



Functionalized Soft robotic gripper for delicate produce harvesting powered by imitation learning-based control

D7.4 INTERIM REPORT ON DISSEMINATION AND COMMUNICATION ACTIVITIES

Deliverable Number	D7.4
Work package Number and Title	WP7 Dissemination & exploitation
Lead Beneficiary	SSSA
Version - Status	final
Due Date	30 Jun 2022
Deliverable Type¹	R
Dissemination Level²	PU
Internal Reviewer	TEAGASC
Filename	D7.4_Interim Report on Dissemination and Communication Activities

¹ Please indicate the type of the deliverable using one of the following codes:

R = Document, report

DEM = Demonstrator, pilot, prototype

DEC = Websites, patent filings, videos, etc.

ETHICS = Ethics requirement

ORDP = Open Research Data Pilot

DATA = data sets, microdata, etc.

² Please indicate the dissemination level using one of the following codes:

PU = Public

CO = Confidential, only for members of the consortium (including the Commission Services)



Document info

Authors

Surname	First name	Organization
Maselli	Martina	SSSA
Cianchetti	Matteo	SSSA

Internal Reviewers

Surname	First name	Organization
Uccello	Andrea	TEAGASC
Grogan	Helen	TEAGASC
Vari	Marianna	TWI
Kalesi	Irene	TWI

Document History

Date	Version	Editor	Change	Status
10/06/22	v1.0	SSSA		Creation
28/06/2022	v1.1	TEAGASC	Minor formatting amendments and a few comments	Reviewed and returned to authors
29/06/22	v1.2	TWI	Integration of some metrics and review	Sent to the authors
29/06/22	V2.0	SSSA	Final edit after review	Sent to PIs
30/06/22	Final	SSSA		Submitted

TABLE OF CONTENTS

1 Introduction	4
1.1 Dissemination and Communication plan.....	4
2 Dissemination and Communication Channels	4
2.1 Project website	5
Number of users	5
Sessions	6
Page views	7
2.2 Social media channels	7
Linkedin	8
Twitter	9
Youtube	10
2.3 Collaborative Space	10
2.4 On-line repositories	11
Zenodo project page	11
3 Dissemination and Communications activities	12
3.1 Publications	12
3.2 Events	15
3.3 Networking	19
4 Key Performance Indicators	19
5 Conclusions	21

1 INTRODUCTION

This deliverable gives an overview of the dissemination and communication activities of the SoftGrip consortium in the first 18 months of the project. Dissemination and communication activities are under continuous monitoring of the WP7 Dissemination & Exploitation Work Package Leader SSSA and the Dissemination & Exploitation Manager, TWI.

Dissemination and communication (D&C) activities are crucial to the project's overall success and serve as the driving force to maximise the impact of the project. These activities are important from the project start in order to reach the widest possible audience of the project and facilitate the use and take-up of results.

D&C activities are carefully planned, continuously implemented and regularly monitored during the whole duration of the project. All project partners are involved in dissemination and exploitation in order to foster awareness and transfer results for impact, especially in their own countries and in their own communities.

D&C activities are carried out according to *D7.2 Dissemination and Communication Plan* which analyses the dissemination target audiences and match them with the project goals, dissemination strategy approach, the project communication tools and dissemination events. It is a living document, and it is updated throughout the project duration in order to reflect the project advancement and accommodate any customisation required. The progress on D&C activities is reported in the present deliverable *D7.4 Interim Report on Dissemination and Communication Activities*, and it will be updated in the final version at M36 with a deliverable, namely *D7.5 Final Report on Dissemination and Communication Activities*.

1.1 DISSEMINATION AND COMMUNICATION PLAN

The Dissemination and Communication Plan is incorporated in D7.2. Dissemination activities have increased via the website and via social media activities. In particular, last period has seen a significant increase in media coverage, invited talks and talks and posters at conferences.

Responsibility for the update of D&C activities for the website and for social media has been taken on by Dissemination & Exploitation Manager, TWI. However, as the Leader of WP7 "Dissemination & Exploitation", SSSA (Project Coordinator) also plays a strategic role in the D&C activities.

SSSA continuously keeps record of partners' D&C activities in a template developed for this purpose by the Dissemination & Exploitation Manager and included in the bi-monthly reports, which are filled by all partners every 2 months and uploaded on the website storage of the project. Furthermore, bi-monthly online meetings of SoftGrip consortium are organised and serve also the purpose of continuous planning, supervision and improvement of D&C activities.

Most dissemination will be based on work done by the consortium, and in the coming period we expect to further increase our dissemination through publications in journal articles. We are starting to prepare manuscripts for publication in journals, which will provide the basis for also all other dissemination activities.

The current deliverable analyses the D&C activities of the consortium carried out during the first half of the project. It gives an analytic presentation of the performance of our digital channels, our participation in physical and online events, our publications, etc.

2 DISSEMINATION AND COMMUNICATION CHANNELS

A set of specific D&C channels were set up at the beginning of the project, all of them based on the use of different digital tools. Nowadays, digital tools are the backbone of communication between an initiative and its

target audience. SoftGrip has devoted significant efforts towards its digital tools, especially social media, not only for exposing its outcomes to the target groups, but also for creating a community around the project interested in the adoption of innovative technology by fresh-food industries.

2.1 PROJECT WEBSITE

The D&C of the project is organised using several different channels. One of the main D&C channels is the project website: **softgrip-project.eu**. The website was set up at the beginning of the project and went online in March 2021, therefore Google analytics data are available from 1st April 2021. The website is hosted and maintained by the Project Coordinator, SSSA.

SoftGrip website is our main gateway. It includes all relevant information about the project and news related to our activities. More details regarding the website design and structure can be found in *D7.1 Project website and promotional material*.

Access to the project website is monitored and reported upon using the Google Analytics toolbox that is implemented since March 2021. A summary of information about access to the SoftGrip site obtained from Google Analytics toolbox is reported below. However, being aware of the latest news³, we are considering an alternative solution.

NUMBER OF USERS

The number of users of the website in the first 18 months were 1,474 users. The biggest number of users was in December 2021, which coincided with the end of the first year of the project. An illustration of the number of users accessing the website through the first 18 months is shown in Figure 1.

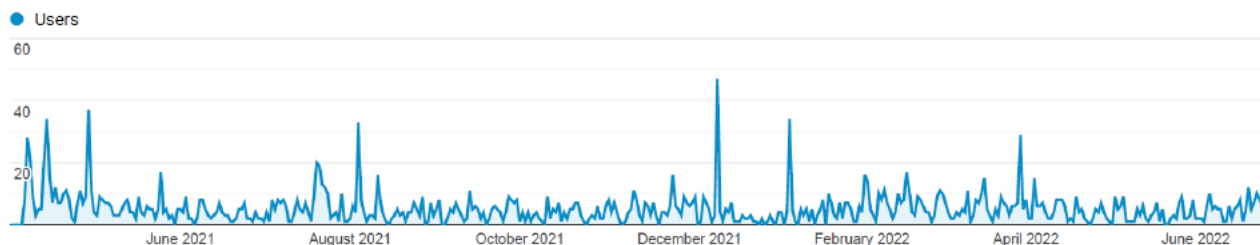


Figure 1 Graphic of growth of SoftGrip website users (1st April 2021 to 25th June 2022) (Source: Google Analytics).

Of the users of the website, 85.4% are new visitors, as illustrated in Figure 2.

³ <https://www.itechpost.com/articles/111624/20220627/google-analytics-google-italy-france-austria.htm>

■ New Visitor ■ Returning Visitor

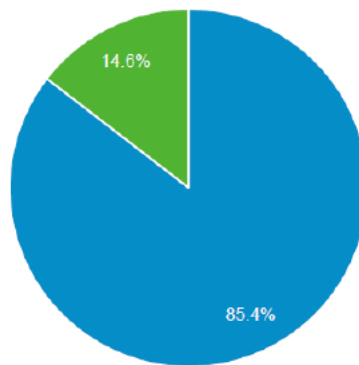


Figure 2 Number of users of the SoftGrip website, new and returning (1st April 2021 to 25th June 2022) (Source: Google Analytics).

The users of the SoftGrip website are from several different countries. The highest number of users are from Greece, the United States and Italy. The proportion of users for the top 10 countries is shown in Figure 3.

Country	Users	% Users
1.  Greece	288	19.34%
2.  United States	240	16.12%
3.  Italy	231	15.51%
4.  United Kingdom	124	8.33%
5.  Ireland	94	6.31%
6.  China	60	4.03%
7.  Germany	60	4.03%
8.  India	44	2.96%
9.  Netherlands	32	2.15%
10.  Japan	28	1.88%

Figure 3 User's Demographics distribution (1st April 2021 to 25th June 2022) (Source: Google Analytics).

SESSIONS

There was a total number of 2,706 sessions occurred in the 18 months of the project. On average, a user visited the website almost twice (1.84) and a session lasted 2 minutes and 14 seconds (Figure 4).

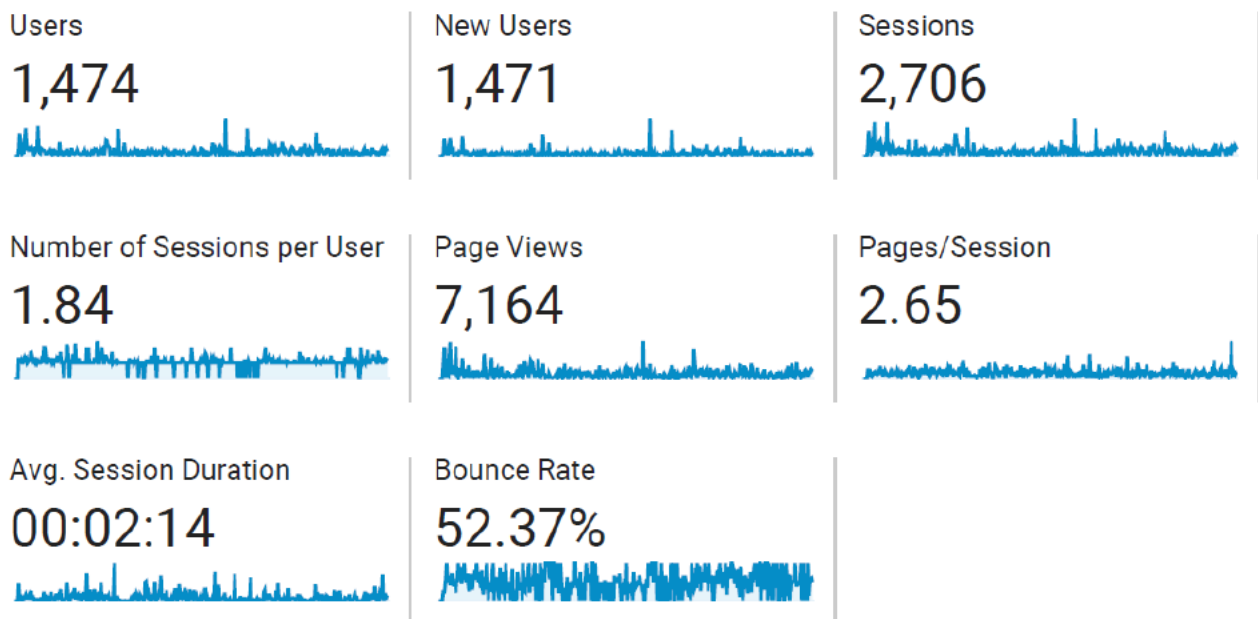


Figure 4 Website statistics (1st April 2021 to 25th June 2022) (Source: Google Analytics).

PAGE VIEWS

The total number of pages viewed was 7,164 (including repeated views of a single page) (Figure 5).



Figure 5 Graphic of SoftGrip page views (1st April 2021 to 25th June 2022) (Source: Google Analytics).

2.2 SOCIAL MEDIA CHANNELS

D&C activities are actively carried out through project social media channels. A LinkedIn page is used to reach the professional audience, and Twitter is aimed at reaching both professionals and the general public. The social media channels are presented in more detail in *D7.1 Project website and promotional material*.

Responsibility for social media channels is executed by the Dissemination & Exploitation Manager, TWI. Partners use both personal and organisation accounts (LinkedIn, Twitter, Facebook) to carry out communication and dissemination activities.

Access to the project social media channels is monitored and reported upon using the tools provided by each channel.

LINKEDIN

Figure 6 shows the distribution of LinkedIn clicks through the first 18 months of the project, and Figure 7 the engagement as organic impressions.

LinkedIn Post Clicks vs Time

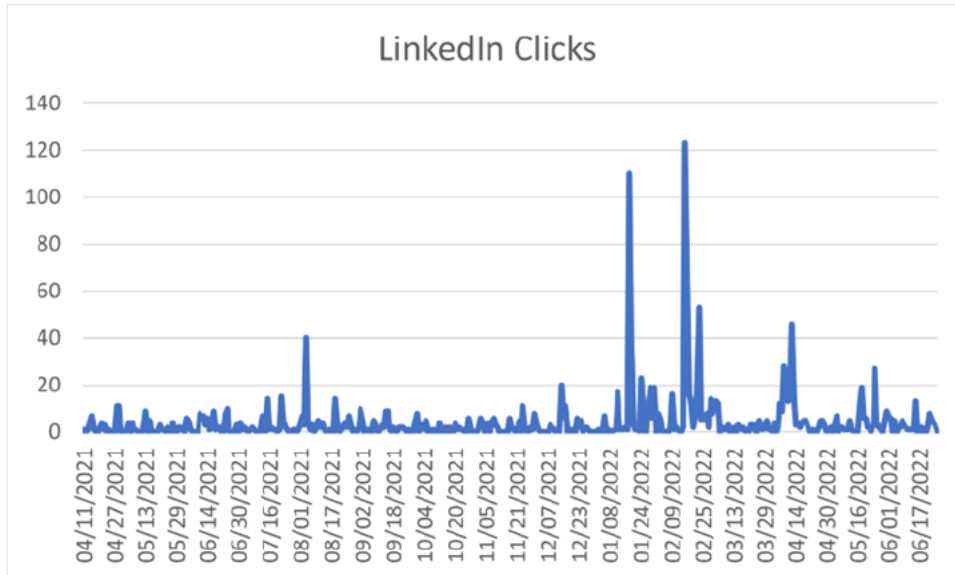


Figure 6 Total number of clicks over time (March 2021 – June 2022).

Post Impressions vs Time

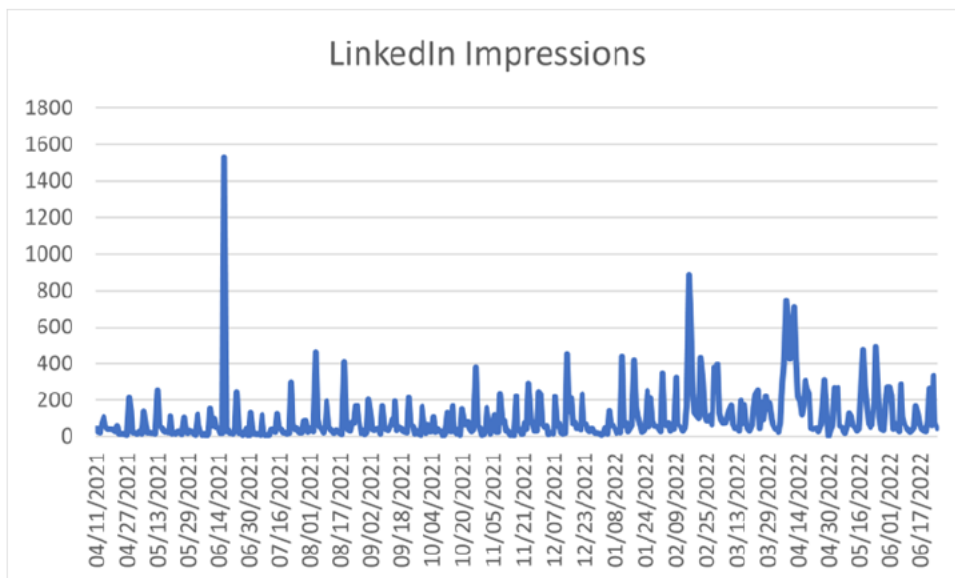


Figure 7 Posts impressions for organic content (April 2021 – June 2022).

Post Reactions vs Time

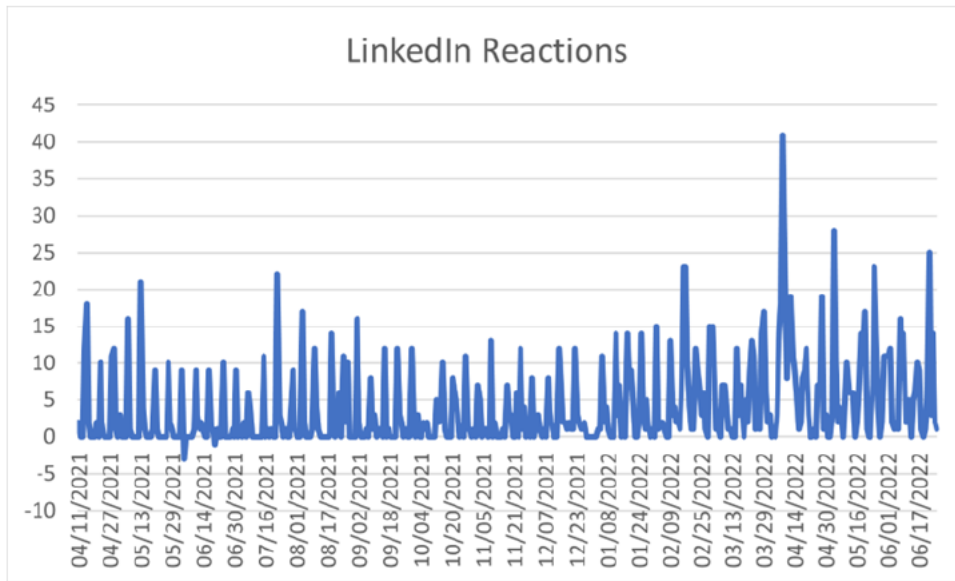


Figure 8 Number of post reactions by followers (April 2021 – June 2022).

On the LinkedIn project account, there are 256 followers. Information is posted 3-4 times per week and the total amount of posts is 108. The top 3 posts on the SoftGrip LinkedIn page obtained 3,515, 1,790, and 1,750 impressions respectively. The most popular post was about an interview with one of the voices of the agritech revolution. The second most popular post was about the first SoftGrip physical meet-up at Teagasc in Dublin. The third most popular post was about labour shortage according to Teagasc and the Irish Examiner and the change that the SoftGrip solution can bring about. Table 1 contains values for metrics relating to the SoftGrip LinkedIn page.

Table 1 Analysis of metrics of SoftGrip LinkedIn page.

Metrics	Number
Total number of followers	256
Total number of original posts	108
Impressions	43,553
Clicks	1,755
Likes	1,693

TWITTER

The number of Followers on Twitter is 125. Of the 104 Tweets from the SoftGrip account, there were 383 Likes. Table 2 contains values for metrics relating to the SoftGrip Twitter account.

Table 2 Analysis of metrics of tweet activity.

Metrics	Number
Total number of original tweets	104
Impressions	12,520
Engagements	745
Likes	383
Retweets	89

Information is posted on Twitter 2-4 times a week. During the first 18 months of the project there were 104 posts tweeted. The top project tweet was posted in April 2021. It was about the project's kick-off meeting and got 524 impressions.

YOUTUBE

Since M4, we have created our YouTube Channel that we use to upload and share our own videos. We have created and shared 2 videos that have attracted 244 views on SoftGrip YouTube Channel. However, the video "A day in the Life of a Scientist" is an intellectual property of Teagasc, which allowed the upload on the condition that the full credit would be given to Teagasc. For this reason, in the Table 3 both the views achieved on SoftGrip YouTube channel and the video views of the original video uploaded by Teagasc are reported.

Table 3 YouTube public videos.

Title	Views	Screenshot
A day in the Life of a Scientist- Andrea Uccello, Teagasc	9	
A day in the Life of a Scientist – Andrea Uccello, Teagasc	205 – views on Teagasc's YouTube channel where the video was originally posted.	
SoftGrip at ERF2021	234	

2.3 COLLABORATIVE SPACE

In order to fulfil also the data management plan requirements, since M10 a SoftGrip collaborative space (i.e., hosting type and space, etc) was realised by using SharePoint from Microsoft. The collaborative space that was created by the Project Coordinator included 23 team members of the consortium. All the included members can upload and modify files and folders. This allows the possibility to work online and in a collaborative way between partners on different documents. The team members visualised and uses the

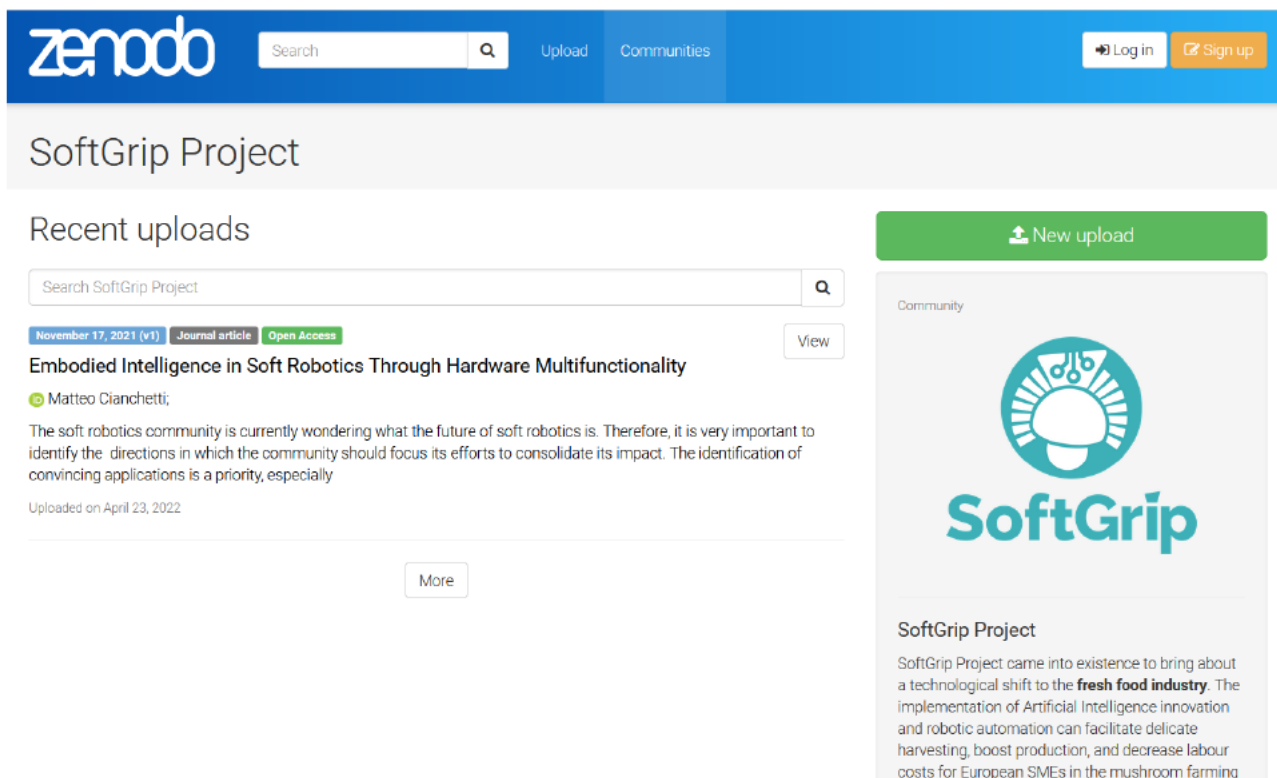
SharePoint site at least 135 times. The SoftGrip collaborative space is used for different purposes: (i) work online on document (i.e. deliverables, reports); (ii) share data and publications; (iii) share useful literature and information; (iv) track the internal meetings that take place through the project life.

2.4 ON-LINE REPOSITORIES

ZENODO PROJECT PAGE

SoftGrip project has been fulfilling and supporting the Open Access principle from day one. Open Access helps other projects and initiatives to build upon previous research results, improving their overall quality, encouraging collaborations while avoiding the duplication and the wasting of resources. It speeds up innovation, and faster progress in the market translates to faster growth. Lastly, everyone in the society is involved, which brings about more transparency of the scientific process.

For that reason, we have released the SoftGrip community page through ZENODO (Figure 9): <https://zenodo.org/communities/softgrip21/?page=1&size=20>.



The screenshot displays the Zenodo website interface. At the top, there is a blue navigation bar with the Zenodo logo, a search input field, and buttons for 'Upload' and 'Communities'. On the right side of the navigation bar, there are 'Log in' and 'Sign up' buttons. Below the navigation bar, the page title 'SoftGrip Project' is prominently displayed. The main content area is divided into two columns. The left column, titled 'Recent uploads', contains a search bar for 'SoftGrip Project' and a list of uploads. The first upload is 'Embodied Intelligence in Soft Robotics Through Hardware Multifunctionality' by Matteo Cianchetti, dated November 17, 2021, and is marked as a 'Journal article' and 'Open Access'. The right column features a green 'New upload' button and a community profile card for 'SoftGrip Project'. The profile card includes the SoftGrip logo and a brief description of the project's mission to bring about a technological shift to the fresh food industry.

Figure 9 SoftGrip community page on Zenodo.

Zenodo is the OpenAIRE repository hosted by CERN. The OpenAIRE project, in the vanguard of the open access and open data movements in Europe and was commissioned by the European Commission to support their Open Data policy by providing a catch-all repository for European Commission funded research. In line with the Data Management Plan (*D1.3 SoftGrip Data Management Plan*) Zenodo will be used to provide open access to project results and databases.

3 DISSEMINATION AND COMMUNICATIONS ACTIVITIES

This section reports on dissemination, communication, and impact of project activities during the first 18 months of the project. It was prepared using data provided by project partners in their bi-monthly reports (one per partner, per bi-month).

3.1 PUBLICATIONS

During the first half of the project, SoftGrip has released **2 peer-reviewed articles**, **2 conference proceedings**, **1 conference poster**, **3 newsletter articles**, **3 magazine articles**, and **1 press-release** (Table 4).

Table 4 SoftGrip Publications M1-M18.

Main Author	Title of publication / article	Name of journal / magazine / newsletter / conference	Type of publication	Status	Date of publication	DOI / Link	Open access	Comments
TEAGASC	SoftGrip	Teagasc Mushroom E-bulletin, Jan 2021	Newsletter	Published	January 2021		No	Not publicly available Introduction to the SoftGrip project
SSSA	Actuation Technologies for Soft Robot Grippers and Manipulators: A Review	Current Robotics Report	Journal	Published	May 20, 2021	DOI	Yes	
TEAGASC	Gentle robots	TResearch, Spring 2021, p7	Magazine	Published	March 2021	link		Introduction to the SoftGrip project
TEAGASC	Gripping mushroom research	Horticulture Connected, Spring 2021, p6	Magazine	Published	May 2021	link	Yes	Introduction to the SoftGrip project
ICCS-NTUA	Task Driven Skill Learning in a Soft-Robotic Arm	2021 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2021)	Conference paper	Published	September 2021	Open access link	Yes	Published in IEEE Xplore
THL	SoftGrip Robotic Grippers Imitate Human Harvesting Skills	TWI Global & TWI Hellas website	Press release	Published	Sep 29, 2021	link	Yes	
SSSA	Embodied Intelligence in Soft Robotics Through Hardware Multifunctionality	frontiers in Robotics and AI	Journal	Published	Nov 17, 2021	DOI	Yes	

Main Author	Title of publication / article	Name of journal / magazine / newsletter / conference	Type of publication	Status	Date of publication	DOI / Link	Open access	Comments
ICCS-NTUA	Reproduction of Human Demonstrations with a Soft-Robotic Arm based on a Library of Learned Probabilistic Movement Primitives	IEEE International Conference on Robotics and Automation (ICRA' 2022)	Conference paper & poster	Accepted	May 2022	Open access link	YES	Final paper submitted for inclusion in the Proceedings; Preparation and submission of a video presentation to be included in the Conference Program
THL, Essex	Mushroom Detection and Pose Estimation Using Instance Segmentation and Model Fitting	IEEE International Conference on Robotics and Automation (ICRA '22) Workshop on Agricultural Robotics and Automation	Poster & video	Accepted	May 2022		Yes	
TEAGASC	Update on EU-funded SoftGrip project on robotic harvesting of mushrooms.	Teagasc Advisory - Mushroom E-bulletin 1, March 2022	Newsletter	Published	March 22		No	Not publicly available
SSSA & THL	Interview with SoftGrip coordinator	agROBOfood newsletter #22	Newsletter	Published	April 22	link	Yes	
TEAGASC	Next generation robotics - A soft gripper for delicate mushrooms?	Mushroom Business	Magazine		To be published in late June/July 2022		No	Subscription magazine for mushroom sector worldwide

3.2 EVENTS

During the first half of the project, SoftGrip partners participated in a variety of events in the field of soft robotics, robotics, AI / machine-learning, agricultural automation, agri-food, in order to increase the project visibility and reach further audiences with a wide range of backgrounds (Table 4).

Table 5 SoftGrip events M1-M18.

Name of event	Date	Location (Country /City)	Type of event	Status (Planned /Attended)	Partner	Contribution (organise / participate)	Type of audience											Size of audience	Website	Comments			
							Scientific community	Industry	Robotic manufacturers	Agri-food sector	Civil Society	General Public	Policy Makers	Media	Investors	Customers	Other				If Other, please specify		
European Robotics Forum 2021	April 13-15, 2021	Virtual	Conference	Attended	SSSA	Participate (presentation)	X	X	X						X	X					800	Link	Video presentation of the project in the session " New Horizon 2020 Robotics projects "; Video is available on YouTube .
European Researchers' Night	Sep 24, 2021	Livorno (Italy)	Exhibition	Attended	SSSA	Participate (with stand)	X							X	X				X		100	Link	Dissemination consisted in explaining the general objectives and methodologies of the project and display the first version of the SoftGrip fingers.

2021 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2021)	Sept 27 – Oct 1, 2021	Hybrid (virtual & Prague, Czech Republic)	Conference	Attended	ICCS-NTUA	Participate (live spotlight presentation & video presentation)	X	X	X											~2000	Link	Live Spotlight presentation, accompanied by a Video presentation, of the paper titled: “Task Driven Skill Learning in a Soft-Robotic Arm”, Authors: Paris Oikonomou, Athanasios Dometios, Mehdi Khamassi and Costas S. Tzafestas	
TEAGASC Science Week 2021	Nov 12, 2021	Ireland, Dublin	Festival	Attended	TEAGASC	Video					X	X									143	Link	A short video introduction for the “A day in the life” series was published for the Teagasc Science Week 2021. The video targets mainly students.
TWI Innovation Network Summit	Nov 16, 2021	Virtual	Summit	Attended	TWI	Participate with a presentation	X	X													150	-	The SoftGrip project was presented during this event by TWI Hellas. The recording of the event is available on YouTube (SoftGrip presentation at 30:02).
Meeting between Mycionics Inc.	Dec 7, 2021	Virtual	Meeting	Attended	ALL	Discussion				X											20	-	A mushroom enterprise developing their own robotic harvesting system. They would

3.3 NETWORKING

As part of the project dissemination strategy, the SoftGrip consortium will also disseminate project results through participating in networking and informal personal meetings. Whenever possible, official presentations will be used to present the project results and achievements at different stages of project development.

Indeed, during this reporting period, a serious effort has been done to contact interested user groups and stakeholders, in order to create synergies that would be helpful for both sides.

As reported in the table above, the SoftGrip consortium had the possibility to present the project with a company called Mycionics, a mushroom enterprise developing their own robotic harvesting system. They would like to engage with the SoftGrip team to see if there are opportunities for collaboration. In addition, an interesting networking has started with the Italian Mushroom Growers Association (Associazione Italiana Fungicoltori - AIF). SSSA presented the project to the Board of the Italian Mushroom Association on March 3rd, 2022. The discussion was interesting and mainly focused on how the Italian mushroom growers could be interested in our project, how they can integrate the soft gripper into their farms and facilities, and how they can be involved in the project also during the next year. They offered us the possibility to visit the Italian farms and know the picking methods used here in Italy (which seem to be slightly different from those used in Ireland - although the Irish method is the standard for Europe).

SoftGrip will link in particular with the Horizon 2020 project agROBOfood (www.agrobofood.eu). The agROBOfood project, a consortium of 39 partners, aims to build a European ecosystem for the effective adoption of robotic technologies in the agri-food sector. For this purpose, THL contacted the agROBOfood project coordinator in order to explore the possibility to introduce the SoftGrip project into their newsletter. An article was prepared about SoftGrip (and published in the April issue of the agROBOfood newsletter: <https://agrobofood.eu/newsletter22-interview/>). The article was authored by THL and SSSA and was reviewed by TEAGASC. In the next period, other efforts will be done in order to increase the collaboration with the agROBOfood.

4 KEY PERFORMANCE INDICATORS

For SoftGrip it is very important to keep tracking of our KPIs. Key Performance Indicators (KPI) and analytical measures will be used in order to monitor and assess the impact of communication and dissemination activities. During the second half of the project, we will emphasise on dissemination related KPIs (especially around scientific publications and conferences) while putting more effort on organisation of scientific events. As the project becomes more mature and can reveal more tangible and presentable results, our efforts will lean towards that direction.

In Table 6, the KPIs are presented, together with the target values and the achieved ones during this first reporting period.

Table 6 Key Performance Indicators for Dissemination & Communication Activities.

Dissemination & Communication activity	Key Performance Indicators	Target value	Where we stand
Project Website	Number of visits to project website	>7,000	2,706
Social media & online presence	Footprint in different social networks: Number of followers	>1,000	381
	Number of posts	>300	212
Video presentation	Number of promotional videos and video tutorials	>2	2
Video presentation	Number of viewers of project audio-visual material in YouTube	>1,000	244
Publications, Scientific papers	Number of research publications in high impact scientific journals and esteemed conferences	>5	4
Press releases	Number of press releases	>3	1
	Number of articles in local-regional-national press	>5	3
Participation to events	Number of events attended: Conferences	>10	4
	Workshops	>3	2
	Industry related events	>3	3
	Presentation in conferences	>5	3
Organisation of events	Number of workshops organised	>2	-
	Number of conferences organised	>1	-
Promotional material	Number of project promotional material: Flyer	>1	1
	Banner	>2	1
	Poster	>2	1
	Brochure	>1	1
Direct contact with stakeholders	Number of direct contacts with target customers	>30	2
Networking	Number of project liaisons	>3	1
	Number of meetings with liaised projects & initiatives	>2	1

5 CONCLUSIONS

According to SoftGrip GA, the main objective of this deliverable is to present the dissemination tool and communication activities results for the first reporting period M1-M18. Therefore, the document provides a report on digital communication tools, publications, events, other dissemination activities carried out during the first half of the project.

The actions carried out by the partners are diversified, ranging from publications, participation to conference and related events, publishing project information on SoftGrip website, placing special effort in disseminating the project outreach via social media channels. Moreover, the implementation of the D&C Plan will be continuously monitored and assessed through KPIs.

This deliverable is a living document and the progress on dissemination & communication activities will be reported in the complete version of this deliverable, namely in *D7.5 Final Report on Dissemination and Communication Activities*.