Horizon 2020 Framework Programme

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Project No.: 825429 SocketSense

SOCKET SENSE

A TAILORED FIT OF THE FUTURE

Advanced sensor-based design and development of wearable prosthetic socket for amputees

Start date of project: 2019-01-01 Duration: 36 months

Deliverable D7.3:

Plan for the Dissemination and Exploitation of Results

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Executive Summary

Dissemination, communication and exploitation is an essential part of the SocketSense project. The goal of the project is to develop an innovative advanced sensor-based socket system and in order to reach as many patients as possible is it critical to have an effective dissemination strategy and to prepare the commercial uptake of the novel socket system. The two sections which form this deliverable outline the Dissemination Plan and the Exploitation Plan of the SocketSense project.

Section A, the Dissemination Plan, defines the dissemination strategy of the project by describing the main objectives of the dissemination activities and the five-fold approach that will be followed:

1. Elicitation of topics of dissemination
2. Identification of target audience
3. Selection and usage of the most appropriate methods and tools
4. Establishment of a well-managed dissemination task plan
5. Monitoring/evaluating the progress of the dissemination activities

Additionally it presents the target audience for the dissemination activities (Academic & research community, Industry, Standardization Bodies, Regulators, framework builders, and policy makers, EU Projects in similar domains, end users) and it presents the **dissemination tools** (project brand identity and a targeted set of or electronic and printable communication materials) and the **dissemination channels** (journals, conferences, workshops and other events) that will be used in order to reach the target audience. Moreover the dissemination plan outlines the responsibilities of the partners regarding the dissemination activities of the project and it presents the Key Performance Indicators (KPIs) that will be used in order to understand the reach and sustainability of the project's results. Dissemination activities are going to be performed during the whole project lifetime. This plan is flexible and will adapt the dissemination strategy as needed, taking into account both short and long term activities.

Section B, the Exploitation Plan, will provide a summary exploitable results of the project and it will also specify what type of exploitation is foreseen after the project's end for each result. Additionally it examines the risks and potential obstacles for exploitation in six categories (Technological, partnership, market, IPR/Legal, Financial, Health and Safety/Environmental risks) and it analyses how to address them. Once the risks are pointed out, we will evaluate the likelihood of their occurrence and estimate the impact they might have on the project, and at the same time define actions which could prevent the identified risks. Moreover in the framework of the exploitation plan a market assessment will be performed to properly evaluate the prospect position on the market of the SocketSense exploitation results.

1. Introduction

1.1 SocketSense Project in a nutshell – objectives and expected impact

SocketSense is an EU funded project aiming to develop an innovative advanced sensor-based socket system that will enable comfortable socket manufacturing, tailored to patients' needs. The cutting-edge technology will use runtime monitoring of residual limb tissues evolvement by collecting data through advanced sensors embedded into the socket.

With SocketSense, prosthetists will be able to achieve a good-fit socket within the same day, when the patient needs a new one, compared to current practices that require a lot of trial and error and takes too much time. Moreover, this technique will apply to all lower limb amputees (above knee and below knee).

Technical Objectives:

1. To design, develop and manufacture an innovative multi-touch and multi-functional quantum technology based super sensors (QTSSTM) - a patented technology developed by LussTech (project partner in SocketSense) - to be embedded in the prosthetic socket for the patients to wear in everyday life.
2. To develop advanced biomechanical algorithms for the analyses of residual tissues and dynamic sensor data to enable the design and manufacture of prosthetic socket optimized for comfort.
3. To develop data communication strategy for data collection, transmission, analysis and for the output to be accessed automatically by the prosthetic clinics in order to reduce lead time further.
4. To develop a unified software system for prosthetic clinics.
5. To carry out preliminary clinical trials to validate the whole system.

Commercial Objectives:

1. To develop an exploitation and a business plan for successful implementation and market transfer of the innovative SocketSense system
2. Dissemination of the project outcome to at least 4 international events before month 24. And dissemination/awareness campaign and knowledge transfer events (at least 6 events) for medical and healthcare stakeholders from the second year of the project till the end
3. Compliance and Implementation of governing medical certifications, regulations and standards prior to commercialization and market uptake.
4. To be in compliance with relevant standards, regulations and certification for SocketSense system

The foreseen impact of the project can be summarized in the following 5 points:

IMPACT 1 - Technology leaps related to improved performance (functionalities, autonomy, reliability, manufacturability and cost…) and contributing to European leadership in large area, flexible and wearable electronics

IMPACT 2 - The emergence of new products based on the combination of printed and large area processed electronics

IMPACT 3 - Increased R&D cooperation in technology device development and related manufacturing processes

IMPACT 4 - Developing further manufacturing capabilities in Europe

IMPACT 5 - Creating new opportunities for digitisation in other sectors and including new actors in the ecosystems (designers, artists…)

The goals of the project will be achieved through the seamless collaboration of the project partners:

2. Section A: DISSEMINATION PLAN

2.1 Dissemination Strategy

The main focus of the dissemination strategy is to identify and consolidate the activities to be implemented, for maximizing the impact of the project and for promoting commercial and other exploitation of the project results.

The main objectives of the dissemination activities are:

1. **To raise public awareness** about the project, it's expected results and progress and the novel sensor-based socket system, within defined target groups using effective communication means and tools
2. **To exchange knowledge**, best practices, and experience in general with projects and groups working in related fields (medical devices, advanced sensors and materials, prosthetics etc.) in order to join efforts, minimize duplication and maximize potential.
3. **To disseminate the fundamental knowledge**, methodologies and technologies developed during the project
4. To pave the way for a successful commercial and non-commercial exploitation of the project outcomes related to the innovative socket system.

The dissemination activities will:

- ensure easy access to information and results for all stakeholders,
- ensure engagement with all stakeholders and provide collaboration tools,
- reinforce links among the SocketSense project and other relevant projects and networks,
- involve the groups targeting the challenges addressed by SocketSense through key events,
- provide and disseminate relevant documentation and information about the project through specific channels.

Our dissemination strategy is based on the following five 5 pillars:

1. Elicitation of topics of dissemination (**what will be disseminated**)
2. Identification of target audience (**who will most benefit** from the project results and **who would be interested** in learning about the project findings)
3. Selection and usage of the most appropriate methods and tools (**what is the most effective way to reach the target audience**)
4. Establishment of a well-managed dissemination task plan(**when dissemination will take place**)
5. Monitoring/evaluating the progress of the dissemination activities (**what it the impact of the dissemination activities**)

In order to achieve the overall vision and goals of the project for maximum impact, we follow **a threefold approach**, consisting of making results and knowledge available (dissemination), promoting research results and the project in general (communication) and engaging stakeholders (collaboration and engagement).

We progressively increase communication and dissemination activities as results progress over the lifetime of SocketSense, ranging from the creation of the project's identity, to

the creation of constructive conditions for wider engagement, and to the establishment of long- term sustainability mechanisms towards the end of the project. The process is illustrated in **Figure 1**.

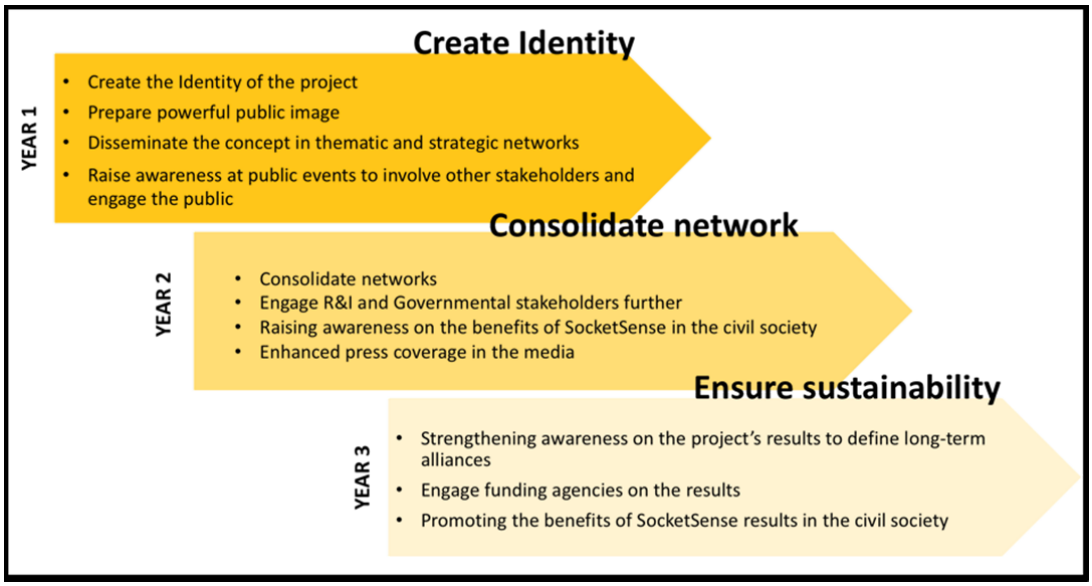

Figure 1: Approach of dissemination strategy

In the following table we categorize the foreseen activities related to WP7, for the first year, in relation to the contents of the above illustrated strategy.

Table 1 Dissemination activities (per year)

Year 1	Main Scope: CREATE IDENTITY
Approach	Activities
Create the identity of the project	•Drawing of Strategy and plan of Communication and Dissemination [M6] •Connect Project with Social Media [M4] o LinkedIn Group •Website is online [M4] (www.socketsense.eu) •Identification and update of external webpages
Prepare powerful public image	•Connect Project with Social Media [M4] •Preparation of Brochure, and Project Communication material (Templates, logo, presentations) [M6] - **D7.1**
Disseminate the concept in thematic and strategic networks	• European stakeholders, as well as relevant journals, magazines and Horizon 2020 projects/calls (for further cooperation), have been identified. • Appropriate communication and advertising channels have been

	identified • Open access publication guidelines have been created (including a list of targeted journals and conferences). • An open access and open research data pilot questionnaire has been created and sent out, and answers to the questionnaire have been gathered and analysed. • Release of 1st Newsletter [M6]
Raise awareness at public events to involve other stakeholders and engage the public	• Participation in targeted event (a list with the events where members of the SocketSense consortium participated or plan to participate can be found in Table 9) • The work towards organising specialist/international workshops have been started through contacts with conference committees.

For Year 2 and 3 Activities will be updated in M12 and M24.

2.2 Targeted audience

The Dissemination activities of SocketSense must be customized in order to reach the target audience more effectively and to utilize the available channels and tools as efficiently as possible. In order to achieve this SocketSense dissemination strategy is divided into two segments, the internal and external, which are presented below.

2.2.1 Internal Communication

As described in the following sections, we use different tools in order to develop an effective internal communication strategy. This strategy will help to ensure a constant and effective exchange of information between the partners as well as an efficient and coordinated management of the project. The overall aim is to keep all the partners informed on project developments, progress of achievements, and/or accomplishment of objectives.

Table 2 Internal Communication Plan

WHO	WHAT	WHY	HOW
SocketSense Partners	• Be aware of the common goals of communication and dissemination and commit to them • Plan, share and coordinate activities proactively • Follow the internal procedures	• To support them in consolidating partnership and network creation • To facilitate project management • To coordinate common activities	• Shared workspace, online and physical meetings, mailing, website • Presentations, emails, phone calls, deliverables,

			newsletters
EC project officer	• Ensure visibility of project and its results • Highlight the impact of communication and dissemination	• To support bi-lateral communication between Project Officer and Project Coordinator	• Central milestones and results • Annual reports • Project reviews
Partner Organizations	• Ensure a long lasting impact of outcomes	• To engage them in building collaboration • To integrate their perspectives in the definition of research and innovation areas of joint interest, to inform them on IP requirements • To raise awareness of the benefits	• Internal meetings, internal website, impact assessment, Presentations, information material, newsletters

2.2.2 External Communication

External communication activities are targeting the stakeholders outside SocketSense to achieve the following objectives:

- To facilitate the sharing of project's results and outcomes, activities, project's events, and other project's information
- To invite relevant industrial, academia and clinical stakeholders to interact with SocketSense as external sources of information and discussion players
- To further engage them in dissemination events (e.g. raising awareness events, brokerages, roundtables)

In order to direct our dissemination activities more efficiently and to be able to maximize the impact of this project, we have identified 1. the audience that is interested in the efforts of the consortium and the scientific results of the project; as well as 2. the audience that can play an important role in the exploitation of those results. Additionally we have further identified the stakeholders who can have a direct effect on our effort to develop the envisioned socket system. The target audience and their motivation to learn about the project and the reasons to get them involved in the project are summarized in the table below:

Table 3 Categories of Targeted audience of SocketSense Project

Types of Audience	Description	Motivation
Academic & research community	This group includes research communities working on prosthetics as well as on the scientific and technological areas related to the overall framework of the project. Scientific contributions of SocketSense are particularly interesting for researchers working in the fields of wearable technology, AI, biomechanics, edge-computing, etc.	• Become aware of the results and innovation generated by SocketSense that can benefit their own research. • Stay up to date with the state of the art in the area of prosthetics.
Industry	SocketSense is of close relevance to organizations active in the healthcare and medical devices industry but also in different industry sectors like flexible sensors, medical IoT, smart data analytics and clinical tools, etc. This group includes companies (large corporations, SMEs and startups) that are developing integrated solutions in the area of prosthetics or technologies relevant to this field.	• Industrial players want to stay up to date with the state of the art in the area of prosthetics or in areas like AI, sensor technologies, data analysis etc. • Create connections with industrial players that can play a part in the exploitation of the results of the project. • Receive critical input that might affect the design of the socket system.
Standardization Bodies	This group includes Standardization Bodies that develop the technical standards related to the needs of amputees.	• Standardization Bodies can provide consultative advice on pre-standardization procedures (when the technology reaches a suitable TRL).
Regulators, framework builders, and policy makers	This is a wide group encompassing authorities, representatives and associations, Ministries, and Public Administrations at national and international level.	• Receive critical input regarding the regulatory compliance of the socket system. • Inform them about the results of the project and give critical input for future regulations and policies
EU Projects in similar domains	This group includes EU projects in the area of prosthetics, AI, sensors, data analysis and more.	• Avoid overlaps in scientific research • Identify joint activities that will increase the impact of the projects
End users	This group includes Hospitals, Rehabilitation centres and Orthopaedic Prosthetics Clinics and amputees	• Validate our assumptions regarding the design of the novel socket system • Inform end users about the innovations of the socket system developed in the framework of the project and how it can improve the quality of life for amputees

The main aim is to maximise the involvement of the targeted audiences in order to let them closely follow SocketSense developments, gather their feedback and engage them into the SocketSense activities.

As explained in Section 2.1 Dissemination Strategy, our dissemination and communication activities will be carried out in three phases; the involvement and engagement of stakeholders will follow this approach.

In Year 1, where no solid results are available yet, dissemination efforts will be mainly geared towards maximising the project's visibility among the stakeholders. Providing information about the project concept, expected results and benefits will make sure that the project is known by relevant stakeholders, scientific community and end users.

The dissemination tools that will be primarily used in the first year include project website, social media, promotional material (poster, flyer), presentations & attendance in conferences and workshops related to prosthetics, medical devices, wearable technology, AI, biomechanics, sensor technologies.

During the second Year of the project, scientific & technological findings and partial project results will be disseminated. In this phase, stakeholders will be more engaged. Therefore, dissemination will be more focused and targeted, through clustering activities, discussions, social media posts, press releases, newsletters, publications and participation in relevant conferences and exhibitions.

It will be of utmost importance to gather the feedback and insights of stakeholders, as this will help to validate early and overall project results and to improve the work done in the project. Therefore, SocketSense will organise two workshops, targeting medical and healthcare professionals both from the scientific and industrial community.

In the third (last) year of the project, the main focus will be to disseminate more mature project results, strengthen awareness on the SocketSense results and to facilitate the exploitation of results. The dissemination activities will also aim at attracting potential users for the SocketSense technology and promoting the benefits of SocketSense results in the civil society. Accordingly, results will be published in related scientific journals, conferences, workshops, exhibitions and trade fairs.

In the last project period two workshops will be organised, where the project results will be demonstrated to interested stakeholders and end users (hospitals, rehabilitation centres, O&P clinics and patients), to discuss future work and to assess the sustainability of the project results. In M36, an international workshop will be also organised and will serve as the main dissemination event as well as promotional tool for the SocketSense achievements and results. The final event will aim to invite stakeholders from all partners' countries and beyond. In this event the end users of the SocketSense project, research communities working on prosthetics, healthcare and medical devices industry representatives and policy makers will be invited to participate.

The table below summarises how and when we intend to contact and engage with the identified stakeholders.

Table 4 Stakeholder engagement matrix

Type of communication	Objective	Type of targeted stakeholder	Timeline
Website	Major hub for dissemination Results presentations Communication of project news & events	All stakeholders	Constantly Updates every 2-3 months
Social media – LinkedIn group	Awareness creation Establish two-way communication with the targeted audience	All stakeholders	Updates based on project developments
Dissemination toolkit (flyer, poster, presentation)	Awareness raising, creating the visual identity, message diffusion	All stakeholders	Distributed continuously at conferences and project workshops
Newsletter	Regular updates on project progress, activities and publications Made available on the project website, sent out to registered stakeholders	All stakeholders, especially project targeted stakeholders	Periodically Month 6, Month 12, Month 18, Month 24, Month 30, Month 36
Conferences, workshops and exhibitions participation	Awareness creation Networking and collaboration with relevant stakeholders and other projects Engagement of user groups, as well as wider academic and industrial community Methodology presentation/ validation Disclose SocketSense results to support the exploitation of results	Communities of users and experts, core community of SocketSense ecosystem, academic & research community, other EU projects, general public	Continuously, as per the identified events in Table 8
Scientific papers and publications	To share the research results with the scientific community Knowledge diffusion to the scientific community	Research / Academia	As appropriate, based on project phases and results
Press and news release, articles	Awareness creation Communicating significant project developments, milestones, important news and announcements about the project	All interested stakeholders	Periodically based on the project developments and results

Type of communication	Objective	Type of targeted stakeholder	Timeline
Project Specialist Workshops organisation	Consultation, brainstorming, discussion and validation of SocketSense results and achievements Brainstorming	Relevant scientific and industrial community	Month 18 Month 30 Month 36
Project Exploitation Workshop organisation	To disclose SocketSense results to support the uptake of results Knowledge transfer	Communities of users, medical and healthcare stakeholders	Month 24 Month 34 Month 36
Clustering activities and liaising with R&D projects with similar topics	Effective information exchange between related projects, disseminate best practice Alignment of activities among the relevant projects	EC, national and other relevant projects	Continuously, as appropriate
Event toolkit (flyer, poster)	Awareness creation and message diffusion	All stakeholders	Distributed at events
White papers	Results presentation Information and knowledge diffusion Communicate the benefits of SocketSense	Communities of users and experts, core community of SocketSense ecosystem	M18, M30

Table 5 displays some important stakeholders that have been identified by the project partners and the communication tools used. These stakeholders will be targeted during the duration of the project in order to secure their involvement. Table 5 will be updated regularly during the project, for instance using the already identified stakeholders to identify other, similar stakeholders in other geographical areas.

Table 5 Important Stakeholders for the SocketSense project

Name of organization	Type of stakeholder	Type of communication	Website
Academic Health Science Network	Ecosystem / Community / Network Public Body / EU	SocketSense Newsletter, Press Release, Invitation to SocketSense Major International Workshop	Link
Clinical Research Network	Ecosystem / Community / Network	SocketSense Newsletter, Press Release, Invitation to SocketSense 1st and 2nd Specialist Workshops,	Link

Name of organization	Type of stakeholder	Type of communication	Website
		Approached for organising Consultation Workshops	
National Institute and Health and Care Excellence	Ecosystem / Community / Network Public Body / EU	SocketSense Newsletter, Invitation to SocketSense 1st and 2nd Specialist Workshops, Approached for organising Consultation Workshops	Link
NHS England	Policy Maker Public Body / EU	SocketSense Newsletter, Invitation to SocketSense 1st and 2nd Specialist Workshops, Approached for organising Consultation Workshops	Link
SAMFYRE	Conference, Ecosystem / Community / Network	SocketSense Newsletter, Invitation to SocketSense 1st and 2nd Specialist Workshops, Approached for organising Consultation Workshops	Link
SERMEF	Conference, Ecosystem / Community / Network	SocketSense Newsletter, Invitation to SocketSense 1st and 2nd Specialist Workshops, Approached for organising Consultation Workshops	Link
AEF	Conference, Ecosystem / Community / Network	SocketSense Newsletter, Invitation to SocketSense 1st and 2nd Specialist Workshops, Approached for organising Consultation Workshops	Link
SEIS	Conference, Ecosystem / Community / Network	SocketSense Newsletter, Invitation to SocketSense 1st and 2nd Specialist Workshops, Approached for organising Consultation Workshops	Link
Roessingh Research and Development	Research / Academia	SocketSense Newsletter, Invitation to SocketSense Major International Workshop	Link
University of Strathclyde	Research / Academia	SocketSense Newsletter, Invitation to SocketSense Major International Workshop	Link
National Institute for Health Research (NIHR) – North East	Public Body / EU	SocketSense Newsletter, Invitation to SocketSense 1st	Link

Name of organization	Type of stakeholder	Type of communication	Website
and North Cumbria		and 2nd Specialist Workshops	
NIHR Office for Clinical Research Infrastructure	Public Body / EU	SocketSense Newsletter, Invitation to SocketSense 1st and 2nd Specialist Workshops	Link
Vascular Society of Great Britain and Northern Ireland	Public Body / EU	SocketSense Newsletter, Invitation to SocketSense 1st and 2nd Specialist Workshops, Approached for organising Consultation Workshops	Link
GKV-Spitzenverband	Policy Maker	Press Release, , Invitation to SocketSense 1st and 2nd Specialist Workshops	Link
Ottobock	Strategic Industry, Research / Academia	SocketSense Newsletter, Press Release, Invitation to SocketSense 1st and 2nd Specialist Workshops, Invitation to 1st and 2nd Exploitation Workshops	Link
Aqualeg	Strategic Industry	SocketSense Newsletter, Press Release, Invitation to SocketSense 1st and 2nd Specialist Workshops, Invitation to 1st and 2nd Exploitation Workshops	Link

3. Dissemination and communication tools and channels

The combination of traditional and online communication tools is used by SocketSense for reaching a wide audience. The project website and social media channels are part of the online tools, whereas the traditional channels cover events, paper presentations, press interviews, TV and radio appearances as well as visits, workshops and meetings. Specific tools are suitable for information sharing while others invite the visitor to engage. In the following sections we present the channels for the external and internal communication.

3.1 Visual identity - logo

The design of the logo (Figure 2) was concluded according to the project work plan in M3. It includes the name of the project together with the phrase "A tailored fit for the future" which summarizes the concept of the project for the development of an innovative advanced sensor-based socket system.

SOCKET SENSE
A TAILORED FIT OF THE FUTURE

Figure 2: SocketSense Project logo

3.2 Project Flyer, poster and website

In the framework of D7.1 Dissemination Toolkit the SocketSense partners prepared the specifications of a series of dissemination tools including the Project Flyer, the Project Poster and the Project website.

These tools will help the consortium partners to reach a wide audience and to communicate in an effective way the results of the project. More details regarding these tools can be found in D7.1.

3.3 Newsletters

The project's progress will be communicated to the key stakeholders via digital newsletters that will be issued regularly (every six months) and will be also available on the project website. The content that will be presented in the newsletters will include:

- News related to the activities of the project (e.g. launch, meetings, participation/ organization of events and workshops);
- Announcements regarding the progress of the project;
- Publications from project partners related to the project.

Published newsletters:

Newsletter #1 (13/7/2019)

Link

The main contents of the first newsletter of SocketSense were:

- an introductory message from the coordinator of the project (*DeJiu Chen - Project Coordinator & Associate Professor, KTH*), with information about the project
- A synopsis of the objectives of each work package of the project.

3.4 Social media

SocketSense social media channels and tools were activated on M4 for creating the "virtual identity" of the project (LinkedIn group). The social media dissemination tools will help us to reach a wide audience, but it will also help us to establish two-way communication channels with our target audience. This aspect is particularly important in this specific project because it will allow us to get valuable feedback for the design of the innovative socket from potential end users.

Regular media monitoring will be activated to evaluate how the project is perceived by users and followers.

- LinkedIn group

  A project LinkedIn group (SocketSense H2020 Project) was created in M5. Participation in the group is not limited to project members. This group offers a hub for stakeholders who are interested in the results of the project and it includes amputees, doctors, companies and scientists are active in the domain of medical devices and prosthetics as well as scientists and companies which are active in wearable technology, AI, sensors, data-driven design, secure communication, where they can share content, post questions regarding the novel socket system and the technologies that have been developed under the project.

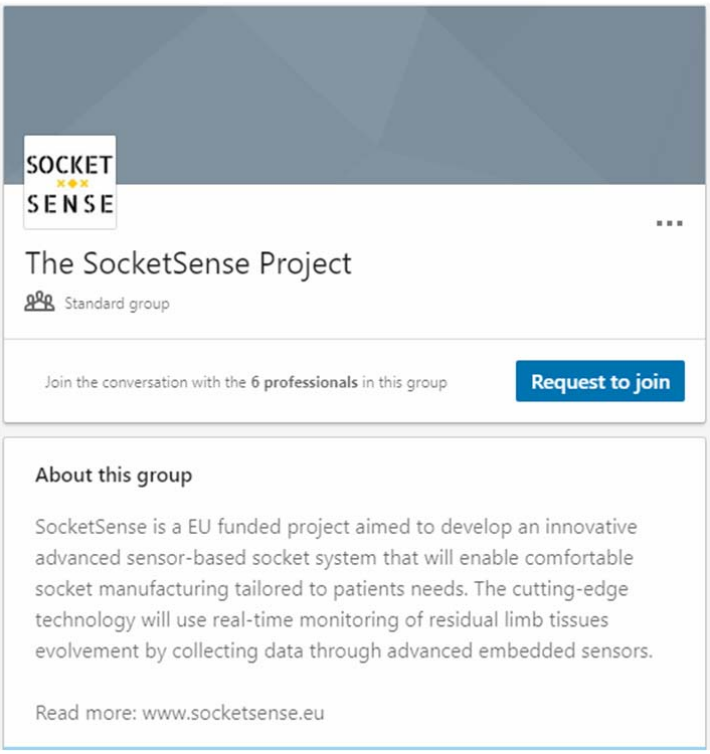

Figure 3: SocketSense Linkedin Group

KTH coordinates the SocketSense Linkedin group activities, but content will be published by all partners.

Posts can be on a number of topics, i.e.:

- Developments relating to the SocketSense project
- News items relevant to the project scope (prosthetics, novel sensors) and its target groups (industrial players in the medical devices and the prosthetics industry, end users, doctors etc.)
- Events related to the project (prosthetics, sensors etc.)

- Twitter/Facebook/etc. account

  A project Twitter/Facebook/etc. account might be created. As an example, tweeting activity can serve to disseminate project events and initiatives, through images and threads to the general public. However, this only makes sense if other effort is not more effective, such as the participation in relevant events. Therefore, we will make an assessment of the gain vs effort together with the publication of the newsletter (every 6 months), possible extending onto other platforms.

3.5 Dissemination templates

To ensure that all documents produced by the project, have the same design and consistency with the project's image for the entire project's duration, project templates were developed in M3. These templates can be found in D7.1 Dissemination Toolkit.

3.6 Audiovisual material

An effective way to communicate the project and disseminate its results are the SocketSense videos that can be displayed during events, but also shared on the web. For the promotion of the project's objectives and activities, a short video trailer will be produced, aiming to inform a wide audience about innovative solutions developed by project partners. The video should contain:

- interviews of the Project Coordinator and of key partners
- a presentation of the project objectives and expected impacts.

Towards the completion of the project, a longer video should be created in order to demonstrate the results of the SocketSense implementation. The latest version should aim to maximize exploitation of the project's achievements.

3.7 Project meetings

Project meetings will be scheduled and held periodically with dates communicated well in advance to partners.

3.8 Document sharing

In order to share project documentation, both in a restricted and public access section, the partner will use the online platform Box which will be used for:

- Files exchange with size unsuitable for email attachments
- Sharing files with other web-communities
- Using a list of files external to the media library
- Using a list of archived files, such as videos, PDF, or audio files

3.9 Dissemination Activities

All the partners of the SocketSense project will utilize the dissemination tools that they have at their disposal in order to engage more effectively with the identified target audience of the project. As we can see in the table below the available dissemination tools can reach almost all of the target audience, ensuring appropriate exposure of the projects' results.

Table 6 SocketSense Dissemination Tools & Target audience

Dissemination tools	Target audience					
	Academic & research community	Industry	Standardization Bodies	Regulators, framework builders, and policy makers	EU Projects in similar domains	End users
Project website	✓	✓	✓	✓	✓	✓
Newsletters	✓	✓	✓	✓	✓	✓
Scientific Publications	✓	✓	✓	✓	✓	-
Project marketing material (flyers, posters, audiovisual material)	✓	✓	✓	✓	✓	✓
Participation in events (national and international conferences. Exhibitions, workshops etc.)	✓	✓	✓	✓	✓	-
Social media	✓	✓	✓	✓	✓	✓

3.9.1 Publications

The goal is to ensure that the scientific and technological results of the project will be appropriately disseminated in the scientific communities and among industrial players that are involved in the development of prosthetics, as well as in the development of cutting edge technologies in fields like biomechanical modelling or advanced materials and sensors. It is foreseen that the scientific partners together with the industrial partners of the project will either individually or in collaboration develop and publish the results in conference papers, journals, as well as in magazines.

Publishing and presenting papers in relevant events is a very effective way to attract the interest of important stakeholders. This constitutes a basis for revealing shared topics and identifying potential collaboration opportunities. The publications from the project partners will be also published on the SocketSense website. The table below displays the identified journals relevant to the project and its communication strategy.

Table 7 SocketSense Targeted Journals and magazines

Name	Relevant Info	Link
Artificial Intelligence for Engineering Design, Analysis and Manufacturing (Open access)	This journal publishes articles about significant AI theory and applications based on research in all branches and phases of engineering. Suitable topics include: analysis and evaluation; selection; configuration and design; manufacturing and assembly; and concurrent engineering.	Link
ASME Journal of Medical Devices	The Journal of Medical Devices presents papers on medical devices that improve diagnostic, interventional and therapeutic treatments focusing on applied research and the development of new medical devices or instrumentation.	Link
British Journal of Surgery (Open access)	This journal publishes articles that aim to advance and improve education in surgery and to diffuse knowledge on new and improved methods of teaching and practising surgery in all its branches.	Link
Computer Methods in Applied Mechanics and Engineering (Elsevier) (Open access)	This journal publishes articles related to any type of computational method for the simulation of complex physical problems leading to the analysis and design of engineering products and systems.	Link
IEEE Access (open access)	IEEE Access is an open access multidisciplinary, electronic archival journal that presents the results of original research or development across different fields.	Link
IEEE Embedded Systems Letter	The IEEE Embedded Systems Letters focuses on the latest technical advances in embedded systems and related areas in embedded software.	Link
IEEE Journal of Biomedical and Health Informatics	J-BHI publishes papers related to recent advances in the field of biomedical and health informatics where information and communication technologies intersect with health, healthcare, life sciences and biomedicine.	Link
IEEE Robotics and automation (Open access)	IEEE Robotics and Automation Magazine publishes advances in theory and experiment related to the science of robotics and automation focusing on working systems and emphasizing creative solutions to real-world problems and highlighting implementation details.	Link
IEEE Transactions on Biomedical Engineering	IEEE Transactions on Biomedical Engineering contains basic and applied papers dealing with biomedical engineering.	Link
IEEE Transactions on Mechatronics (open access)	IEEE/ASME Transactions on Mechatronics journal focuses on practical aspects of the theory and methods of mechatronics, the synergetic integration of mechanical engineering with electronic and intelligent computer control in the design and manufacture of industrial products and processes.	Link
Journal of Biomechanics	The Journal of Biomechanics publishes articles with findings using the principles of mechanics to explore biological	Link

	problems.	
Journal of Medical Devices	The Journal of Medical Devices presents papers on medical devices that improve diagnostic, interventional and therapeutic treatments focusing on applied research and the development of new medical devices or instrumentation.	Link
Journal of Orthopaedic Research	The Journal of Orthopaedic Research publishes articled within the full spectrum of orthopaedic research, including life sciences, engineering, translational, and clinical studies.	Link
Journal of Orthotics & Prosthetics	Journal of Prosthetics and Orthotics provides information on new devices, fitting and fabrication techniques, and patient management experiences, focusing on orthopaedic research, occupational therapy, physical therapy, orthopaedic surgery, amputation surgery, physical medicine, biomedical engineering, psychology, ethics, and gait analysis.	Link
Journal of the Mechanical Behavior of Biomedical Materials	The Journal of the Mechanical Behavior of Biomedical Materials is concerned with the mechanical deformation, damage and failure under applied forces, of biological material (at the tissue, cellular and molecular levels) and of biomaterials.	Link
Journal of Vascular Surgery (Open access)	Journal of Vascular Surgery focuses on articles that present scientific results which aim to improve the management of patients with vascular diseases.	Link
MDPI Electronics (open access)	Electronics (ISSN 2079-9292) is an international, peer-reviewed, open access journal on the science of electronics and its applications.	Link
Med-Tech Innovation Magazine	Med-Tech Innovation News magazine provides intelligence for professionals involved in the design and production of Class I,II & III medical devices and connects designers, manufacturers, buyers and early adopters across the medical engineering and manufacturing community with the latest innovations in technology, materials, processes, digital health and R&D	Link
Physiotherapy (Elsevier) (Open access)	Physiotherapy is dedicated to the advancement of physiotherapy through publication of research and scholarly work concerned with, but not limited to, its scientific basis and clinical application, education of practitioners, management of services and policy.	Link
PLOS ONE (open access)	This journal publishes interdisciplinary research across science, engineering, medicine and related social sciences and humanities.	Link
Printed Electronics World – IDTechEx	Printed Electronics World focuses on printed electronics in different forms (transistor circuits to power, sensors, displays, materials and manufacturing.	Link
Prosthetics and Orthotics International (IF:1.48) (open	This is a multidisciplinary journal focusing on medical, clinical, rehabilitation, technical, educational and research	Link

access)	aspects of prosthetics, orthotics and rehabilitation engineering.	
Rehabilitation (Georg Thieme Verlag) (Open access)	-	Link
Sensors (MDPI) (open access)	This journal focuses on the science and technology of sensors and biosensors.	Link
The European Journal of Vascular and Endovascular Surgery (Open access)	This journal focuses on surgeons dealing with patients with arterial, venous and lymphatic diseases.	Link
Ultrasound in Medicine & Biology (IF:2.2)	This is the official journal of the World Federation of Ultrasound in Medicine and biology. It publishes articles that contributions that demonstrate a novel application of an existing ultrasound technology in clinical diagnostic, interventional and therapeutic applications, new and improved clinical techniques, the physics, engineering and technology of ultrasound in medicine and biology, and the interactions between ultrasound and biological systems, including bioeffects.	Link
Wearables Technology Insights – IDTechEx	This journal covers the latest wearables research and industry news, from enabling materials to the gadgets.	Link

The table below will be used to monitor the publications of the SocketSense partners in technical papers, journals and magazines. This table will be updated regularly in order to monitor the progress of the dissemination activities and the impact of the scientific work that takes place in the framework of the project.

Table 8 Monitoring of SocketSense Publications

Main Author	Contributors	Status	Title	Name of journal or magazine	Date of publication	Relevant page	DOI	URL
Össur	KTH, RISE	Planned	Paper for Special Issue initiated by SocketSense.	MDPI Sensors journal				
RISE	LTech	Planned	Paper for Special Issue initiated by SocketSense.	MDPI Sensors journal				
Noelia Marquez (Newspaper Diario de Sevilla)	SAS	Published	Amputados: Expertos sevillanos diseñan un sistema para recuperar la movilidad	Newspaper Diario de Sevilla	2019/02/03	-	-	Link
Amalia F.L (ABC)	SAS	Published	Piernas «inteligentes» que mejoran la movilidad	Newspaper ABC	2019/02/03	-	-	Link
Sevilla Actualidad	SAS	Published	Especialistas del Virgen del Rocío desarrollarán prótesis inteligentes para miembros inferiores	Newspaper Sevilla Actualidad	2019/02/03	-	-	Link

The Special Issue initiated by SocketSense in the MDPI Sensors journal can be found here: https://www.mdpi.com/journal/sensors/special_issues/prosthetics. The Guest Editors are from KTH and RISE.

Additionally, for specific application scenario of the SocketSense solution, corresponding white papers about the benefits of using the proposed technology will be provided within the first 18 months of starting the project.

3.9.2 Events & Conferences

SocketSense partners will participate in events relevant to the project in order to increase its visibility and establish new contacts. National and international conferences provide the opportunity to share the experiences and results with relevant experts, therefore, to achieve an effective dissemination of the project. Workshops, meetings and other large events (exhibitions, trade fairs, showcases) are also excellent platforms for disseminating our findings and start direct conversations with target audiences. The table below presents the targeted events. The table will also be used for monitoring the events either organized by SocketSense partners or where SocketSense partners participate as attendees. This table will be updated regularly in order to monitor the progress of the dissemination activities and measure their impact.

Table 9 Monitoring & Targeting of Dissemination Events

Name of the event	Date	Status	Type	**Place** (Country/City)	Organizer	Participating Partner(s)	Type of audience	Size of audience	url
Cyber Physical Systems (CPS) Week	2019-04-15/18	Attended	Conference	Montreal, Canada		KTH	Scientific community, industry		Link
MedTech Innovation Expo 2019	2019-05-15	Attended	Conference	Birmingham, UK	MedTech	LTech	Scientific community, industry, medical professionals, Policy makers, customers	4,000+ from / 30 countries	Link
Rehabilitation centre visit	2019-06-12	Attended	Interview	Middlesbroug, UK	STHNHSTF	All partners	Scientific community, industry, medical professionals, patients	20	-
MedInfo 2019	2019-08-25/30	Attended	Conference	Lyon, France		SAS	Scientific community, industry, medical professionals	3000+	Link
Digital Excellence Forum	2019-09-19/20	Attended	Conference	Helsinki, Finland	European Commission	NM	Scientific community, industry	3,000	Link
IDTechEx Healthcare Sensor Innovations 2019 Conference &Exhibition	2019-09-25/26	Attended	Conference	Cambridge, UK	IDTechEx	LTech	Scientific community, industry, medical professionals, Policy makers, customers	approx. 1000	Link
Presentation in the Ministry of Research in Frankfurt	2019-10-01	Attended	Presentation	Frankfurt, Germany	Ministry of Research (Germany)	NM	Scientific community, Policy makers	120	Link
NHS Innovation: What, why and how?	2019-10-03	Attended	Conference	Middlesbrough, UK	STHNHSFT	STHNHSFT	Scientific community, industry, medical professionals	30	
SINTEC - SocketSense Collaboration planning meeting	2019-10-04	Attended	Meeting	Uppsala, Sweden	Uppsala Universitet	KTH	Scientific community	5	-

Giant Health Event	2019-10-15/16	Attended	Event - Other	London, UK		TU	Scientific community, industry, medical professionals, Policy makers	2000+	Link
EPoSS Annual Forum	2019-10-17	Attended	Workshop	San Sebastian, Spain	EPoSS	RISE IVF	Scientific community, industry, Policy makers	75	Link
Smart Bioelectronic and Wearable System	2019-10-22/23	Attended	Workshop	Brussels, Belgium	European Commission	KTH, RISE IVF, LTech, Össur	Scientific community, industry, Policy makers		Link

Name of the event	Date	Status	Type	**Place**(Country/City)	Organizer	Participating Partner(s)	Type of audience	Size of audience	url
TWI Innovation Summit	2019-11-07	Planned	Conference	Athens, Greece	TWI Hellas	TWI, NM	Scientific community, industry, Civil society, General public, Policy makers, media		Link
XXIV Sociedad Andaluza de Calidad Asistencial (Andalusian Society of Healthcare Quality)	2019-11-14/15	Planned	Workshop	Antequera, Spain	Sociedad Andaluza de Calidad Sanitaria (Andalusian Society of sanitary quality)	SAS	Scientific community, industry, medical professionals, Policy makers, customers		Link
Annual Scientific Meet of the Vascular Society of Great Britain and Northern Ireland	2019-11-27/29	Planned	Conference	Manchester, UK		STH	Scientific community, industry, medical professionals		Link

International Conference on Biomedical Engineering	2019-12-9/12	Planned	Conference	Singapore			Scientific community, industry	600	Link
Neural Information Processing Systems (NIPS)	2019-12-8/14	Planned	Conference	Vancouver, Canada		-	Scientific community, industry		Link
Large Area Electronics Conference	2020-01-21&22	Planned	Conference	Cambridge, UK		LTech, TU	Scientific community, industry, medical professionals		Link
SSI International Conference — Sensor Solutions	2020-03-31-04-01	Planned	Conference	Brussels, Belgium			Scientific community, industry		Link
Name of the event	Date	Status	Type	**Place**(Country/City)	Organizer	Participating Partner(s)	Type of audience	Size of audience	url
Med-Tech Innovation Expo 2020	2020-04-1&2	Planned	Conference	Birmingham, UK		LTech, TU	Scientific community, industry, medical professionals		Link
The Charing Cross Symposium	2020-04-21 /24	Planned	Conference	London, UK		STH	Scientific community, industry, medical professionals		Link
MIE 2020	2020-04-28 - 05-01	Planned	Conference	Geneva, Switzerland		SAS	Scientific community, industry		Link
NHS R&D Forum National Conference	2020-05-10/12	Planned	Conference	Newcastle, UK		STH	Scientific community, industry, medical professionals, Policy makers		Link

OTWorld (Paper Title "Pressure measurements in prosthetic sockets of transfemoral amputees during ambulation and the relationship with socket fit: A Systematic Review")	2020-05-12	Planned	Conference	Leipzig, Germany	Technische Universität Berlin, Fraunhofer IBMT, DGBMT	Össur, KTH, RISE IVF	Scientific community, industry, medical professionals, customers	20,000	
TECHNICALLY ASSISTED REHABILITATION 7TH EUROPEAN CONFERENCE (TAR)	2020-05-14/15	Planned	Workshop	Leipzig, Germany	Technische Universität Berlin, Fraunhofer IBMT, DGBMT	SAS, TWI, Össur, KTH, RISE IVF	Scientific community, industry, medical professionals, customers		
Wearable Technology Conference (WEARCON)	2020-06-1/19	Planned	Conference	San Francisco, USA		KTH	Scientific community, industry		Link
Name of the event	Date	Status	Type	**Place**(Country/City)	Organizer	Participating Partner(s)	Type of audience	Size of audience	url
26th Congress of the European Society of Biomechanics	2020-07-12/15	Planned	Congress	Milan, Italy		TU	Scientific community, industry, medical professionals		Link
International Conference on Disability Virtual Reality and Associated Technologies	2020-09-9/11	Planned	Conference	Serpa, Portugal		KTH	Scientific community, industry, medical professionals		Link
International Symposium on Wearable Computers (ISWC)	2020-09-12/16	Planned	Symposium	Cancun, Mexico		KTH	Scientific community, industry		Link

Workshop at System and Software Safety Conference	2020-11-01	Planned	Workshop	Stockholm, Sweden	KTH	KTH	Scientific community, industry, Policy makers		
ISPO (International Society for Prosthetics and Orthotics) World Congress 2020	N/A	Planned	Conference	N/A		TU	Scientific community, industry, medical professionals		Link
Smart System Integration (SSI) conference – 2021	2021	Planned	Conference	N/A		RISE IVF	Scientific community, industry		Link

It should be noted that the project is suggesting workshops at OTWorld, TAR and the System and Software Safety Conference during 2020.

The dissemination of the experience and know-how among the specialists will be pursued through two dedicated workshops on project topics and will be organized in the second and third years of the project.

Events & Conferences in the first 10 month of the project (January – October 2019)

During the first 10 months, the project partners represented SocketSense at a number of events. The representation of the project took place in different ways, including project presentation and simple participation for liaising or networking purposes. The details of these events, along with a short summary are presented below.

MedTech Innovation Expo 2019

Date: 2019/05/15
Venue: Birmingham, UK
Participating partner: LussTech
Participation in the conference

Med-Tech Innovation Expo is the UK & Ireland's leading event for medical design and manufacturing technology.

Impact: Networking with innovators, suppliers & manufacturers from across the medical & healthcare sector.

Rehabilitation centre visit

Date: 2019/06/12
Venue: Middlesbrough, UK
Participating partner: STHNHSTF, All project partners
Organisation of and participation in the workshop

A visit at the Rehabilitation Centre of South Tees Hospitals was organised. The SocketSense project was presented to prosthetists and patients.

Impact: Expanding knowledge of prosthetics from patient and prosthetists' point of view to gain feedback and insight on stakeholders for all partners.

MedInfo 2019

Date: 2019/08/25-30
Venue: Lyon, France
Participating partner: SAS
Participation in the conference

MedInfo (World Congress of Medical and Health Informatics) is a worldwide key event in digital health that gathers scientists, physicians, teachers, students, companies, institutions, and decision-makers.

Impact: Networking with healthcare professionals, scientists, suppliers & manufacturers from the medical & healthcare sector.

Digital Excellence Forum

Date: 2019/09/19-20
Venue: Helsinki, Finland
Participating partner: Nuromedia

The event provided a forum to present and discuss the main policy drivers of the digital transformation of European industry. Nuromedia presented of the general idea of SocketSense at the Societal Challenges Panel.

Impact: General interest in research activities of SocketSense. Follow up on potential application of SocketSense solution in parallel markets.

IDTechEx Healthcare Sensor Innovations 2019 Conference &Exhibition

Date: 2019/09/25-26
Venue: Cambridge, UK
Participating partner: LussTech
Participation in the conference

Healthcare Sensor Innovations 2019 is a conference & exhibition focusing on latest developments in use of wearables & sensors in continuous monitoring of individuals & point-of-care diagnostics.

Impact: Expanded knowledge on novel technologies related to the project.

Presentation in the Ministry of Research in Frankfurt

Date: 2019/10/01
Venue: Frankfurt, Germany
Participating partner: Nuromedia
Presenter for H2020 Impact on SME and involvement in SocketSense project

Impact: General praise for development of innovative solutions and impact creation (towards the whole consortium).

NHS Innovation: What, why and how?

Date: 2019/10/03
Venue: Middlesbrough, UK
Participating partner: STHNHSFT
Participation in the conference

The event was organised by South Tees Hospitals NHS Foundation Trust and included short talks on different aspects of innovation, digital innovation and successful H2020 projects.

Impact: Invitation received to give a presentation and presented the project work to other stakeholders.

SINTEC - SocketSense Collaboration planning meeting

Date: 2019/10/04
Venue: Uppsala, Sweden
Participating partner: KTH
Organisation and participation in the meeting

This workshop was arranged for identifying common interests of SocketSense and another H2020 project SINTEC (https://www.sintec-project.eu/), regarding the technologies and dissemination activities.

Impact: Networking of research on stretchable and wearable technologies for medtech.

Giant Health Event

Date: 2019/10/15-16
Venue: London, UK
Participating partner: TU
Participation in the conference

The Global Innovation And New Technology Health Event is Europe's largest health technology innovation event, showcasing leading health tech from around the world.

Impact: Expanded knowledge on novel technologies related to the project.

EPoSS Annual Forum

Date: 2019/10/17
Venue: San Sebastian, Spain
Participating partner: RISE IVF
Presentation of the SocketSense project

EPoSS is an industry-driven policy initiative defining R&D and innovation needs as well as policy requirements related to Smart Systems Integration and integrated Micro- and Nanosystems. The SocketSense project was presented during the Smart Systems for Flexible Electronics and Wearables session. In addition to introducing the project the focus of the presentation was on the sensor material and the integration into the socket.

Impact: The presentation generated interest from the EPoSS community, several questions and suggestions on the technology came up during the discussion afterwards. New contacts were made, the contacts were added to the stakeholders' / dissemination list of the project.

Smart Bioelectronic and Wearable System

Date: 2019/10/22-23

Venue: Brussels, Belgium
Participating partners: KTH, RISE IVF, LTech, Ossur
Presentation & exhibition of the SocketSense project

SocketSense partners from KTH, RISE IVF, LussTech and Ossur participated the EC Workshop on Smart Bioelectronic and Wearable Systems. The workshop presented breakthroughs and innovations in smart bioelectronics and flexible & wearable systems. This workshop aimed to promote cross project communication while informing the current technology and policy trends.

On Day 1, during the "Project session" Professor Dejiu Chen (KTH) presented the overall strategy and related base technologies of SocketSense. In addition, the SocketSense team participated in the exhibition dedicated running and completed EU-funded projects.

Impact: Some questions regarding the innovation of the project were received and answered. New contacts were made, the contacts were added to the stakeholders' / dissemination list of the project.

4. Monitoring, reporting, and evaluation

4.1 Distribution of responsibilities

The Dissemination Promoter is the main point of contact for any external communications and for the publication of the content that will be generated during the project (articles, images or videos) in different dissemination channels that will maximize the reach of the project.

All consortium partners are supported by the WP7 Lead KTH to define their individual dissemination activities and to be actively involved in them. The SocketSense partners will participate in the dissemination of the project results by:

- Attending events like conferences, workshops, exhibitions and B2B, related to SocketSense (a list of the identified events can be found in table 8) and presenting the project and the achieved results;
- Providing content (pictures, videos, press releases, articles etc.) related to their work packages;
- Informing the consortium about opportunities they become aware of for increasing the reach of the project (relevant events, publications, newsletters etc.);
- Reporting on the dissemination activities that are implemented by them.

The partners have designated a person from their organization who will act as a contact point for the dissemination activities and the relevant reporting. The Dissemination Point of Contacts can be found in Annex 2.

4.2 Dissemination rules and policy

During the dissemination activities of the project the partners should take into account issues related to IP. The partners should come to an agreement when it comes to the publication of confidential information of another partner.

In the event of publication of results that have been jointly developed by project partners, each partner should give consent for that publication. Before publication the articles should be reviewed by the Project Coordinator and the Dissemination Promoter in order to check any potential conflicts with other articles and to decide together with the steering committee if this article can be published on the SocketSense website.

In order to avoid any conflicts between the partners the guidelines in the relevant articles in the GA should be followed. According to Article 29.1 of the GA:

> "A beneficiary that intends to disseminate its results must give advance notice to the other beneficiaries of — unless agreed otherwise — at least 45 days, together with sufficient information on the results it will disseminate.

Any other beneficiary may object within — unless agreed otherwise — 30 days of receiving notification, if it can show that its legitimate interests in relation to the results or background would be significantly harmed. In such cases, the

dissemination may not take place unless appropriate steps are taken to safeguard these legitimate interests."

The content that will be produced should follow the graphic identity of the project, which can be found in section 3.1 in order to increase the recognition of the project. This means that the content used for the dissemination should include:

- the name of the project: SocketSense
- the url of the project's website: www.socketsense.eu
- Acknowledgment of the EC, including the EC flag and the indication of Horizon 2020

Any publications that will be produced by any of the project partners that is based on work/activities that took place in the framework of the SocketSense project should acknowledge the connection with the project and the fact that these activities were funded by the EC.

4.3 Monitoring and reporting of dissemination activities

The project partners are encouraged by the KTH WP7 leader to report any dissemination activities and their results.

Regarding the reporting of events partners will fill out the Dissemination Event report template that will gather:

- Information regarding the event and the role of the SockeSense partner
- Relevant metrics regarding the event (nr of participants, meetings that took place etc.)
- Questions raised and any comments/feedback received from the participating partners from the event audience

The report template for the dissemination events can be found in Annex 1.

The information provided by the project partners will help in monitoring the progress and the impact of the dissemination activities by providing both qualitative and quantitative data regarding these activities and they will be used to update D7.3. The Dissemination Promoter will use this data to reassess those activities during the project progress meetings every 6 months. The process of monitoring of dissemination activities is highlighted below:

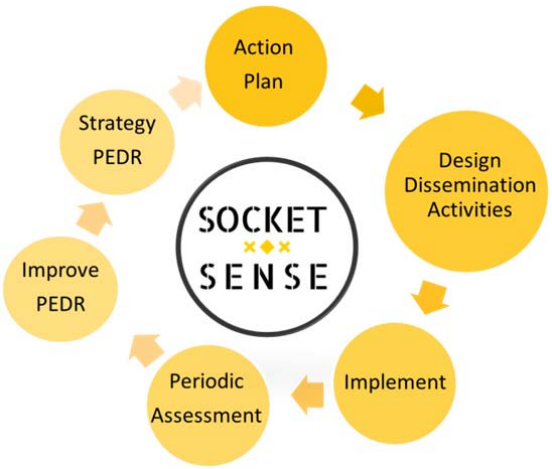

Figure 4: Monitoring of dissemination activities

As it is displayed in Figure 4, the monitoring will be a continuous process that will assess the overall dissemination activities and results, but also evaluate each individual activity and its impact on the project as a whole. The Dissemination Plan will be updated according to the results of such evaluation.

4.4 Key performance indicators

In order to measure and assess the dissemination activities in terms of their relevance, quality, and promotion channel, and thus help the consortium to understand the reach and sustainability of the project's results, a number of Key Performance Indicators (KPI) were set-up within Socket Sense. These indicators, which represent the minimum expected outreach, are presented in the table below.

Table 10 Key Performance Indicators for Dissemination Activities

Action	Description	KPI	Achieved (M10)	M36 Target
Scientific Dissemination	Publications in high impact factor scientific journals and magazines about general progress of SocketSense will be regularly performed to ensure the rapid and effective dissemination of important findings among the international scientific community and contribute to increasing the scientific and technological cap ability of Europe in Prosthetics	Number of joint publications by the project partners with acknowledgement to SocketSense Grant.		5
Dissemination events	Spread the results of the projects on several high- level scientific European and international conferences and	Number of comprehensive reports obtained from meetings,		30

	symposia in prosthetic field.	workshops attended.		
Connection with European Networks	Participation in a variety of networks in the area of the development of new prosthetic tools as well as in other relevant communities of medical sectors and collaborate in (inter)national research projects.	Number of report meetings with European stakeholders such as: patients, prosthetic industry, clinicians, regulatory and national health system representatives		10
Academic training	PhD students which constitute an immediate audience for the project achievements through well- established dissemination channels, such as scientific sessions, seminars and courses normally open for dissemination among a highly specialised audience. Additionally, KTH and Teesside University are actively involved in teaching and education in particular to masters and Doctoral programs in diverse fields connected to this project.	Number of scientists attending training courses and SocketSense workshops.		100
Raising public awareness	SocketSense is motivated to increase the cancer diagnosis of European citizens, raising awareness inside the society on the potential impact of new and emerging technologies, such as the ones to be developed in the framework of the project. It is SocketSense Consortium's duty to ensure that questions are answered and that the program and its goals are transparent. In this sense contacts with the media (i.e. press, TV/radio, popular scientific journals, etc.) will take place.	Number of press releases and communication to general audience and patients. (Web and social media analytics: page views, downloads, visitors, hits, followers, etc. with the same level of performance as other H2020 projects.)	1 x newsletter	15

5. Section B: EXPLOITATION PLAN

The main goal of the Exploitation Plan is to magnify the impact of the innovative socket system by preparing its commercial uptake and to ensure the maximum use of SocketSense technology after the end of the project.

Each partner will be involved in a continuous process of technology transfer and absorption throughout the development phase and this plan outlines the activities that will be implemented during the project in order to achieve a successful exploitation of the project's results.

The basis for the implementation of the results of SocketSense is the strong demonstration focus of the project. Significant effort is dedicated to trials and tests at lab scale (as well as in hospitals) combined with the assessment and verification tools that will provide the knowledge base for informed decisions by high-level decision makers of the end user partners at SAS and STH.

An initial business model with the SocketSense partners is displayed in the figure below:

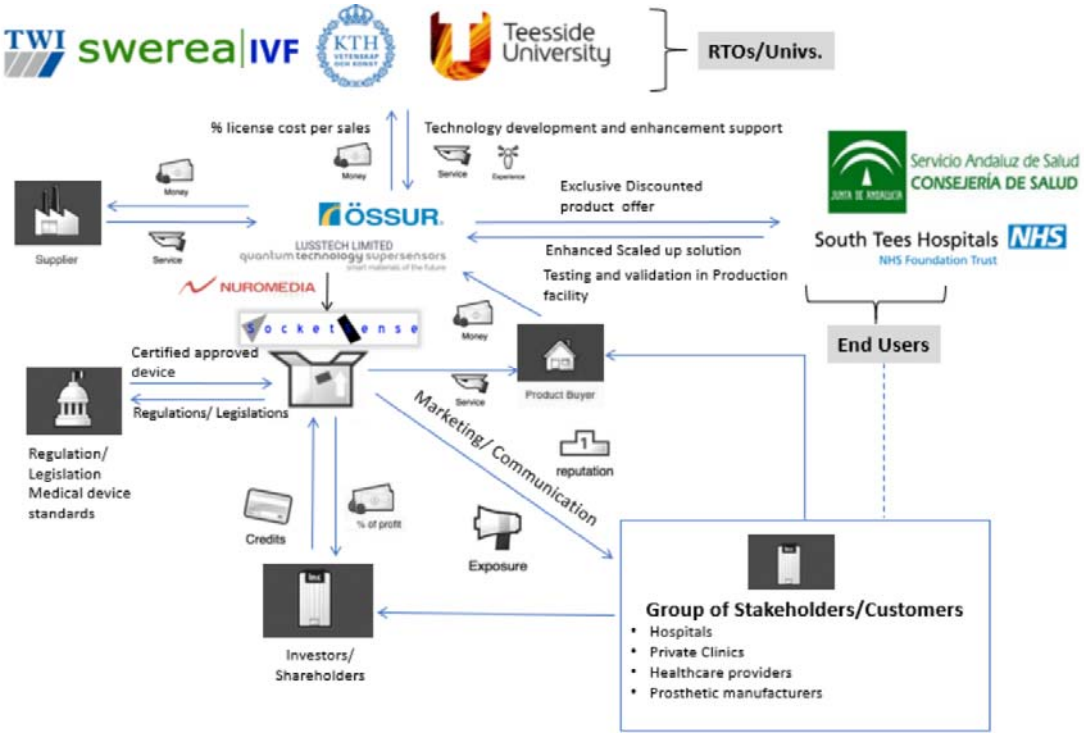

Figure 5: SocketSense business model (Board of Innovation)

The exploitation strategy of SockeSense will give valuable input to Task 7.4 Post Project Business Plan and Commercialisation roadmap but it will also take into account the results of the market and the financial analysis that are part of this task.

5.1 Exploitable results

5.1.1 List of Results

A critical step towards the successful exploitation of the results of SocketSense is the collection of the project results. In order to do that we will use the table below on a regular basis and further analyze the project results regarding their imminent potential to be exploited. The consortium will then decide about the exploitation route for each result by its own interest (and on partners level).

The table below shows the project results identified within SocketSense at the time of writing this report (Month 10), together with short descriptions and the partner identified as responsible for the Result development. Furthermore, partners contributing to the development of the particular results are also presented.

As mentioned before, the project is still in its early phase dealing with its R&D activities mainly. In this stage of the project, characterization of the Exploitable Results is transforming and only preliminary results are available so far.

Table 11 List of Project Results

Title of the Exploitable Result(s)	Description of Exploitable Result	Exploitation form	Lead Partner	Participating partners	Sector(s) of application
Socket System	Minimal Viable Product for SocketSense system	Commercial exploitation - Product & Service	Ossur	Whole consortium	Prosthetic Care
QTSS sensors	QTSS sensors for sensing pressure, friction & shear	Commercial exploitation - Product	LTech	IVF	Prosthetics, printed electronic sensor market & medical devices
Software solution	GUI based software solution that integrates data readout, visualizes embedded system /sensorial/environmental/other data, provides interfaces for communication between hardware components and front-end applications. Clinical interfaces and databases	Commercial exploitation - Product & Service	NM		O&P but can be expanded to any health information systems
Data acquisition	An embedded computer system is	Education	KTH		University education

hardware	built up to read, store and communicate sensor data.	Hardware system together with its embedded software.			
QTSS Sensor Assembly Techniques	Novel design of multiple-sense sensor strip (X-mas tree design)	Commercial exploitation – Product	IVF	LTech, Ossur	Medical technology
Biomechanical models	Biomechanical models for comfort of prosthetic	Potential IP, Further research, further scientific developments and education	TU	SAS, STH, TWI-Hellas, KTH, Ossur	Higher education

The table below summarises the initial exploitation plans of partners in Month 10, their interest and the opportunities partners expect from exploiting results. These preliminary plans will be updated, as the project progresses.

Table 12 Initial exploitation plans of partners

Partner	Initial Exploitation Plan
Ossur	Ossur is an international O&P manufacturer and distributor. Since the company designs, manufactures and sells prosthetic systems and service, it is interested in exploiting the SocketSense solution for prosthetic users. The potential value of the system is that the socket optimizing process can be simplified, saving time and cost for prosthetic workshop. The system would be made available through Ossur's current sales channels to prosthetic workshops. The outcome of the project will have to be evaluated against a potential business opportunity which may differ somewhat based on the success of the development of individual system modules and the level of clinical evidence acquired within the project. Below are listed the steps needed at the end of the project to evaluate the relevance of the technology and its development status. The outcome of this process is a comprehensive business case which indicates the market size needed for such a venture to be profitable: **EVALUATION OF CURRENT STATUS OF THE SOCKETSENSE SYSTEM** • Planned use of the SocketSense system • Results from the clinical validation of SocketSense prototypes • Expert view on the SocketSense prototype system **DECISION ON REQUIRED STEPS TOWARDS A MARKETABLE PRODUCT** • General market situation • Technical development

	• Clinical evaluation
	• Substantiation of claims
	• Quality system
	• Notified Body Approval
	• Sales and Marketing
	
	PREPARE ROADMAP TO MARKET FOR THE SOCKETSENSE SYSTEM
	• Importance of IP evaluated against level of market entry
	• Investment needed
	  o Development cost
	  o Selling, General and Administrative cost
	  o Variable unit cost
	• Income from product sales
	• Target market size for Return on Investment
	• Modest sales plan
	
	DEFINE KEY PERFORMANCE INDICATORS (KPIS)
	
	OTHER EXPLOITABLE OUTCOMES UPDATE

LTech	Quantum Technology Supersensors is a specialist materials development SME producing a new generation of smart & multifunctional materials that enable new sensing solutions. Its award winning QTSS materials open up new and exciting possibilities for more environmentally friendly, low weight & low cost sensors in the prosthetics & medical devices markets. LussTech is looking to exploit its QTSS sensors through direct product sales and licensing in these high growth markets to increase sales.
NM	Nuromedia exploitation intention is to commercialise the provision of enhanced, value added services towards end users (whether those are O&P stakeholders, clinical personnel or an amputee), so as to expand its target groups, strengthen its position against competitors, increase technological and managerial competence, and expand its European business partner network. NM aims at the German and European service provision market towards enterprises to integrate SocketSense software (or a derivative of it) into their operation. At the same time, SocketSense results will have a significant and positive effect in terms of Nuromedia's services opening up new market areas expanding its portfolio of developed applications and services therefore strengthening its visibility and securing a market share. Finally, by researching and influencing the state-of-the-art, NM is secured to provide permanent innovation in its internal work processes and to participate in an emerging market. The knowledge which will be reached through the project will increase the profitability of other projects in clinical domains and increase the knowhow of the team with a sustainable, long-term positive effect.
KTH	KTH will use the embedded system as a basic sensor data processing platform to define and conduct course/master thesis projects for students in their educational programs.
IVF	The knowledge and expertise gained in the project will, in the short term, be used in other, national and international projects. Exploitation of the project results will be in the form of offering processing and test concepts as well as

	prototype designs of sensor strips for in-socket use. In the long term, processes, material choices and design developed in the project will be put to practical use in our customers' operations also in other sectors. The experience of working in the SocketSense project is valuable for our mission to collect and spread new technology to companies and organizations.
TU	The research within SocketSense builds on background knowledge of TU within biomechanics and prosthetics. We will seek to protect potential Foreground IP from TU that might arise from the biomechanical models particularly in relation to any correlations between pressure and comfort to reach optimum prosthetic socket shape. TU will also seek to publish in high quality journals and make the work publicly available as well as disseminating information within the relevant conferences. Our work in SocketSense will also be used for educational purposes and will be incorporated within undergraduate and post-graduate programmes. We will pursue academic and commercial opportunities that will expand our knowledge and expertise on biomechanics, prosthetics and sensing.

5.1.2 Key Exploitable Results

After filtering all results, Key exploitable will be described by using the following table.

Table 13 Key Exploitable Results

Innovativeness introduced compared to already existing Products/Services	…
Unique Selling Point (competitive advantages)	…
Product/Service Market Size	…
Market Trends/Public Acceptance	…
Product/Service Positioning	…
Legal or normative or ethical requirements (need for authorisations, compliance to standards, norms, etc.)	…
Competitors	…
Prospects/Customers	…
Cost of Implementation (before Exploitation)	…

Time to market	…
Foreseen Product/Service Price	…
Adequateness of Consortium Staff	…
External Experts/Partners to be involved	…
Status of IPR: Background (type and partner owner)	…
Status of IPR: Foreground (type and partner owner)	…
Status of IPR: Exploitation Forms (type and partner owner) e.g. direct industrial use, patenting, technology transfer, license agreement, publications, standards, etc.	…
Which partner contributes to what (main contributions in terms of know how, patents, etc.)	…
Partner/s involved expectations	…
Sources of financing foreseen after the end of the project (venture capital, loans, other grants, etc.)	…

5.2 Intellectual Property and Ownership

IPR management will be led by the commercialization manager (Freygardur - Thorsteinsson, Ossur) in close collaboration with the project coordinator. The IPR Management will follow the Grant Agreement, which was signed by all the consortium partners and it includes provisions regarding protection and publication of the IP that will be generated by the project, access rights to background IP, dispute settlement, liability and confidentiality.

5.2.1 Background IP

The background knowledge that was held by the partners prior to signing the Grant agreement and which is needed in the implementation of the project is described in the "Agreement on Background". Access rights for the background knowledge must be requested in writing. The partners must give free access to their background knowledge needed by the other beneficiaries, for implementing actions related to the project, unless specific conditions are met, which are described in the Grant Agreement.

5.2.2 Foreground IP

According to the Grant Agreement any results that are generated by the project are owned by the partner that generates them and in the cases when more than one beneficiary generate jointly any knowledge this is jointly owned by those partners and their rights and obligations are described in a "joint ownership agreement".

5.3 Ground identification

In this section, we will identify partners willing to go to the market, the Porte-parole partner and the nature of activity foreseen for each result by the partner. We intentionally do not provide definite details for partners' willingness to claim rights on background and foreground knowledge, which requires work in the latest stage of the project. This process has not started yet since the project is still at an early stage and the tables below will help us in this effort.

Table 14 Ground Identification

Apart from the yellow boxes, you just need to put a cross "x" where appropriate												
1	Result no											
2	Result title											
3	Result description											
			KTH	TU	IVF	Ossur	LTech	NM	STH	SAS	TWI	Details
4	Partners willing to go to the market											
5	Porte-parole partner											
6	Partners providing background knowledge willing to claim rights											
7	Partners providing background knowledge NOT willing to claim rights											
8	Partners providing foreground knowledge willing to claim rights											
9	Partners providing foreground knowledge NOT willing to claim rights											

			FREE	NEGOTIATION	NO	
			In case all the partners agree to transfer the exploitation rights to the business team	In case there is still room to clarify the IP/IPR	In case at least one partner do not agree to transfer the rights (VETO)	
10	Status as regard the exploitation right from other partners					

			KTH	TU	IVF	Ossur	LTech	NM	STH	SAS	TWI	Details
11	Nature of activity foreseen for this result by the partner	M										Manufacturing, Realisation
		A										Assembly
		R										Research
		C										Consultancy, Training
		U										Utilisation in other business
		SD										Sale, Distribution
		S										Services

		YES	NO	
12	Consensus Rights Transfer to the group			
13	Ad hoc Partnership building			
14	New legal entity			
15	Single engagement			

5.4 Risk Analysis

5.4.1 Risk Factors

Next we will identify the risks and potential obstacles for exploitation and analyse how to address them. Once the risks are pointed out, we will evaluate the likelihood of their occurrence and estimate the impact they might have on the project, and at the same time define actions which could prevent the identified risks. The risks will be divided into six categories:

- technological risks
- partnership risks
- market risks
- IPR/Legal Risks
- Financial risks
- Health and Safety/Environmental Risk Factors

Table 15 Risk Analysis:

No of risk	Description of Risk	Importance of the risk (1 low- 10 high)	Probability of Risk (1 low- 10 high)	Risk Grade	Scope and type of potential intervention	Feasibility/ success of interventio n (1 low- 10 high	Priority Level
Partnership Risk Factors							
P1	Disagreement on ownership rules				●A clear Consortium Agreement has been signed before the project official start date. ●The commercialization Manager of the project will ensure that all the knowledge generated in the project is managed as agreed in the Consortium Agreement.		
P2	Partners with divergent exploitation interests				●The commercialization Manager of the project will monitor and coordinate the exploitation efforts.		
Technological Risk Factors							
T1	The data provided by existing sensors are insufficient (either due to low spatial resolution, or due to limited information e.g. only pressure). Their capability in providing comprehensive dynamic biomechanical data is not proven				●New QTSS sensor assembled from QTSS materials which are anisotropic and give a 'true' pressure/force reading based on the "AREA" of the pressure/force applied to them. They are compatible with open source software such as Arduino that can measure x, y position and z pressure/force. The QTSS materials will be developed into new sensors specific for the SocketSense project by selecting the most suitable substrates to form the sensor assembly.		
T2	Biomechanical models and algorithms are limited to static test or without considering the change of the soft tissue at various conditions				●New biomechanical models and algorithms will consider all relevant information including changes in soft tissue properties and sensor data over an extended period of time (many weeks or more). A new and optimised socket will be produced automatically without the need for the patient to go to a clinic in advance for diagnosis.		

T3	Socket design practices are highly subjective by a "feel and touch" approach. The quality of service is difficult to guarantee.				●The new SocketSense procedure will be based on quantitative, dynamic, and comprehensive data, hence will lead to reliable results. Clinical trial test will be carried out to validate the whole system.		
T4	Software for rapid design of socket based on comprehensive dynamic biomechanical data does not exist				●New software to be developed in the project will integrate various modules in a unified package: soft tissue assessment, sensor data collection and analysis, interactive 3D morphologic adjustment of an existing socket or a new check socket based on the biomechanical analytical model, and the generation of a final definitive socket 3D solid model.		
Market Risk Factors							
M1	Performance of the SocketSystem is lower than the expectations of the end users/market				●Extensive testing of the socket system with end users. Involvement of them during the design process ●Examine in detail the features offered by competing technologies.		
M2	Hesitation and risk of new devices usage in diagnosis for critical diseases				●Through validation of the proposed technology, certification, and proper dissemination/ exploitation strategy and user-friendliness of proposed solution will be made sure in the SocketSense project to address this barrier.		
IPR Risk Factors							
I1	Patent applications by the project partners are rejected or it is easy to counterfeit any patents.				●Implement a detailed IP scouting in the early stage of the project to identify the patenting options and establish the optimum way to protect the results. ●Identify claims that differentiate the SocketSense IP from		

					"competing" IP ●Invite an IP expert in a session.		
I2	Potential IPR dispute among project partners				●Project partners have signed a CA that stipulates the access rights to foreground knowledge created during the project and to background knowledge needed for the research or exploitation of the foreground results. ●Discuss in detail the IP strategy among project partners		
Financial Risk Factors							
F1	High Development cost until market introduction				●Demonstrate the financial gains and the market opportunity via a detailed financial model in the business plan.		
Health and Safety/Environmental Risk Factors							
E1	Socket system does not comply with industry/health regulations and standards				●Consult regulation experts and policy makers		

This table will be regularly updated.

5.5 Use of Project results

5.5.1 Roadmap for exploitation measures after the project's lifetime

We will use the following table to specify what type of exploitation is foreseen after the project's end for each result.

In our analysis we will also take into account, whether the exploitation is hindered by confidentiality, what application sectors are relevant for the exploitation and what timetable is envisaged. Additionally, it should be indicated whether IPR measures are taken or intended and which of the beneficiaries/ partners are involved. This will be done aligned with the leader of the corresponding task.

Table 16 List of Future Exploitation Measures per Exploitable Result

Exploitable project result	Type of exploitation	Confidential	Forseen embargo date	New product /process /service	Sector(s) of application(s)	Timetable, commercial or any other use	IPR Measures taken or intended	Owner & other partner(s) involved

5.5.2 Key Exploitable Results Priority Map

The evaluation and the classification of the project Exploitable Results will be carried out through the use of the SMART criteria. Results which are specific, measurable, achievable, realistic and time-framed have more chances to be better exploited. Each result will then be double-checked with potential risks related to the IPR issues and the partnership.

Table 17 Important Stakeholders for the SocketSense project

Key exploitable Result:	Degree of importance of the risk related to the final achievement of this Key Exploitable Result. (1 low- 10 high)	Probability of risk happening (1 low - 10 high)	Risk Grade	Scope and type of potential intervention	Feasibility/Success of Intervention (1 low- 10 high)	Priority Level
Partnership risk						

factors						
P1						
P2						
Technological risk factors						
T1						
T2						
T3						
T4						
Market risk factors						
M1						
M2						
IPR risk factors						
I1						
I2						
Financial risk factors						
F1						
Health and Safety /Environmen						

tal Risk Factors						
H1						

For each exploitable result we will create a priority map using the template below:

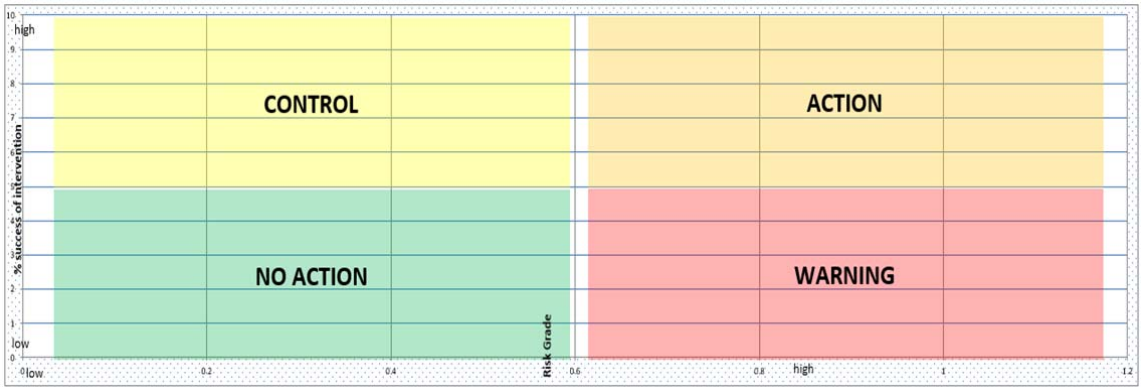

Figure 7: Priority map for Exploitation result x

5.6 Market Assessment

We will then perform market assessment to properly evaluate SocketSense exploitation results and their prospect position on the market. The assessment identifies and examines relevant markets and evaluates the opportunities for the exploitable results.

As a first step we will identify industries with significant potential and then analyze its corresponding markets. Market analysis will include the following sections:

- Market (demand, volume, competitors, future trends)
- Industry (production, main players and producers – potential stakeholders) Related/overlapping patents
- Competing products/projects
- Other commercial initiatives

ANNEX 1 – Dissemination Event Report Template

Event	Name of the event
Date	Date of the event
Location of event	City, country and venue where event was held
Consortium Member	Name of the SocketSense Consortium partner organization that participated
Name of individual	Name of individual person from the organization that participated
Role in the event	Presenter, organizer, attendee?
Audience at the event	How many?
	Who was the audience? Types of organizations/people attending.
	☐ Scientific community ☐ Medical professionals ☐ Policy Makers ☐ Investors ☐ Customers ☐ Industry ☐ Civil society ☐ Media
	☐ Others (Please specify):
URL	include URL if it was advertised/promoted
Presentation given (if applicable)	Which presentation did you give? File name or attach file
Responses/feedback	Questions raised; comments/feedback received; Other comments
Ongoing contacts/connections	Has there been any ongoing contacts as a result of this event?
Other comments	Any other comments/notes

ANNEX 2 – Dissemination Point of Contacts

Consortium Partner	Dissemination Point of Contact	email	Phone