by means of the execution of a SWOT analysis.

The exploitation workshop was held in Linköping on 30th March 2017 and involved all the partners of the DARWIN project. The complete list of meeting attendees is reported below:

⁵TIPS "How to convert Research into Commercial Success Story? - Part 1 - Analysis of EU-funded research projects in the field of industrial technologies" (European Commission, 2013) www.transport-tips.eu/uploads/Policy_documents/Innovation_Convert_Research_into_Commercial_Success_Story_part1.pdf



Organisation	Participants
BGU	Odeya Cohen
CARR	Linda Henriksson, Eddie Shaw
DBL	Paola Lanzi, Luca Save
ENAV	Valentina Cedrini, Federico Frediani
FOI	Jiri Trnka, Rogier Woltjer
KMC	Rebecca Forsberg, Carl-Oscar Jonson, Peter Berggren
ISS	Lorenza Scotti
SINTEF	Ivonne Herrera
TUBS	Per Martin Schachtebeck, Peter Förster

Table 5: Exploitation workshop attendance list

The agenda of the workshop was structured as follows:

From	To	Who	What
9.00	9.10	Rebecca Forsberg (KMC) Ivonne Herrera (SINTEF)	Welcome
9.10	9.40	Paola Lanzi (DBL) Linda Henriksson (CARR)	Workshop organisation and inputs from the exploitation grids
9.40	10.40	All	Exercise: SWOT analysis in small groups
10.40	11.00	Coffee Break	
11.00	11.45	All	Presentation of the results of the SWOT analysis
11.45	12.00	Paola Lanzi (DBL) Linda Henriksson (CARR)	Conclusions & next steps

Table 6: Agenda of the Exploitation workshop



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After the introduction of the meeting, the first part of the workshop was dedicated to present and discuss the information provided by the partners in the exploitation grids. The comparative analysis of the grids allowed to show and discuss the different strategies of the partners and brought to a general awareness about the various plans. At the end of this section the partners agreed to review and consolidate their grids in the light of what discussed and declared to have an increased awareness of the exploitation strategy of the consortium and (in some cases) cleared ideas about their own strategies.

The second part of the meeting was then dedicated to the SWOT analysis of the project. Partners were divided in 2 groups and were requested to discuss about Strengths, Weakness, Opportunities and Threats of the project on the basis of guidelines and examples provided in the preparatory session. Groups were structured as follows:

- Group 1: KMC – BGU – ENAV – TUBS - ISS
- Group 2: DBL – SINTEF – FOI - CARR

At the end of the working sessions the two groups were requested to share and discuss their respective results and consolidate in a unique from the SWOT analysis of the project.

CARR and DBL were involved, with different people, both as moderators and participants.

2.2.3 Step 3 –Consolidation of results

The third and final step of the methodology was dedicated to consolidate the exploitation strategy of the project. In this phase, the exploitation grids were revised and updated on the basis of the discussions held during the exploitation workshop.

The output produced at the end of the process is the preliminary exploitation strategy presented in the next sections of this document.



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Figure 2: Snapshots from the Exploitation Workshop



3 Exploitation Strategy

This section presents the exploitation strategy outlined so far by the partners of the DARWIN project. The document is to be considered preliminary as it reflects the plans that the partners have at the current stage of the project (M24). A more complete and detailed version will be released at the end of the project.

3.1 Key Exploitable Results

The following table presents the list of key exploitable results already identified in the DoA and in D6.1 and referenced as starting point for the production of the present document (D6.4). The first column traces the link between each exploitable result and the document where it has been identified. For instance, “D6.1 R1” means that this result is listed as key exploitable result n.1 in the DoA.

SOURCE	KEY EXPLOITABLE RESULTS
D6.1 R1	Improved knowledge of crisis and emergency best practices
DoA R1 - D6.1 R2	Systematic Literature Review, catalogue of resilience concepts and key research findings
DoA R2 - D6.1 R3	Generic Resilience Management Guidelines targeted to user needs
DoA R5	Resilience guidelines adapted to specific domains
DoA R3	Storage of guidelines
DoA R6/7	Community of Crisis and Resilience Practitioners
DoA R8 - D6.1 R4	Training modules on resilience guidelines
DoA R9 - D6.1 R5	Pilots implementation of resilience management guidelines
DoA R4 - D6.1 R6	Tools for simulation and serious games

Table 7: List of key exploitable results emerging from DoA and D6.1

The DARWIN Partners were requested to evaluate the suitability of this list and to propose changes, if necessary. Possible changes could include rephrasing, removal or addition of items in the list.

After this check, the list was consolidated as follows.

SOURCE	KEY EXPLOITABLE RESULTS
D6.1 R1	Improved knowledge of crisis and emergency best practices and catalogue of resilience concepts
DoA R2 - D6.1 R3	Generic Resilience Management Guidelines targeted to user needs
DoA R5	Resilience guidelines adapted to specific domains
DoA R3	Storage of guidelines
DoA R6/7	Community of Crisis and Resilience Practitioners



SOURCE	KEY EXPLOITABLE RESULTS
DoA R8 - D6.1 R4	Training modules on resilience guidelines
DoA R9 - D6.1 R5	Pilots implementation of resilience management guidelines
DoA R4 - D6.1 R6	Tools for simulation and serious games
New	Integration of typical risk management practice with business continuity elements
New	Dissemination strategy
New	Exploitation strategy

Table 8: Consolidated list of key exploitable results

Essentially two changes were introduced:

- the first two key exploitable results in the list were merged into one, labelled “Improved knowledge of crisis and emergency best practices and Catalogue of resilience concepts”
- a few new key exploitable results were added to the list by different partners, labelled respectively as “integration of typical risk management practice with business continuity elements”, “dissemination strategy” and “exploitation strategy”

In the following sections, we present an overview of the results collected from the partners in terms of interest in these results, exploitation strategy and target sectors. A more specific description of the strategy of each partner is provided afterwards.

3.1.1 Interest in exploitable results

As already described in section 2.2.1, partners were requested to declare their interest in the exploitation of the results presented above, classifying their interest as high – medium – low or no interest. The results of this data collection was further consolidated during and after the exploitation workshop, and is depicted in the following chart.

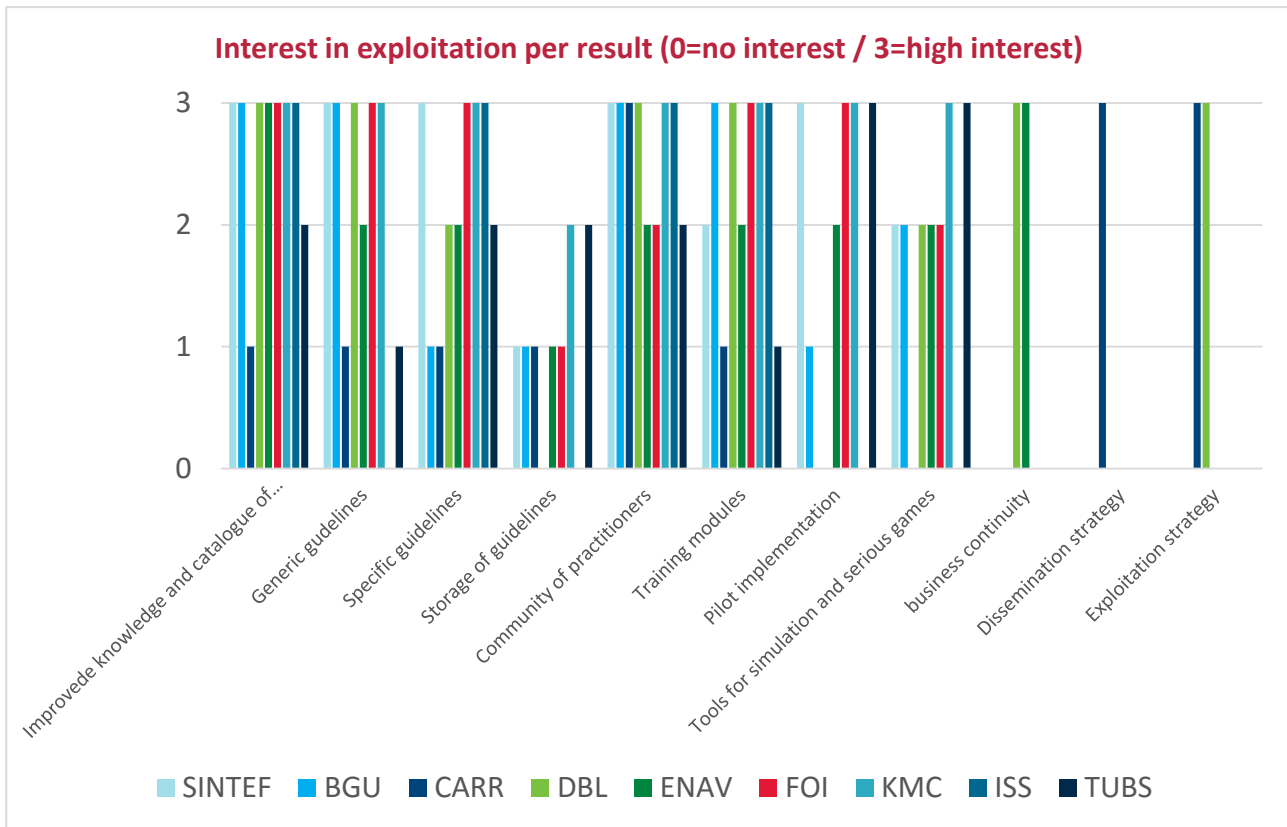


Figure 3: Interest in exploitation per result

In general, partners tend to show interest for the results identified since the very beginning of the project, and very few of them declared to be completely not interested in the exploitation of one or more of these results. Most of them tend to have high interest in “**Improved knowledge of crisis and emergency best practices and catalogue of resilience concepts**” (7/9), “**community of practitioners**” (6/9), “**generic guidelines**” (5/9) and “**training modules**” (5/9), while an average low interest in the “**storage of guidelines**” is recorded at this stage of the project, probably because the storage has not been implemented yet.

An interesting aspect concerns the resilience guidelines, considered since the very beginning the most relevant output of the project. Significantly, in this list guidelines are distinguished in two classes (generic and specific) coherently with the work done in the project. What emerges concerning exploitation is that partners tend to perceive them quite differently and sometimes to have different levels of interest in them. Although most partners declare the same level of interest in the two sets of guidelines (e.g. SINTEF, KMC, FOI, ENAV, CARR), there are also partners presenting higher interest in “generic guidelines” than on “specific guidelines” (i.e. BGU and DBL) or vice versa (i.e. TUBS), and partners interested just in one of the two (e.g. ISS, interested just in specific guidelines). This clearly depends on their specific strategies, described in next section.

Another interesting point concerns the newly added key exploitable results. As expected, at this stage, they tend to be considered of high importance almost exclusively by the partners who proposed them, while very limited or no interest was received from the other partners.

The following chart presents the same information as above, but structured by partners. It shows that there are partners having a selective interest in specific results while others are less focussed and tend to be interested in almost all the results, although with different degrees. In the first group: ISS is interested in the exploitation



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of 4 results, all considered very interesting, or similarly CARR presents a clear high interest in 3 results. In the second group partners such as KMC and SINTEF present a generic high interest in the exploitation of most results.

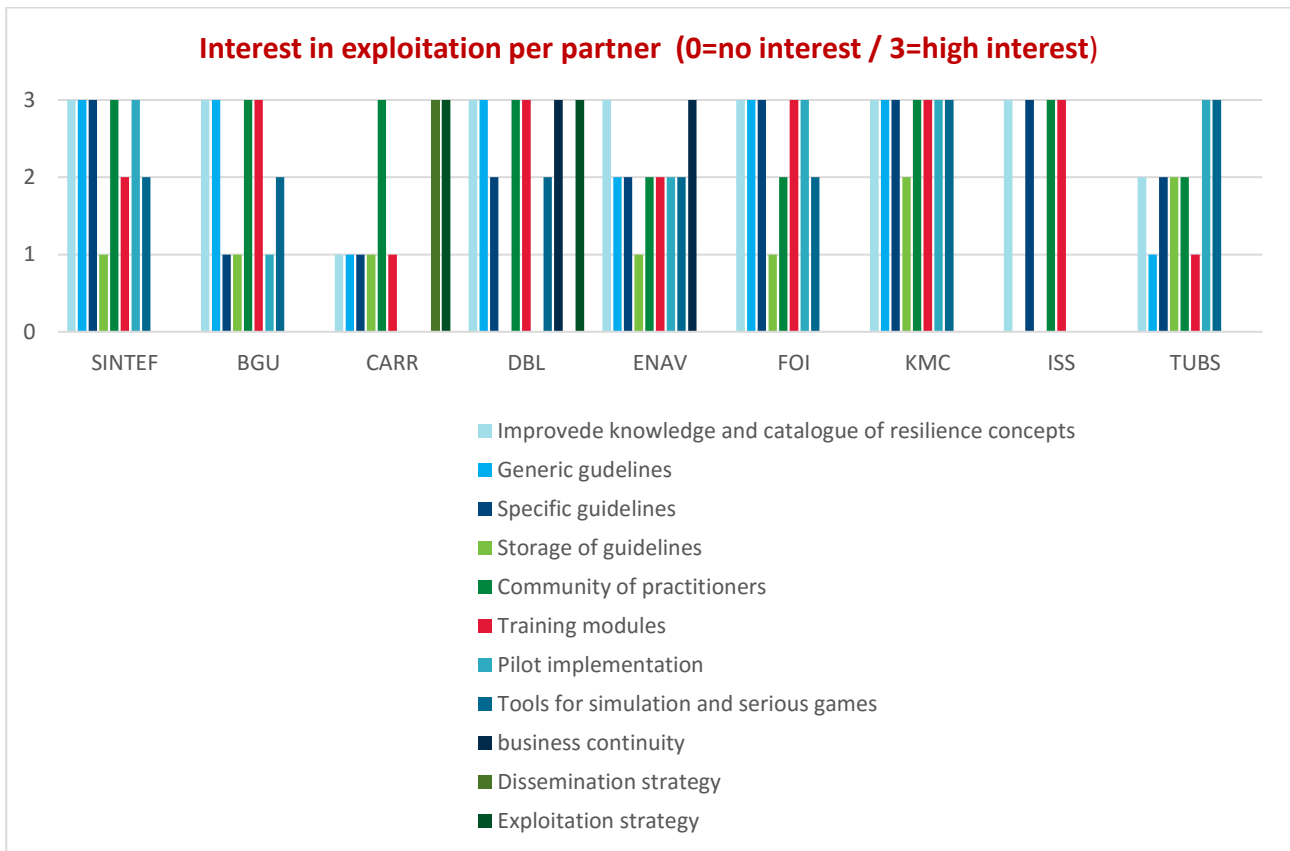


Figure 4: Interest in exploitation per partner

3.1.2 Exploitation strategies

Partners have different exploitation strategies. In general, their strategies can be classified in three categories:

- New research, when the results are intended to be used for publications and to be involved in new research projects and activities
- Commercial exploitation, when the partner intends to use the result according to a market oriented strategy, based on offering a new service or a new product on the market
- Standard setting, when the partner intends to propose the adoption of the result as a standard
- Internal adoption, when the partner plans to use the results internally to improve the knowledge within the organisation or improve the internal procedures.

The following graph shows the exploitation strategies of the partners. It distinguishes the strategy according to the level of interest declared and discussed above.

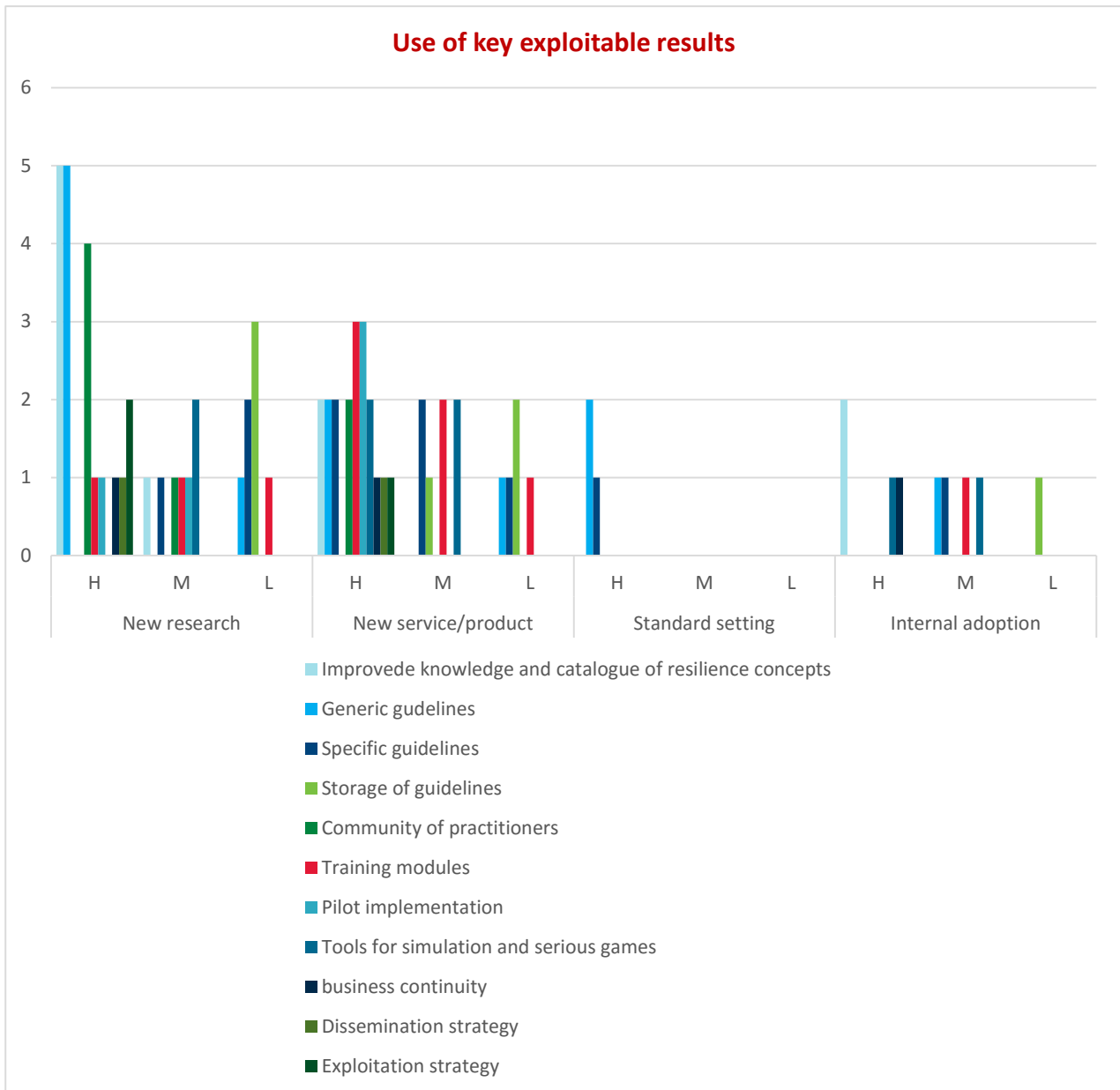


Figure 5: Use of key exploitable results

It is evident that partners are mainly interested in using the results of the project for new research and commercial activity. The results that are most candidate to be exploited through new research activities are Improved knowledge of crisis and emergency best practices and catalogue of resilience concepts (5 partners), generic resilience management guidelines (5 partners), community of practitioners (2 partners) and exploitation strategy (2 partners). The results that are more likely to be exploited through commercial strategies are instead training modules and pilot implementation of resilience management guidelines (2 partners each). Standard setting is mainly associated to the use of generic and specific guidelines. Internal adoption is a strategy that cover many results but for a few partners.

A macroscopic view of partners' strategy highlights the following taxonomy:

- the exploitation strategy of SINTEF is mainly research oriented



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- BGU and ENAV are particularly interested in the internal reuse of the results of the project
- CARR, KMC and ISS present exploitation strategies that are mainly market oriented
- DBL, FOI and TUBS present twofold exploitation strategies, interested to both research and market oriented exploitation activities.

The target audience tend to accurately reflect the domains of application of the various partners.

The following sections present more detailed information about the exploitation strategy of each partner.

3.1.3 SINTEF

The exploitation strategy of SINTEF reveals the enthusiasm of this partner for the results produced and its commitment. Most of the exploitable results are considered of high interest for SINTEF and potentially able to extend their portfolio. The strategy is mainly research oriented, with potential commercial activities associated to the results considered less interesting for exploitation purposes.

Improved knowledge of crisis and emergency best practices and catalogue of resilience concepts

SINTEF attributes high interest to this result and plans to exploit it for publications and involvement in new research activities in safety critical domains such as aviation, healthcare and oil and gas. The added value of the work done in DARWIN is related to the new knowledge produced on resilience aspects already in place while managing crises and to the consolidation of resilience concepts and applications across domains. However, in order to fully understand the value of what produced SINTEF recognises that it would be interesting to compare it with the output of the other DRS-7 projects and with ongoing standardisation activities. The result is considered owned by SINTEF, as it contributed to develop it, and the company does not foresee the need of IPR management at the moment.

Generic Resilience management guidelines

SINTEF has high interest for the exploitation of this result in safety critical domains such as healthcare, aviation and oil and gas. Two categories of potential target audience are identified, belonging respectively to the fields of education and policy making. In the first group SINTEF plans to address educational institutions and to profit by these results to be involved in activities such as dissertations and research projects; in the second group the target users involve policy makers, civil protection units, service providers of critical infrastructures, first responders, public and media. In this framework, the exploitation strategy consists in proposing the resilience guidelines as standards, to be used to evaluate the suitability and completeness of procedures already in place or being designed, and thus should be protected by a licence. According to SINTEF the resilience guidelines produced by DARWIN present the advantage of being grounded on a robust research in multiple fields and to have been validated in representative environments. However, there is also consciousness that evident market barriers could emerge from the nature of the guidelines themselves (too theoretical) and from the fact that they have not been approved by governments and regulators (yet). Investments could be necessary at the end of the project for the commercial transformation of this result.

Resilience guidelines adapted to specific domains and Pilot implementation of resilience guidelines

SINTEF considers these results of high interest and plans to exploit them jointly to provide recommendations to the EU for the standard design of procedures particularly for the aviation and healthcare domains. Possible competitors (other DRS-7 projects) and potential added values (guidelines based on the research in multiple fields and validated in relevant domains through pilot implementations) are the same as for the generic resilience guidelines. Potential market barriers are related to the identification of the appropriate dissemination



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channel for policy making. Also in this case SINTEF is owner of the results and foresees the need to protect its IPR by means of a licence.

Community of Crisis and Resilience Practitioners

SINTEF has high interest for the exploitation of this result. The strategy is to use it as owner for the involvement in new research projects concerning safety critical domains such as healthcare, aviation and oil and gas. The existence of the community is considered one of the assets of the project and a fundamental contributor to its results. In particular, the involvement of the community of end-users in the co-design and creation of the guidelines is seen as an added value of the project. It is expected that it will bring the advantage of enabling early identification of barriers and opportunities for implementation as well as gathering potential early adopters, thus reducing the effort necessary at the end of the project for the commercial transformation of the output to be exploited. Suitable means to keep the community active and committed after the end of the project shall be identified and put in place.

These are the key exploitable results that mostly interest SINTEF. In addition to them, there is also a medium interest for **training modules on resilience guidelines** and **tools for simulation and serious games**. SINTEF is owner of both of them and considers an exploitation strategy based on service offering in safety critical domains such as aviation, healthcare and oil and gas. The potential target of the training activity could be civil protection units, first responders and providers of critical infrastructures, while the tools for simulation and serious games could address to a broader audience of public and private safety and security actors. Considering the lack of competing training courses on resilience management for crises, SINTEF deems this might be a potential new market, but is also conscious of the difficulties of properly advising and commercialising it. The same potential market barrier is associated to the tools for simulation and serious games, which have instead potential competitors on the market offering other analogous tools. The difference between these tools and the ones produced in DARWIN is still to be analysed.

Finally, a low interest is declared for the **storage of guidelines**. The low interest means that the company has little intention of exploiting this result. However, in the remote chance of a reconsideration, the exploitation strategy of SINTEF could be based on product sales to service providers of critical infrastructures and researchers. In this case it would be necessary to accurately analyse the output of the other DRS-7 projects to understand if they could configure as competitors and if the storage produced in DARWIN could be considered more advantaged (for example because the information is presented in different formats). Moreover, the problem of how to keep the storage updated after the end of the project should be carefully addressed. Licence is envisaged as the most suitable IPR management measure in case of exploitation of this result.

3.1.4 BGU

The exploitation strategy of BGU is internal and related to the mission of the institute. The University plans essentially to profit by the results of the project to update the contents of student lectures. The results on which BGU is most interested in this framework are **improved knowledge of crisis and emergency best practices and catalogue of resilience concepts, generic resilience management guidelines, community of crisis and resilience practitioners** and **training modules on resilience guidelines**. A medium interest for the exploitation in the same framework is declared for **tools for simulation and serious games**, while the remaining key exploitable results (i.e. **resilience guidelines adapted to specific domains, storage of guidelines** and **pilot implementation of resilience management guidelines**) are considered of low interest for the aims and the activity of the institute.



3.1.5 CARR

The exploitation strategy of CARR is essentially commercial. The company is in fact interested in those results that could offer it the possibility of new activities in the dissemination and exploitation fields, both as partners of research projects and as consultants. The results on which the company is most interested for exploitation purposes are: **community of crisis and resilience practitioners, dissemination strategy and exploitation strategy**. It is evident that the choice of these results is related to the specific role played in the project, rather than on the research topics of the project itself. The community of crisis and resilience practitioners is planned to be exploited for the involvement in new research projects, while dissemination and exploitation strategies are more intended to consultancy activity. CARR is owner of these three results. The market oriented exploitation strategy is still to be defined and will be detailed in the final part of the project.

The company has a low interest in the exploitation of most of the other results (**improved knowledge of crisis and emergency best practices and catalogue of resilience concepts, generic and specific resilience management guidelines, storage of guidelines and training modules**) and no interest at all in the rest (**pilot implementation of resilience management guidelines and tools for simulation and serious games**).

3.1.6 DBL

The exploitation strategy of DBL is mainly commercial. The company is interested in profiting by the output of the project to create new business opportunities by means of new research projects, extension of its training activities and consultancy. The results it is most interested in for exploitation are **improved knowledge of crisis and emergency best practices and catalogue of resilience concepts, generic resilience management guidelines, community of crisis and resilience practitioners and integration of typical risk management practice with business continuity elements**. Details about the market oriented exploitation strategy of this result are not provided at this stage and will be included in the final version of this document due at the end of the project.

Improved knowledge of crisis and emergency best practices and catalogue of resilience concepts

DBL is owner of this result and presents a high interest in it. Its exploitation strategy is multifaceted and includes involvement in new project, offering of training services and consultancy. The target of application are public and private operators of safety and security domain, such as aviation and ATM, railway, maritime, healthcare and automotive.

Generic Resilience management guidelines

Also for the generic resilience management guidelines DBL presents a high interest and a multifaceted exploitation strategy as owner. The strategy also in this case includes involvement in new project, offering of training services, consultancy and standard setting. The target of application are public and private operators of safety and security domain, such as aviation and ATM, railway, maritime, healthcare and automotive.

Community of crisis and resilience practitioners

DBL is highly interested in the exploitation of the DCoP. DBL is owner and intends to use contacts with practitioners from new crisis management domains for new research projects in safety critical domains such as railway, maritime, healthcare, automotive, civil protection and oil and gas.



Training modules on resilience guidelines

DBL has high interest in this result and intends to exploit it as beneficiary to offer training services to civil protection units, first responders and providers of critical infrastructures operating in safety critical domains such as aviation and ATM, railway, maritime, healthcare and automotive.

Integration of typical risk management practice with business continuity elements.

This result has been proposed by DBL and is considered of high interest for exploitation. The strategy of DBL is to use it for publications, involvement in new research projects and training service offering to policy makers (high and middle management) operating in ATM and aviation in Europe and in healthcare in Italy.

Exploitation strategy

DBL has also high interest in exploiting the experience in dealing with exploitation strategy consolidated during the project. The strategy is to reuse this experience in new research activities and service offering.

In addition to these results considered of high interest for exploitation activity, DBL attributes also a medium interest to **resilience guidelines adapted to specific domains** and **tools for simulation and serious games**. DBL is owner of specific guidelines and plans to exploit this result through involvement in new research projects, consultancy and training primarily in ATM and healthcare domains, but also to other service providers of critical infrastructures. The tools for simulation and serious games could be instead exploited as beneficiary to get examples to be inserted in training modules provided to public and private actors operating in safety and security domains.

DBL declares no interest in the exploitation of **storage of guidelines** and **pilot implementation of resilience management guidelines**.

3.1.7 ENAV

The exploitation strategy of ENAV is mainly internal. The company intends to use the output of the project to train the personnel and improve the internal procedures. The results attracting most interest for exploitation purposes are **improved knowledge of crisis and emergency best practices and catalogue of resilience concept**, and **integration of typical risk management practice with business continuity elements**.

Medium interest is attributed to the exploitation of **generic and specific resilience management guidelines**, **community of crisis and resilience practitioners**, **training modules** and **tools for simulation and serious games**.

Low interest is instead attributed to **storage of guidelines**, while there is no interest for **exploitation and dissemination strategy**.

For the internal adoption of project results ENAV recognises that the absence of awareness about the need of such product and potential users not accepting it are risks to be taken into account.

3.1.8 FOI

FOI is interested in the exploitation of most of the key exploitable results identified in DoA and D6.1, while the three additional key exploitable results recently proposed by some of the partners have not been taken into account as relevant for its activity and interesting for its exploitation purposes. The exploitation strategy of FOI is twofold: commercial and research oriented. Almost all the key exploitable results selected are in fact planned to be used to integrate the FOI portfolio in activities of service offering and publications.



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FOI is the only partner of the DARWIN consortium that figured out a possible timetable for the exploitation of these results, considering the activity starting already in 2017. FOI is owner of all the results it is most interested in but no information is provided at this stage on possible IPR management measures to be applied.

Improved knowledge of crisis and emergency best practices and catalogue of resilience concepts

FOI attributes high interest to this result planning to use it internally and for publications targeting research institutes and universities globally. Although many literature reviews on resilience being published by other institutes/universities, FOI considers that the added value of publishing the work done in DARWIN is related to the focus on SRL. This difference may not be obvious for journals and shall require some effort to be explained and communicated.

Generic Resilience management guidelines and Resilience guidelines adapted to specific domains

FOI has high interest for the exploitation of these results, which are planned to be used both for service offering and publications. Service offering addresses mainly policy makers, civil protection units, service providers of critical infrastructures, first responders, public&media, in Sweden and Europe, especially in the sectors of healthcare and Air Traffic Management. The added value of these guidelines with respect to potential competitors could be related to the fact that guidelines have been validated and their consolidated version takes into account the lessons learned emerging from the evaluation. However, FOI is conscious that the added value of the guidelines is still unknown because a comparative analysis with alternative products proposed by the potential competitors (first to fall other DRS-7 projects) has not been performed yet and it would be necessary before complete this exploitation strategy. In addition, a set of potential market barriers are identified which could affect the commercial transformation and exploitation of these results into market oriented products. In particular the generic resilience management guidelines may reveal too expensive to implement and too difficult to understand. Generic resilience management guidelines could also reveal too generic and difficult to instantiate to specific domains as done by the project for healthcare and air traffic management. Difficulties of market penetration could also derive from the fact that the guidelines are not mandatory to implement and the potential users may be unaware of needs and benefits potentially deriving from the adoption.

Training modules on resilience guidelines

FOI deserves high interest in the exploitation of this result and plans to offer it as a service to critical infrastructure service providers in Sweden and Europe. Target audience for the training course are policy makers, civil protection units, service providers of critical infrastructures, first responders, public&media, in Sweden/Europe, especially HC and ATM. The analysis of potential competitors, market barriers and added value of the proposed training module will be carried out afterwards in the course of the project.

Pilot implementation of resilience management guidelines

This result, also considered of high interest for the FOI exploitation activity, will be used at commercial level and in publications in close connection with generic and specific guidelines. As per other partners in fact the pilot implementation is a means to prove the consolidated nature of the guidelines based on validation in relevant domains and applicative experience in the field.

In addition to these results considered the most interesting and promising for exploitation, medium interest for the exploitation of **community of crisis and resilience practitioners** and **tools for simulation and serious games** is also declared. As for the other partners, for FOI the community of crisis and resilience practitioners is mainly a means to be involved in other research projects interesting research area of resilience engineering, community resilience and critical infrastructure in Sweden and Europe. FOI is beneficiary of both these results.



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Finally, low interest is declared in the exploitation of the **storage of guidelines**. Details are not provided at this stage about the eventual exploitation strategy applied.

3.1.9 KMC

The exploitation strategy of KMC is essentially commercial. Almost all the key exploitable results of DARWIN coming from DoA and D6.1 are considered of high interest and are intended to be exploited at commercial level through services offered in the healthcare domain in Sweden. The only exceptions are the storage of guidelines, which is considered of medium interest for KMC exploitation activities and the generic resilience management guidelines planned to be used for publications rather than for consultancy and service offering. The three additional key exploitable results recently proposed by some of the partners have not been taken into account by KMC as relevant for its activity and interesting for its exploitation purposes. The level of maturity of the results produced so far does not allow KMC to plan its market oriented exploitation strategy yet, and more detailed information on this will be provided at the end of the project.

3.1.10 ISS

The exploitation strategy of ISS is mainly focussed on the idea of using the knowledge acquired and some of the outputs produced in the project to offer services in the public and private healthcare sector at both national and international level. This strategy mainly refers to the key exploitable results considered of high interest, namely “Resilience guidelines adapted to specific domains”, “Training modules on resilience guidelines” and “Pilot implementation of resilience management guidelines”.

Resilience guidelines adapted to specific domains

ISS plans to exploit this result at commercial level, to offer a service to healthcare service providers of critical infrastructures (National level, extra EU countries) and researches. The service would integrate the ISS portfolio. It would consist in a check of procedures currently used and suggestions on how to improve them in order to take into account the specific guidelines produced in DARWIN. Looking at the market, the added value of the guidelines produced in DARWIN with respect to the product of potential competitors such as private companies and regional healthcare agencies is identified in the origin of the guidelines themselves, i.e. in the fact that these guidelines derive from the merge of various perspectives and collaborative activities. As a consequence possible market barriers identified so far by ISS are more related to the actual will of private and public healthcare organizations to change their procedures to integrate the DARWIN guidelines rather than to competitors already in the market. There would be the need to clearly state and demonstrate the benefits of such guidelines to convince such potential clients to change their procedure. The ISS is owner of this result, as it contributed actively to its development and at the moment does not foresee the need of IPR management.

Training modules on resilience guidelines

ISS plans to exploit this result at commercial level, to offer a service to policy makers and healthcare service providers of critical infrastructures (at national level, and in extra EU countries). The service would integrate the ISS portfolio. It would consist in the provision of a training course based on the one developed in DARWIN, of which ISS is beneficiary as it is not directly involved in its production. Although the quality of the product is considered high due to the fact that the module takes into account different perspectives, ISS recognises the risk that the difficulty in updating the training module could be a market barrier advantaging competitors coming from private companies and academia who could more easily update their contents.



Pilot implementation of resilience management guidelines

ISS plan to exploit this result in two different ways: for the involvement in new research projects and at commercial level. At commercial level, it would like to use it to offer a service to national and regional emergency and crisis management policy makers (not only from the healthcare domain). The service would consist in the execution of similar exercises, and would be a means for ISS to integrate its portfolio. In this case ISS potential competitors could be other national and regional healthcare organizations and other public bodies involved in the crisis management (e.g. Civil Protection Dep.). Costs and organization of the implementation (i.e. difficulty to set up the team of actors, time and place) could be important market barriers to be taken into account. According to ISS to overcome this problem it would be advisable to set up a standard and repeatable drill. The ISS is owner of this result, as it contributed actively to its development and at the moment does not foresee the need of IPR management.

In addition to this, the “**improved knowledge of crisis and emergency best practices and catalogue of resilience concepts**” deserves high interest and is planned to be used internally to the organisation and for the involvement in new research activities.

3.1.11 TUBS

Although the key exploitable results have been classified according to the specific interest of TUBS in exploiting them, high level exploitation strategy has been elaborate just for three of them. More details about this strategy and on how TUBS plans to exploit the other results will be elaborated in the final part of the project and will be provided in the final version of this deliverable.

Tools for simulation and serious games

TUBS is owner of this result and has high interest in its exploitation. The exploitation strategy is twofold. On the one hand, the strategy includes consultancy to public and private sector safety and security domains for the application these tools. On the other hand, the institute plans the internal adoption of the simulation aiming to re-usage and further evolve it. Potential competitors, market barriers and added value of the DARWIN simulator will be identified in later stages of the project.

Resilience guidelines adapted to specific domains

TUBS has medium interest for the exploitation of this result, produced by other partners of the project (so TUBS is beneficiary). The plans are to use the guidelines internally for consultancy and publication primarily in the ATM and healthcare domains.

Training modules on resilience guidelines

TUBS is owner of this result and has a medium interest for its exploitation. The high-level strategy is to use this result for consultancy and publications mainly in the ATM domain.

3.2 DARWIN Competitors

This section outlines what is known to the partners about potential competitors to DARWIN as of M24 (May 2017).

This section is underdeveloped due to the partners’ unfamiliarity with the players in the field. This section will thus be expanded on in D6.8 (M36) when the partners have a clearer idea of the exploitation landscape and the competitors in each field.



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All DARWIN partners were requested to think about and fill in DARWIN's potential competitors in exploitation grids (see section 2.2.1). Some partners had a vague idea of the different competitors and mentioned certain entities; others left the space blank. During the exploitation workshop organised by DBL and CARR in Linköping in March 2017, several partners clearly expressed difficulty in mapping out DARWIN competitors at this stage of the project.

In the following, an overview of the details collected from the partners will be presented.

The partners that were unable to identify competitors were **ENAV, BGU, KMC** and **CARR**.

TUBS stated that they didn't have any information on potential competitors yet either, but mentioned DLR as a probable one.

DBL stated that they were not currently aware of other services in the market, but mentioned that partners of other DSR projects may become competitors in the future.

ISS listed the following as potential DARWIN competitors: other DRS-7 projects, private companies, research institutes in the EU and globally, national and regional HC organisations and agencies, academia and other public bodies involved in crisis management (e.g. civil protection departments).

FOI listed the following as potential DARWIN competitors: other institutes/universities publishing literature reviews on resilience, other DRS-7 projects, consultancy firms in Sweden and across the EU as well as research institutes, academia, and consultancy firms in Sweden and across the EU.

SINTEF listed the following as potential DARWIN competitors: Other DRS-7 projects and actors involved in ongoing standardisation activities, other software developers and providers of IT services for crisis management, other developers of serious games, other national and international events.

Other DRS-7 projects were thus the most commonly mentioned potential competitor. At the same time, the DARWIN partners of course see the other DRS-7 projects as DARWIN's closest allies. The multiple types of benefits from finding synergies, transferring knowledge and collaborating closely with the other DRS-7 projects was acknowledged and seen as indispensable.

Research institutes and universities were also listed as potential competitors by several partners, and so were national and EU-wide entities working with crisis management.

One risk that has been identified is that another group or consortium comes up with similar competitive solutions which would jeopardise the exploitation plans. The DARWIN partners, however, continuously monitor the state of the art and related projects for fine-tuning DARWIN results and keeping up the competitive advantage. The partners promote establishing liaisons with other projects to create win-win situations. In the final year of the project, more efforts will be made to form a concrete map of actors and bodies that surround DARWIN in the marketplace. This map will be based on the partners' newly acquired insights and drawn up of local, national and EU-level entities, identified in as much detail as possible.



4 Exploitation Environment and Context

This section outlines the internal and external environment in which the DARWIN exploitation strategy will operate. It will consist of a SWOT analysis of the DRAWIN project and an analysis of potential competitors to DARWIN.

4.1 DARWIN SWOT Analysis

This section describes DARWIN's strengths, weaknesses, opportunities and threats (SWOT) from the project partners' perspective.

A SWOT analysis constitutes a technique for understanding and evaluating the strengths, weaknesses, opportunities and threats of an organisation. Regardless of the context in which it is used, the SWOT analysis can help an organisation identify internal and external elements that are advantageous and disadvantageous in terms of reaching set objectives and achieving desired impact. It is used to help organisations succeed by utilising their abilities, potential and opportunities as well as by identifying their weak points, risks and threats and developing plans for how to overcome these.

The SWOT analysis exercise took place as part of the exploitation workshop organised in Linköping in March 2017, as mentioned in section 2.2.2 above. All nine partner organisations were represented at the half-day workshop (see Figure 4 on attendance) where a total 16 partners participated in the SWOT exercise.

To inspire and encourage the partners to think about possible strengths, weaknesses, opportunities and threats, they were presented with the example grid in Figure 3 below.

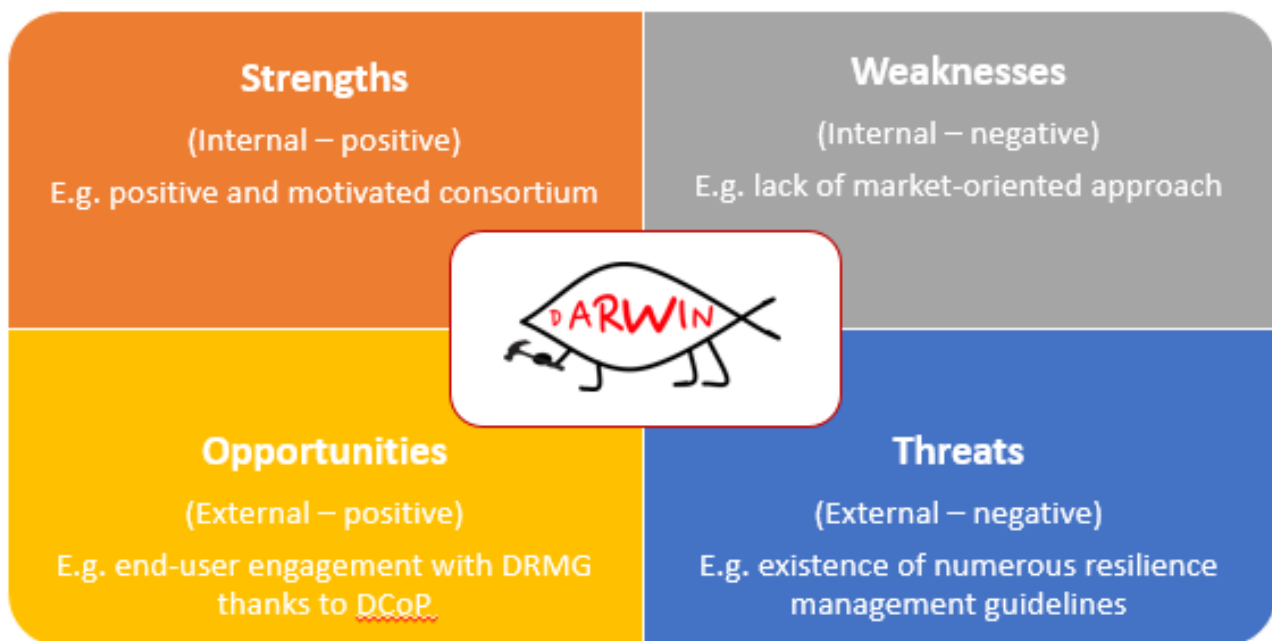


Figure 6: Example of DARWIN SWOT

At the start of the workshop, most partners stated that they had not yet actively reflected on the strengths, weaknesses, opportunities and threats of the project. They had had limited opportunities to reflect over DARWIN's exploitation potential, market opportunities and barriers or other elements in the environment affecting the project in commercial terms. Many partners therefore found the exercise challenging, and several



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of them stated that they are likely to have a clearer picture of the SWOT closer to the end of the project when the concepts and guidelines are more mature.

It can therefore be said that the DARWIN SWOT reflects the current views of the partners. These views are based on initial thoughts and reflections, and are bound to evolve during the final year of the project.

The following sections present an overview of the partners' perspectives on the SWOT. The elements are included in Table 9, Table 10, Table 11 and Table 12 as they were suggested by partners during the exercise. Some partners came up with elements individually whereas others brainstormed together. One challenge mentioned was the difficulty in thinking about the SWOT for DARWIN rather than the SWOT for their own partner organisation. Some elements in the exercise are therefore mixed: project (consortium) level and partner level and society level. Another challenge was determining which category certain elements belong in; these are presented as borderline cases in two different categories.

4.1.1 Strengths

Strengths include any internal unique advantages or resources DARWIN has as a consortium or expertise or know-how that makes DARWIN excel and perform better than others.

Strengths:	Any internal unique advantages or resources DARWIN has as a consortium, or any expertise or know-how that makes DARWIN excel and perform better than others
	DCoP maintaining engagement
	Validation – tested validated guidelines
	Cross-cutting issues – social sciences and humanities
	Good leadership – e.g. EB meetings sprints
	Organisational, societal solutions
	Cooperation between multiple disciplines and areas
	Multi-cultural work
	Good climate in the group/team
	Cooperation between domains
	Broad collective competence
	Multi-disciplinary team
	Point nation-wide simulation
	Crisis management capability
	Cross-fertilisation between ATM and healthcare
	Borderline strength/weakness: Scope of 'resilience'? Still unclear – articulate variety/diversity of resilience as strength!

Table 9: DARWIN Strengths

The following strengths were included in the discussion following the SWOT exercise:



D6.4-Plan for business and exploitation of results (preliminary)

‘Good climate in the group/team’ was included as a strength with the reasoning that team work within the consortium often is exceptionally close. It was stated that DARWIN includes a lot of voluntary collaboration; meetings and discussions not set out in the DoA but initiated by individual partners and held either bilaterally between partners or at consortium level, either face-to-face or online.

The strength **‘validation – tested validated guidelines’** was discussed as it was stated that the DARWIN methodology is tested and validated. The addressing of cornerstones, such as principles of validity and reliability, were seen as fundamental for this strength. This is important also in terms of viability for longer-term exploitation.

A comment made regarding the strength **‘cross-cutting issues – social sciences and humanities’** was that the importance of inclusion of SSH in Horizon 2020 is stressed by the EC, and this is something DARWIN is aware of and takes seriously. This was therefore considered a clear strength.

The DCoP maintaining engagement refers to the positive experience of the active engagement of the DARWIN Community of Practitioners. It was stated that many DCoP members are very devoted to the project and have attended the DCoP workshops repeatedly. This maintained level of engagement was considered exceptional in EU funded projects and therefore included as a strength.

Another comment made was about the DARWIN resource being **not just a ‘tech demo’ but something stronger and more tangible and applied**. Going beyond a technology demonstration and developing into a game changer was highlighted as a definite strength.

The multi-disciplinary team was also mentioned as a strength, and the benefits of a multidisciplinary approach were considered obvious. It was added that some benefits could be clarified even more to ensure maximum impact.

At present, it is too early to discuss the underlying rationale for each strength, considering the lack of maturity of the SWOT. A discussion and analysis of the reasoning and implications will follow once the partners have had a chance to refine their views and stance on exploitation. Reflections on partner vs. consortium level strengths will also be included in the revised version of the SWOT.

4.1.2 Weaknesses

Weaknesses include any internal disadvantages in comparison to others, elements in the consortium that leave room for improvement or are seen as internal obstacles to reaching set objectives.



Weaknesses:	Any internal disadvantages in comparison to others, elements in the consortium that leave room for improvement or are seen as internal obstacles to reaching set objectives
	Usually takes a lot of time
	Different ‘languages’ (understanding)
	There is no ‘implementation’ phase in this project
	Biased approach to resilience (Resilience Engineering vs. Engineering Resilience)
	Stakeholder analysis impact on content of guidelines
	Unclear if generic guidelines are extended or translated into applied guidelines
	Adaptation process of concept card to ATM/HC still quite weak/unclear how to do it – making evaluation and application
	Format and usability of cards from a practitioner perspective
	Borderline strength/weakness: Scope of ‘resilience’? Still unclear – articulate variety/diversity of resilience as strength!
	Borderline weakness/threat: Are we implementing the most important cards? How many percent of what resilience cover?
	Borderline weakness/threat: Full calendar: external/internal

Table 10: DARWIN Weaknesses

The following weaknesses were included in the discussion following the SWOT exercise:

It was stated that the **scope of the concept of resilience remains unclear**, and that there still are differences in the definitions of resilience between partners, which is something that needs to be worked out. This was mentioned as a borderline weakness/strength as it can be transformed into a strength once the scope is clearly defined.

A weakness echoed by several partners was **‘different ‘languages’ (understanding)’**, referring to the challenge within the consortium where individual partners or organisations use different ‘languages’ (in both the literal and figurative sense of the word) or ways or codes when referring to various concepts. This was said to involve a risk of misunderstandings and miscommunication and making understanding each other more difficult and weakening the consortium.

The weakness **‘Stakeholder analysis impact on content of guidelines’** was included to point out that stakeholder analyses and the implications of these for the guidelines need to be articulated better; a breakdown of stakeholders was said to be needed to describe and divide users into different categories (e.g. policy-makers, middle management and operational actors such as first responders at local, national and EU level on the one hand; EU decision-makers (e.g. in terms of standard-setting) on the other hand. Another aspect discussed in



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relation to this was the need for the development of a taxonomy at the end of the stakeholder analysis in order to define what the results look like.

‘Unclear if generic guidelines are extended or translated into applied guidelines’ was listed as a weakness as it was said to refer to the uncertainty (in March 2017) about whether the applied guidelines merely will be a translation of the generic ones or something additional; the need for clarification on this was seen as a weakness, but one that could be transformed into a strength when properly defined.

The format of the concept cards not being fully developed was another concern; a need for clarification here too was identified.

Another weakness raised during the discussion was that that **WP3 is slightly disconnected** from the rest of the work packages, and a need for finding more synergies was expressed. It was said that **some elements feel like add-ons (e.g. serious games/simulations)**. Some partners felt disconnected from and unfamiliar with the TORC (training for operational resilience capabilities) concept.

One partner expressed the concern that **no implementation phase is explicitly stated in the DoA** and that it therefore is unclear how to implement the outputs; the partner stated that this should in general be included in the proposal and that the implementation of pilots is not enough. It was said that the DoA sets out a procedure for how the guidelines should be adapted, but not for how they should be implemented. It was also said that only the pilot implementation is specified in the project plan. It was moreover stated that this is why EU projects typically end once the funding period is over.

At present, it is too early to discuss the underlying rationale for each weakness, considering the lack of maturity of the SWOT. A discussion and analysis of the reasoning and implications will follow once the partners have had a chance to refine their views and stance on exploitation. Reflections on partner vs. consortium level weaknesses will also be included in the revised version of the SWOT.

4.1.3 Opportunities

Opportunities include any external possibilities in the environment, elements that DARWIN can utilise to its advantage and elements that are or become available through changes in the market and in technologies, policies and patterns.



Opportunities:	Any external possibilities in the environment, elements that DARWIN can utilise to its advantage and elements that are or become available through changes in the market and in technologies, policies and patterns
	Many European large scale implementation
	Economic loss in the recovery
	Expanding risk management approaches to encompass business continuity and recovery from crises
	Better social / financial cost/benefit support
	Better crisis solution decisions
	Participants to the workshop included personnel involved in NASA study, SMR and CCRAAAFFFTING expressed interest on using workshop knowledge and DARWIN deliverables for their work.
	Transfer of existing resilience good practices from one domain to another
	DCoP experience of successes and failures of exploitation
	Opportunity to collect feedback (DCoP)
	Adopting guidelines
	Influence standards through participation to standardisation activities or building on relations with DCoP participants e.g. EUROCONTROL
	Networking with other domains
	Good cooperation – possibility for future projects
	Affect/help EU agencies increase capabilities (e.g. DG SANTE)

Table 11: DARWIN Opportunities

The following opportunities were included in the discussion following the SWOT exercise:

Adopting guidelines – success was included as an opportunity due to the partner view that the adoption of the guidelines creates a significant opportunity for success at both national and EU level.

The possibility to **influence standards and affect EU agencies and Directorate-Generals** was also mentioned as an important opportunity, especially in the field of health and safety.

One partner explained that NASA (the National Aeronautics and Space Administration) is interested in using the DARWIN results, and that bringing them out in the aeronautics and space domain therefore is a good opportunity.



Transferring best practices from one domain to another was stressed as another opportunity, e.g. aviation and healthcare was highlighted, and the opportunity for other domains to learn from these.

The opportunity to be able to continuously **collect feedback from the DCoP** and utilise the expertise and ideas of the DCoP members was also considered important.

At present, it is too early to discuss the underlying rationale for each opportunity, considering the lack of maturity of the SWOT. A discussion and analysis of the reasoning and implications will follow once the partners have had a chance to refine their views and stance on exploitation. Reflections on partner vs. consortium level opportunities will also be included in the revised version of the SWOT.

4.1.4 Threats

Threats include any external obstacles or changes in the environment; any elements that may hinder or cause trouble for DARWIN.

Threats:	Any external obstacles or changes in the environment; any elements that may hinder or cause trouble for DARWIN
	Not articulated what Darwin delivers and what needs to be done by others...to implement Darwin results (Explicit TRL!)
	Prioritisation of results not done – what are the needs that we fill with DARWIN?
	For the generic guidelines: Diversity of CI domains not articulated.
	The results become dust on the shelf
	Results will disappear in archives or the vast space of the internet
	Results may be a bit academic
	WP2: The ‘How’ needs to be clear
	Difficult to reach out with the results to users
	For domain-specific guidelines: national differences impact concept cards use
	DRMG too complex, not user friendly

Table 12: DARWIN Threats

The following threats were included in the discussion following the SWOT exercise:

A fear about the **DRMG being too complex or not user-friendly** was expressed as a threat, but discussed as a weakness as well. It was said that if the consortium is unable to simplify the guidelines so that they are understood by the relevant stakeholders, this inability forms both an internal weakness and a threat to the project’s exploitation potential.

Another threat was identified in the **literature review**, which was seen as mainly focusing on particular types of resilience, more on resilience engineering and community engineering than on engineering resilience. There was a concern that this may be a bit biased (other concepts – flexible labelling).



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One partner stressed the need to explicitly state **what DARWIN will deliver and what implementation will look like** (e.g. TRL). It was stated that if these are left implicit, this will constitute a threat to the success of the project.

National adaptation needing more thought was raised as another source of concern. It was said that discussions on this have started, but that a failure to address the issue would result in a threat. The same was said to be true for **critical infrastructure domain knowledge** needs to be addressed.

Another area where the partners observed a need for more explicitness was **the ‘how’ in addition to the ‘what’ of the guidelines**. This, some partners said, needs to be stated more clearly in order for the vagueness not to become a threat.

Partners also identified a **need for prioritisation of results** in order to avoid any possible threats in this area.

At present, it is too early to discuss the underlying rationale for each threat, considering the lack of maturity of the SWOT. A discussion and analysis of the reasoning and implications will follow once the partners have had a chance to refine their views and stance on exploitation. Reflections on partner vs. consortium level threats will also be included in the revised version of the SWOT.

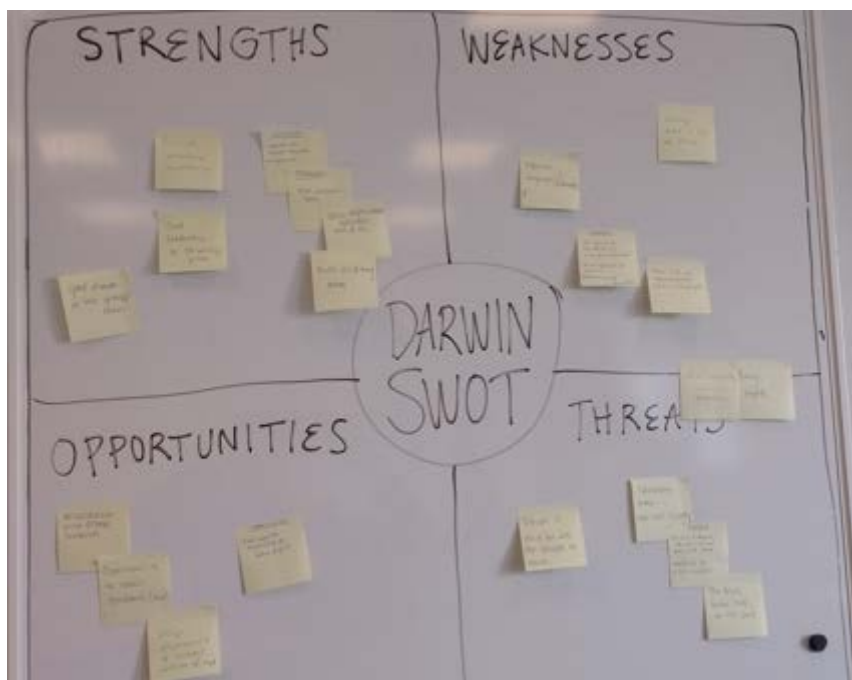


Figure 7: Partner contributions to the DARWIN SWOT at Exploitation workshop (Group 1)



Figure 8: Partner contributions to the DARWIN SWOT at Exploitation workshop (Group 2)

4.2 Other projects and the DARWIN context

4.2.1 Cooperation with other DRS-7 projects

This section analyses the objectives and expected outputs of the other DRS-7 projects and how DARWIN fits in to the overall context.

The other projects on resilience for Critical Infrastructure (CI) funded under the 2014-DRS-7 H2020 call are IMPROVER, SMR, RESILENS and RESOLUTE. Together with DARWIN, these projects will contribute to European resilience guidelines and provide methods and tools.

All five projects have their own but closely related objectives, so from an exploitation perspective, it thus makes sense for the consortia to find common goals and build synergies rather than work in isolation. They are also each other's target audiences.

The five projects have already started collaborating closely, and more joint dissemination and exploitation activities are planned for the coming year. These include workshops, symposia etc. where the focus is on dissemination that enables and facilitates exploitation.

The following collaborative activities have taken place to date:

- Initial face-to-face meeting facilitated by the European Commission including all DRS-7 and DRIVER (Ivonne Herrera, SINTEF; Rogier Woltjer, FOI participated)
- Joint teleconferences and face-to-face meetings based on partner availability – chairing and minute-taking responsibilities are shared among participants;
- Joint webinars, two of which have been organised by DARWIN;
- Common DRS-7 presentation 4th Meeting on the Community of Users on Safe, Secure and Resilient Societies 22nd June 2016, Brussels (Presented by DARWIN, input by all DRS-7, CARR provided map on European DRS-7 coverage 2016)



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- All DRS-7 projects were represented at the European Safety and Reliability Conference (ESREL) 2017 (where a special session was coordinated by DARWIN);
- DARWIN participated in SMR workshop in 2016; Matthieu Branlat (SINTEF) presented;
- All DRS-7 projects participated in a standardization workshop organised by the SMR project;
- DARWIN participated in the JRC-Improver workshop in May 2017; Luca Save (DBL) presented;
- All DRS-7 participated in event in Italy in 2016; Luca Save (DBL) presented;
- Joined newsletter organized by SMR project, input from DARWIN provided December 2016
- The communications partners of all DRS-7 projects have started running monthly teleconferences (started in May 2017, i.e. M24, chaired by Clara Grimes from SMR)

The following collaborative activities are planned for the coming year (M25-M36):

- All DRS-7 projects will participate in a Community of users (CoU) event in September 2017;
 - We will be taking a first step towards achieving this at the CoU meeting in September. A proposal for a common event has been submitted by Emanuele Bellini and Sasa Jovanovic and has been accepted. The proposal is for a 2.5 day event which should close with interactive discussion between the attendees. Emanuele has approached Marianthi Theocharidou about a special issue of the journal which she is an associate editor of.
- All DRS-7 projects will prepare a joint White Paper presenting results from all five projects, including future directions (discussion ongoing, Minutes prepared by IMPROVER project, David Lange summary listed below);
 - The aim is to describe, based on the results of the different projects, how the work could be done in the future – combining the guidelines is being discussed/considered. This would have input to the future exploitation of the project results.
 - One outcome of the document will be extending the user community participation for each of the projects.
 - The idea is to have the white paper
 - present the results of the 5 projects in an integrated way;
 - comprise 5 sections – each explaining in brief the results of the projects, and an additional section would describe how the results could complement each other;
 - the intention of the document would be to influence policy makers and to present an example of collaboration possibilities between 5 projects;
 - comprise an introductory section, possibly presenting the integrated view; as well as an ontological discussion, possibly as an appendix.
 - The document should not be overly technical. It should be seamless, simple to understand and to digest.
- The communications partners of all DRS-7 projects are coordinating a final event (discussion ongoing);
 - Finding synergies in joining forces for a final event and tag on to an existing event that attracts key stakeholders;
 - The aim is to organise the event in conjunction with the Open European Day at the Resilient Cities 2018 conference in Bonn on 24 April 2018 (<http://resilient-cities.iclei.org/>);
 - The plan is to have the programme decided by a programme committee which will be set up with representatives of each project;
 - The following tasks should be divided and shared as applicable between the projects: 1) registration form, abstract submission and conference website 2) visual identity 3) participant



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- invitations 4) management and communication with participants 5) logistics and catering 6) promotion and marketing 8) note-taking at the event and 8) follow-up report;
- It will be a one-day event with parallel sessions organised;
- Other options as the event venue will also be considered, e.g. Brussels, Dublin or Lyon;
- The communications partners of all DRS-7 projects will continue running joint monthly teleconferences to plan the conference and share main updates;
- A joint newsletter produced by all DRS-7 projects will be published in August (through the SMR website);
- A joint workspace for continued collaboration is being discussed;
- All DRS-7 projects have agreed to promote each other's' results, combine contact lists and networks, circulate dissemination and exploitation plans and share each other's' guidelines;
- DARWIN shared the link to the DARWIN Wiki with the other projects;
- All DRS-7 projects collaborate on the development of taxonomies.

These joint actions will both individually and combined have an advantageous effect in terms of the projects' exploitation prospects. The actions will keep the projects up-to-date with each other's' progress, help them complement each other rather than duplicate effort and create overlap. They will build synergies and promote knowledge transfer in order to achieve and exceed the desired impact.

4.2.2 Cooperation with other projects

In addition to working together toward common goals with the other DRS-7 projects, DARWIN cooperates or has shared insights with the following projects:

- FP7 projects: TIPS, DRIVER, SCALES, TORC, BRIDGE, TACTIC and CascEff;
- H2020 projects: ENLIGHTEN and Future Sky Safety
- National projects: BUILDING SAFETY and CCRAAAFFFTING

4.2.3 Impact of DARWIN results on future EU funded resilience projects

Specific results may be useful to future projects, including H2020 projects and key findings could be passed on to other research and innovation projects, including EU level ones. Results and know-how from DARWIN will therefore be exploited both within new national and international projects, as well as contract based projects from industry.

Several partners mentioned new EU funded research projects as part of the impact of DARWIN. The interest is to bring DARWIN developments closer to market applications.

The impact of DARWIN results on future EU funded resilience projects will be expanded upon in D6.8.



5 Key performance indicators and achieving impact

This section outlines the plan for harnessing the impact potential of the exploitable results and for measuring the success of the exploitation efforts.

5.1 Exploitation KPIs

DARWIN's success at reaching targets related to the exploitation objectives will be evaluated using exploitation key performance indicators (KPIs). The main objectives include the successful adoption of results and benefits within emergency services, research communities and policy advisers and ensuring the longevity of the project's results through either policy uptake, further research or commercial applications.

KPIs will be set at multiple levels to ensure that the exploitation potential is considered thoroughly. At this stage it is, however, too early to formulate specific KPIs as the project partners are only starting to think about the exploitation dimension. The KPIs will be defined and developed as the exploitation targets become clearer over the course of the final year of the project. They will be presented in D6.8, the final plan for business and the exploitation of results.

Exploitation KPIs that will be included and formulated as measurable targets include:

- Share of participating SMEs introducing innovations new to the company or the market;
- Growth and job creation in participating SMEs;
- Number of publications in peer-reviewed high impact journals and number of joint public-private publications, opening doors to further and broader research activities;
- Number of patent applications and patents awarded;
- Number of prototypes and testing activities;
- Share of publications from EU funded projects which are among the top X% highly cited;
- Number of new products, processes, and methods launched into the market;
- Number of institutional change actions promoted by the project;
- Number of institutions or entities adopting the guidelines;
- Number of business ideas incubated;
- Number of start-ups or spin-offs created.

5.2 Exploitation impact

The online community will be crucial in terms of harnessing the impact potential. The social media platforms where DARWIN has a strong presence, i.e. Twitter, YouTube and LinkedIn, will be utilised to strengthen the online community of active participants in DARWIN. This will create momentum for the exploitation of project results. The social media network and the project web site will keep expanding and continue beyond the life of the project. They will be maintained and developed by end users and members of the DCoP. This will have a ripple effect and extend the network both horizontally and vertically to include all crucial groups of stakeholders at regional, national and EU-level. Partners will support this activity through new resilience projects and linking DARWIN to the Resilience Engineering Association.

The impact of the DCoP forum, which brings together infrastructure operators, policy makers and other relevant stakeholders, is set out to be significant. The forum will have a lifetime that will extend well beyond the end of the project. As the DCoP will act as a widely accepted “authority” on resilience, the impact potential



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created through the forum is remarkable. The forum will act as a hub leading the evolution of the guidelines and initiating resilience innovations and other exploitation activities.

The efforts to achieve impact are emphasised on the fronts where the project carries out external collaborations, including the research community, key stakeholders, ongoing European and national projects on topics related to emergency and disaster management and resilience and regulatory and legislative authorities. The expansion of these fronts will naturally have a knock-on effect on the activities related to gaining impact.

A precise impact plan will be included in D6.8. It will define a strategy for further development and exploitation of the research and the project results. It will demonstrate how the expected impact of the project will be realised and how the societal, environmental and economic benefit of crisis response will be strengthened across the EU.



6 Timeline for exploitation implementation

This section includes a timeline for the implementation of key exploitation activities. The timeline outlines activities to be carried out in the final year of the project as well as relevant deliverables and milestones in year three (M25-M36). It lists activities that are crucial in terms of ensuring successful exploitation. Many actions are continuous, i.e. they will be ongoing until M36 and beyond. The timeline is a living table and will be modified as the exploitation plans are defined in more detail in the coming months.

T6.2 Exploitation	M25-27	M28-30	M31-33	M34-36	Partners involved
SWOT analysis V2					ALL
Exploitation grids V2					ALL
Exploitation workshop V2					ALL
DCoP workshop 3					ALL
Final Event with DRS-7 Projects in Bonn in April 2018					ALL
D6.7 Dissemination, exploitation and external collaborations strategy [final of D6.1]					ALL
D6.8 Plan for business and exploitation of results [final]					ALL
MS6 Exploitation activities launched					ALL
Continuous recruitment of DCoP members to facilitate exploitation					
Pitching exploitation events, e.g. workshops with external stakeholders					ALL
Continuous review and update of communications and dissemination actions to support exploitation					CARR
Meetings with key stakeholders and influencers					ALL
Plan exploitation actions for after end of project in M36					ALL
Monthly teleconferences with DRS-7 projects to plan joint exploitation activities					ALL

Table 13: Exploitation timeline



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In order for the exploitation potential to be realised, it needs to have a strong foundation. This foundation will be built and developed through a second SWOT analysis exercise, a second version of the exploitation grids and a second exploitation workshop. This requires to commitment and input of all project partners. All individual and partner-level views and perspectives are indispensable to form a solid exploitation structure for the consortium.

A third DCoP workshop will be held towards the end of year three. The efforts continue to encourage DCoP members to get involved in exploitation activities and to use their valuable networks to function as multipliers and facilitators of exploitation in their respective fields. By actively involving stakeholders and end users through the DCoP, DARWIN ensures relevance and acceptance of the guidelines within different domains and sectors, which fosters uptake and exploitation of the project results at local, national, and the European level. The DCoP will support developments of the project as well as benefits from its results after the lifetime of the project.

CARR as the dissemination and partner will review and update communications and dissemination actions that will enable and support exploitation throughout DARWIN's final year. CARR will also, together with all partners, plan exploitation actions that will continue after the lifetime of the project. All partners are also expected to attend stakeholder events and meet with key influencers throughout the final year.

As mentioned in section 4.2.1, all DRS-7 projects are planning a final event for April 2018 (M35), which will serve as a springboard for a broad range of exploitation possibilities. Up until then, the DRS-7 projects will cooperate actively to foster opportunities to realise the combined exploitation potential of the projects.



7 Conclusions and next steps

This section draws conclusions and lessons learned from this deliverable, and outlines key steps until the submission of the final draft of the DARWIN exploitation strategy.

This deliverable has described the preliminary plan for business and exploitation of results for DARWIN. It has presented the project's key exploitation objectives and methodology, and described the current exploitation landscape surrounding DARWIN. It has introduced the SWOT analysis exercise that involved all partners and that was carried out in M22. It has briefly outlined the results of the analysis views of the partners on DARWIN's strengths, weaknesses, opportunities and threats, and identified the main competitors from the partners' point of view. It has outlined the relationship between DARWIN and the other DRS-7 projects, and listed the joint actions that will facilitate exploitation in the final year of the project. It has presented the DARWIN exploitation strategy including key exploitable results, exploitation potential, partners' interest and role in exploitation as well as relevant target sectors, audiences, stakeholders and markets. It has outlined the impact that the project is set out to have and listed the types of exploitation KPIs to be formulated. Finally, it has presented the timeline for the implementation of the exploitation activities.

The next steps start with involving all partners in the joint effort of developing the final exploitation strategy to ensure successful exploitation of the results of the project. As mentioned earlier, all partners have committed to contributing to and engaging in exploitation activities to achieve this objective. The current version of the exploitation strategy contains gaps that need to be filled in the coming months. It became very clear that the partners have not yet developed a clear view of the exploitation landscape surrounding the project. Most partners feel that they will be more prepared to contribute to developing the exploitation strategy and plan towards the end of the project the concepts and guidelines are more mature. The next steps will involve encouraging the partners to start thinking about exploitation in a strategic way to be able to formulate their answers to key questions related to exploitation. These include questions about possible competitors, expected added value, possible market barriers, the timeline for exploitation, impact on the portfolio and IPR measures.

In terms of concrete actions, a second exploitation workshop (online), a second round of exploitation grid and SWOT analysis exercises will be organised. These will create the opportunity for partners to reflect on their earlier input and that of the other partners, to discuss and analyse their approaches and to develop more mature and in-depth approaches to all aspects related to exploitation. Partners will be supported in the exercise where the aim is to facilitate the development of a better understanding of the players in the field and the marketplace.

One of the lessons learned is that it is crucial to open up the discussion on exploitation with partners early on in the project. It takes time to develop a profound understanding of the full spectrum of exploitation and to formulate a take on it. It is therefore important to encourage partners to start thinking about their stance as early as possible.

The next steps also include sustained and expanded collaboration with the DCoP, whose significant experience and expertise are set out to contribute to resilience innovations and other exploitation activities. The recruitment of DCoP members and the work on the integrated DCoP forum, Wiki and website will continue, and it will facilitate communication and sharing of best practices, which is essential for successful exploitation. Through active involvement of stakeholders and end users through the DCoP, DARWIN will ensure that the guidelines are relevant and accepted within different domains and sectors. This in turn will foster uptake and exploitation of the project results, both in the final year and after the project, at local, national, and the European level.

The key messages regarding the benefits of the guidelines will also be reviewed and disseminated across all relevant sectors to ensure that exploitation and use of the guidelines occurs both within the ATM and health



D6.4-Plan for business and exploitation of results (preliminary)

sectors and beyond. It will also be ensured that the developed solutions are both validated and viable for longer-term exploitation.

The steps to be taken after the lifetime of the project and the final exploitation strategy, which will be flexible and scalable, will be presented in D6.8 Plan for business and exploitation of results [final]. It will incorporate a tailored set of messages targeted at specified audiences in the broader emergency and disaster management and research community and other key stakeholders, taking into account their needs and concerns.

The DARWIN consortium has the required skills, knowledge and experience to ensure maximum impact is achieved. With the commitment and contribution of all partners, successful exploitation and significant impact of the guidelines can be ensured.

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