

D9.1 – Project Website

Project Information

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Project Acronym	SINTEC
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Duration	48 months
Project Coordinator	Klas Hjort (UU)
Project Website	http://www.sintec-project.eu

Deliverable Information

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Contributing Partners	All
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Contributors	Isella Vicini, Elisa Alberti
Reviewers	All WP leaders
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Dissemination Level

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

Document Log

Version	Date	Description of Change
V1.0	18/03/2019	First draft prepared and sent to WP leaders for review
V1.0	26/03/2019	Coordinator approval

Table of Contents

1	Executive Summary	4
2	Introduction.....	5
3	Main Objectives.....	6
4	Description of work	7
4.1	Public Website	7
4.1.1	Home Page.....	7
4.1.2	Project.....	10
4.1.3	Partners	13
4.1.4	News and Events.....	14
4.1.5	Publications	15
4.1.6	Media.....	16
4.1.7	Contacts.....	18
4.1.8	Download.....	19
4.2	Private Area	20
4.3	Web 2.0 Social Media	21
5	Conclusions.....	23

1 Executive Summary

Deliverable 9.1 is a report on SINTEC Project Website, which can be considered as one of the most relevant dissemination tools to be used by the project consortium in order to reach the largest audience possible, including groups beyond the project's own community and communicate project progress and results for promoting the project at European level.

The website includes also a direct link to the SINTEC' collaborative platform – EMDESK (for a detailed overview refer to D1.2 "Project Collaborative Space") to which only project partners have access.

Therefore, the main content of this document is focused on the description of the project website in terms of design, structure and contents.

2 Introduction

The development of the website of SINTEC project is one of the activities related to WP9 dealing with the Exploitation, Dissemination and Communication activities of the project.

Warrant Hub S.p.A. has been in charge of the setup of the website that is continuously updated with the assistance and the advice of all the project partners.

The website can be found in the following URL: <http://www.sintec-project.eu/>

3 Main Objectives

Project websites are one of the main communication tools of projects funded under the EU H2020 Programme. To ensure maximum visibility to the SINTEC objectives and results, WG has set up a project website registered in the “eu” domain and with intuitive URLs to increase hit rates:

<http://www.sintec-project.eu/>

The design of the website builds upon the following criteria and taking into account suggestions given in the EU Project Websites – Best Practice Guidelines (EC, 2010):

- i. **Visual communication:** use of colours and/or photos, web pages are easy to browse, information is kept short and links are included to websites, publications, and so on.
- ii. **Verbal communication:** the website uses simple phrasing, no jargon is used in order to attract the widest possible audience, e-devices are user friendly.
- iii. **Visibility:** maximum use of free or affordable methods to increase page ranking on search engines, Webmaster Tools provided by search engines to check indexing status; good cross-linking between the different pages of project site and other sites, add keywords to the web page metadata, use frequently used keyword search phrases both in the metadata and in the contents pages.
- iv. **Regular update of contents:** the website is maintained by WG and the update will be regularly done by the Webmaster upon inputs of the Project Dissemination Manager and of partners, the social media accounts (e.g. social networks such as LinkedIn, Twitter, YouTube, Research Gate) have been considered and created.
- v. **Monitoring and feedback tools:** the website includes a counter of visitors or other statistical tools that will be used to measure the number of visits.

4 Description of work

4.1 Public Website

The website, functional in three months after the project start, foresees a study on information architecture to enable the evaluation of the logic and semantic organizational structure to identify their usability and accessibility. In this view, a SEO (Search Engine Optimization) study will be carried on to improve project placement within the search engines for a better localization, analysis and reading of the web site.

The public section of SINTEC website provides:

- A brief overview of the project and further details about its objectives, contents, structure, expected results;
- The composition of the project consortium, a short presentation of each partner and its related role in the project, the links to the partners' website, the contacts of the Project Coordinator, Klas Hjort, and the Project Manager, Isella Vicini;
- Access to the project public deliverables and to dissemination material prepared (e.g. leaflets, posters, press release and presentations);
- Information about SINTEC events, such as SINTEC meetings and workshops, as well as conferences and external events where the project will have and active role (e.g. presentation of paper(s), organisation of sessions, stands with demos, etc.).

The public website has several sections and sub sections devoted to present the project to external visitors, all accessible from the home page and described into details in the following paragraphs.

In each section, at the bottom of the pages it can be found:

- The acknowledgement of the EU co-funding, also by the inclusion of the relevant logo claiming that *"This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 824984"*;
- The project details, such as its topic, start/end months, EU contribution;
- The logos of SINTEC social profiles: Twitter, LinkedIn.

4.1.1 Home Page

The home page of the website (see Figure 1) introduces SINTEC project and it gives relevant information about its objectives and structure.

On the top part of the home page, the logo and the full name of the project is clearly displayed.

Below, in the central part of the page, the focus on the project is evidenced along with the main figures of the project:

- The total EU contribution
- The duration of the project
- The number of partners
- The EU countries involved

By scrolling to the bottom of the page (Figure 2), there are the sections dedicated to News&Events, Forthcoming events, Partners, Contacts, SINTEC project details.



Figure 1 Home

News & Events



SINTEC pre kick-off
21 November 2018 – 22 November 2018



SINTEC Kick-off Meeting
January 16 – January 17



1st Technical Meeting
June 27 – June 28

Partners



FIND OUT MORE

Contacts



Klas Hjort
Project Coordinator



Isella Vicini
Project Manager



PROJECT DETAILS

PROJECT TITLE: Soft intelligence epidermal communication platform
START/END: Jun 2019 – Dec 2022
EU CONTRIBUTION: EUR 3,999,262.50
TOPIC: ICT-02-2018 | Flexible and Wearable Electronics



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 824194

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Figure 2 Home

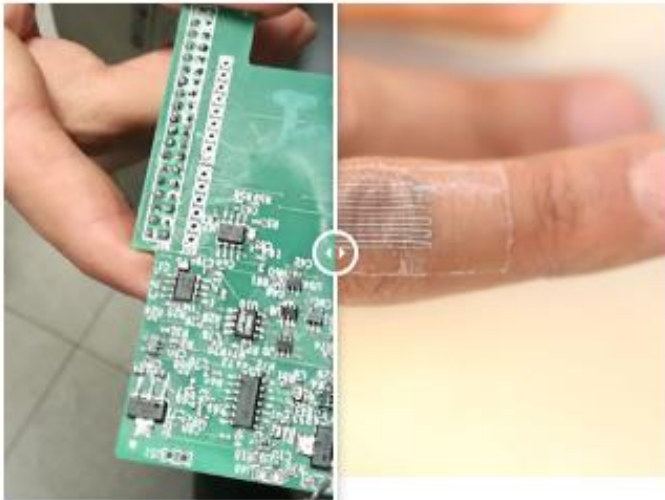
4.1.2 Project

In Project section, the visitor can find the link to the sub-sections dedicated to:

- Project Objectives (Figure 3 and Figure 4), with info about the project aims, main objectives and info about project implementation;
- Expected Results (Figure 5), where the three main results are explained.


Home Project Partners News & Events Publications Media Contacts Q

Project Objectives



The aim of SINTEC is to advance a rigid-stretch PCB technology with stretchable substrate and liquid alloy, and to demonstrate its usability in complex applications, involving wearable sensing, embedded processing, and Fat-IBC. This will substantiate the advantages with this rigid-stretch technology and its improvement area. Industrial manufacturability and cost/scaling issues will be investigated.

Its unique features will enable a ground breaking intra body communication technique that provides secure communication at large bandwidth and low power, allowing for multiplexed sensoric inputs from many sensor nodes on the body.

Our vision is that with its dynamic compliance and water repellent permeable encapsulation the soft, sticky and stretchable smart patch will withstand vigorous action, sweating and water; making it ideal for an active life.

Our vision of smart stretchable patches is an unobtrusive support system that can be used all the time, whatever you do indoors or outdoors – having a walk in the rain, trekking, swimming, taking a shower, biking, or having sex – allowing an active elder person to be warned when slow deterioration in health, e.g., heart, balance, or muscular; or helping a recovering person in a quicker rehabilitation by sensoric support and recommendations from an app without having to be in a physiotherapy institution for too long, e.g. after long illness, stroke or trauma.

The main advantages should be in comfort and that the sensors do not move so much relative to the skin. Hence, its major impact will not be in replacing other wearables but rather providing novel capability, considered to give immense impact on society with new intelligence support, augmenting life in, e.g., nomadic healthcare, fitness, medical technology, social networking, and entertainment. Several companies around the world are investing in stretchable technology and some commercialization has started.










Figure 3 SINTEC objectives

SINTEC main objectives are:



To demonstrate manufacturing of large area rigid-stretch PCB technology stretchable substrate and liquid alloy interconnects (TRL4):

Combining the expertise at UU and MYCRONIC, technologies based on different spray and deposition modules will be used. This will overcome current technological limitation in liquid alloy based stretchable technology, particularly in improving the manufacturability of via interconnects and minimum pitch for electrical contacts to embedded systems.



To demonstrate and compare the advantages of compliant and stretchable multi-use smart patches for Fat-IBC and low-energy Bluetooth (BTLE) communication (TRL4):

The paramount advantages of compliant and stretchable multi-use smart patches in Human Body Communication (HBC) technology will be demonstrated using Fat-IBC and low-energy Bluetooth (BTLE) communication. Using the human fat as a transmission medium will make a faster, reliable and secure HBC modality, which will be a third physical layer in communication network. The results obtained are necessary for developing a realistic human body channel model capable of estimating the performances of wearable systems using such technology.



To demonstrate the advantages of compliant and stretchable multi-use smart patches for electrophysiological sensing (TRL 4):

SINTEC stretchable devices will be tested with regard to current state-of-the-art (SoA) wearable sensors in terms of three main aspects:

1. **Superior comfort**, enabling long term monitoring of physiological signals requiring sensors distributed on a large area of the body. Diagnostic quality (as specified in IEC60601-2-47) multilead electrocardiography (ECG) and impedance cardiography (requiring electrodes close to the neck and at the end of sternum) for the breathing and cardiac output monitoring will be evaluated in the project. Signal quality and output will be compared with SoA sensors, positioned with cables, and the goal is to have a comparable or better signal-to-noise ratio. The comfort and acceptability of the solution will be evaluated through questionnaires in both sport and healthcare scenarios.
2. **Movement artefacts**: with stretchable support a superior adherence of the sensors to the skin is expected, with more stable contact impedance for electrodes and a more repeatable optical path for optic sensors. SINTEC intends to quantify and provide a clear picture about artefacts impact in stretchable substrates, through a comparison of artefacts signal power between SINTEC and reference systems and through body-to-electrodes impedance measurements, obtained with available bioimpedance devices.



To validate the large area rigid-stretch PCB integration technology in laboratory (TRL4):

An important objective of SINTEC is the integration in a stretchable substrate of complex embedded system. We plan the design of modular-partitioned embedded system, with some components embedded directly in the substrate and other pre-assembled in small modules. Pick'n place technology will be used for assembly. Suitable underfill and integrated component embedment should be used. Explored sensors will include optical sensors for photoplethysmography (PPG), pressure sensors for tonometry, as well as electrodes for ECG and bioimpedance acquisition.

PROJECT DETAILS

PROJECT TITLE: Soft intelligence epidermal communication platform
 START/END: Jan 2019 – Dec 2022
 EU CONTRIBUTION: EUR 3,999,262.50
 TOPIC: ICT-02-2018 | Flexible and Wearable Electronics



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 824984

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Figure 4 SINTEC objectives

Expected Results

The SINTEC project is based on the development of manufacturing technology for a ground-breaking novel large-area rigid-stretch PCB technology. The unique properties of this technology will be of advantage especially in systems that today need to have cables to external units or use flexible patches or belts/straps to fixate the sensor to the body. Two applications that will get good advantages are large array electrophysiological sensors and Fat-IBC modules, which will be developed in the project and demonstrated in applications in sports and healthcare.

SINTEC expected results will be:

1. Manufacturing large-area rigid-stretch PCB



To make a ground-breaking novel large-area rigid-stretch PCB technology available for manufacturing on an industrial scale



To present long stretchable wireless sensor patches that survives multiple-use, and excessive dynamic stretching without contact failure



To make an assembly protocol that allows for recycling of batteries and reuse of more expensive components

2. Integrating Fat-IBC with electrophysiological sensors

In healthcare monitoring and in wearable sports applications, sensor nodes are placed on the human body which need to communicate between each other. Besides, many applications that require higher data rate communication such as cardiac vascular sensors, cardio defibrillators and neuroprosthetics devices now exist in the market. Due to the growth of sensors that require high data rate, the demand of high bandwidth has increased. Generally, three different techniques have been used to propagate a signal on the human body: Galvanic coupling, capacitive coupling and RF links. Usually higher frequencies are not suitable for IBC due to the lossy nature of biological tissues. On the other hand, low frequencies cannot support high bandwidth.

For this reason, we have investigated the possibilities of using different human tissue channels to support low loss microwaves communication. Microwaves are attenuated by the human body due to the high dielectric losses of skin and muscle tissues. For this work, however, we propose the communication through the fat tissue, which offers lower losses for microwave propagation compared to other tissues. We have previously demonstrated the feasibility of using fat tissue as a low loss microwave transmission channel for IBC and we have demonstrated successful communication scenario, where real data has been transferred through Fat-IBC.

3. Device demonstration in sports and healthcare

The novel SINTEC technology will greatly increase the usability of measuring methods, especially for reasons such as:

- being less disturbing for athlete compared to existing technology;
- enable better compliance and adhesion to the human body and can handle an intense elite sports body, a movement that results in large amounts of sweating;
- enable use in cold winter outdoor environment (-15°C);
- from the user perspective, the newly developed technology will be equipped with an intuitive and easy-to-use user interface.

Figure 5 Expected results

4.1.3 Partners

In the Partners' section the list of SINTEC's partners is displayed. For each partner the logo is shown along with a brief description and related role in the project. For each partner there is the hyperlink to the reference site home page (Example in Figure 6).

Partners

UPPSALA UNIVERSITY

Uppsala University is the highest-ranking comprehensive research university in Sweden and among the top 20 in Europe.

In the project, the University is represented by two groups from the Department of Engineering Sciences: the Microsystem Technology (MST) programme and the Medical Engineering Group, MMG.

- MST programme has dedicated SoA laboratory for elastomers and microfluidic stretchable electronics, as well as several laboratories for microfluidics in life science, medical technology, environmental and space applications. MST is the second largest stakeholder in the micro- and nanoprocessing area of the 2,000 sqm MSL cleanroom at the Angstrom Laboratory, which is part of the Myfab national cleanroom infrastructure consortium (providing access to Lund Univ's, KTH's and Chalmers' cleanroom laboratories). By a generous donation by the KAW foundation, MST is responsible for the back-end line in the cleanroom, which provides most of the advanced microfabrication and packaging that will be needed in the project.
- The Microwaves in Medical Engineering Group, MMG, is a leading group in Sweden in Microwave sensors and intra-body communication. MMG has developed novel concepts of non-invasive sensors for monitoring osteoporosis and using human fat tissue as communication landscape for establishing large on/in body sensor networks. MMG has full-fledged characterization and testing lab for the validation of intra-body networks on human in-vitro models. MMG works very intensively with Clinicians and are involved in many clinical trials of medical sensors within Sweden and Holland.

MAIN TASKS IN THE PROJECT:

UU is the Project Coordinator and leader of WP3 and WP4.

Its research focus will be on:

1. Microfluidic stretchable PCB technology, forwarding it to A4 rigid-stretch PCB technology with MC, and providing several generations of rigid-stretch PCB based stretchable intelligent sensor nodes to other partners.
2. Fat-IBC technology, assisting in Fat-IBC networking protocol development and multi sensorial data gathering; characterizing Fat-IBC in different physiological landscape models of human body; security integration to Fat-IBC; and characterizing Fat-IBC on subject volunteers.

In Dissemination and Exploitation, UU will work on scientific dissemination at conferences and in scientific publication, and assisting the industrial partners in their dissemination and exploitation.

[More information about MST programme >>](#)

[More information about MMG group >>](#)




Figure 6 SINTEC partners

4.1.4 News and Events


Section News & Events presents future and past events (Figure 7).

It provides dates and basic info about each of them, especially when an event is of public nature. It also lists conferences and special sessions during which SINTEC will be presented.

Clicking on each event, it is possible to find further info about the main themes addressed by it and its main results.






[Download](#)
[Private Area](#)


[Home](#)
[Project](#)
[Partners](#)
[News & Events](#)
[Publications](#)
[Media](#)
[Contacts](#)

News & Events




Upcoming Events




1st Technical Meeting
June 27 - June 28


[View All Events](#)

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SINTEC pre kick-off
21 November 2018 - 22 November 2018



SINTEC Kick-off Meeting
January 16 - January 17

Figure 7 News and Events

4.1.5 Publications

In section Publications, open access publications will be uploaded. In particular, scientific and technical publications on topical journals, conference proceedings and technical magazines (e.g. researchers, wide public) as well as general audience articles (e.g. CORDIS news).

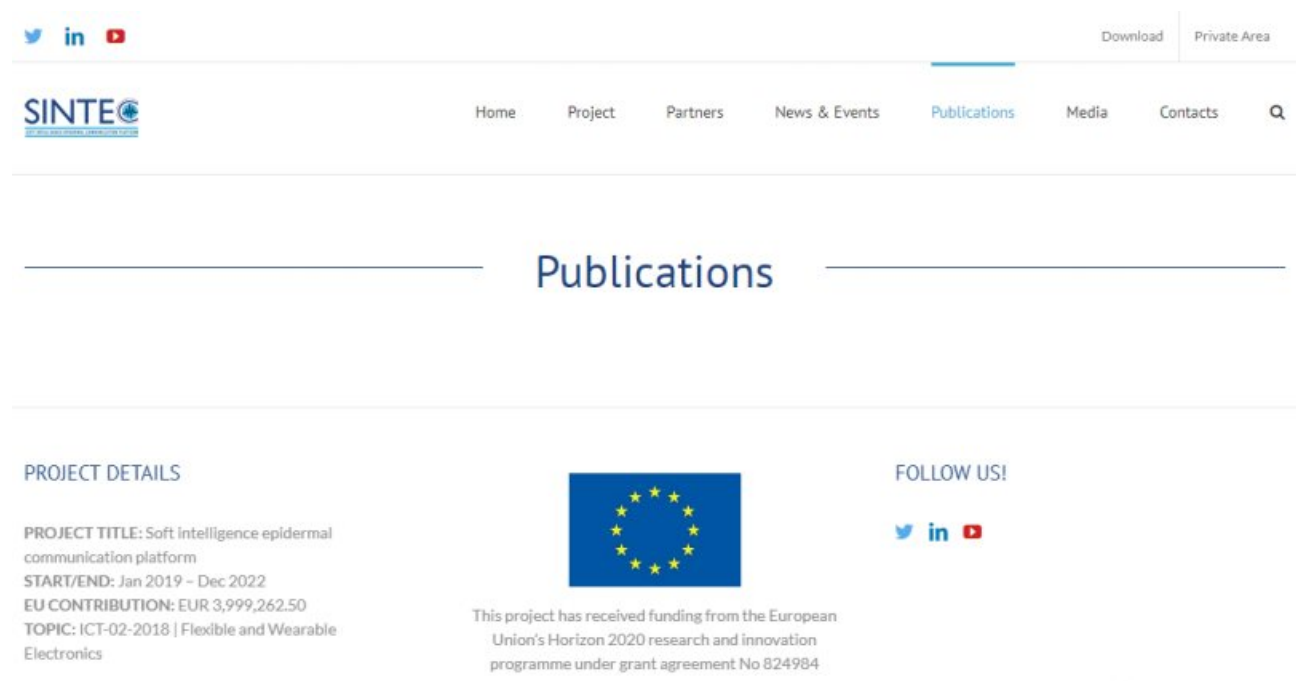


Figure 8 Publications

4.1.6 Media

For the Media section, it is possible to accede two sub-sections:

- Press release (Figure 9), in this sub-section visitors can find all the press releases dedicated to the project;
- Videos (Figure 10), in this sub-section visitors can watch project videos. In particular the introductory project video that present the project objectives and scope and the final project video that will disseminate the results of the project to the stakeholders and general public, as foreseen in D9.16 “Final project video”.

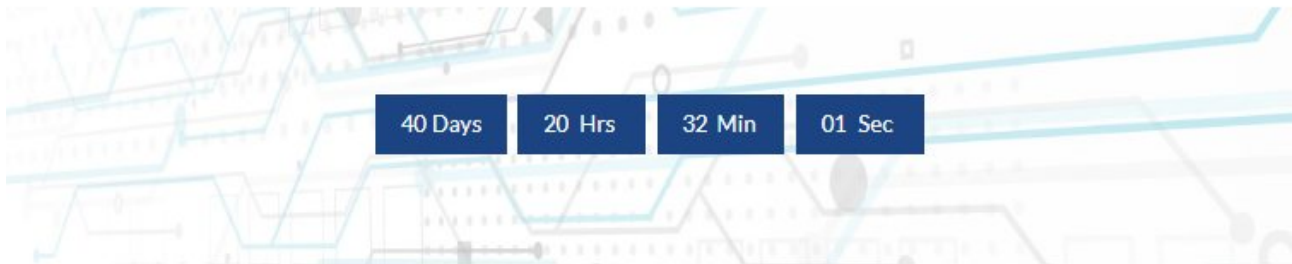
The screenshot displays the SINTEC website's Media section. At the top, there are social media icons for Twitter, LinkedIn, and YouTube, along with links for 'Download' and 'Private Area'. The main navigation bar includes 'Home', 'Project', 'Partners', 'News & Events', 'Publications', 'Media' (highlighted), and 'Contacts', followed by a search icon. The page title is 'Press Release'. Below this, a list of press releases is shown, each with a date, source, and a brief description, followed by a 'Read More >>' link.

Date	Source	Press Release Title
25 February 2019	wko.at	Innovation aus Schweden: Intelligente Pflaster revolutionieren Messungen am menschlichen Körper. Read More >>
12 February 2019	sverigesradio.se	Smarta plåster ska mäta kroppens aktivitet. Read More >>
11 February 2019	sverigesradio.se	Smart plåster ska öka skidåkarens prestation. Read More >>
06 February 2019	miun.se	Smarta plåster testas av skidlandslagen. Read More >>
06 February 2019	forskning.se	Skidlandslagen testar smarta plåster. Read More >>
06 February 2019	njus.me	De svenska landslagen i alpin och längdskidåkning kan inom en snar framtid få möjlighet att testa så kallade smarta plåster. I plåstren lagras information om viktiga kroppsfunktioner. Read More >>
22 January 2019	uu.se	Smarta plåster hjälper oss att hålla koll. Read More >>

Figure 9 Press release

Videos

Ready for SINTEC project video? It will be on line soon. STAY TUNED!



PROJECT DETAILS

PROJECT TITLE: Soft intelligence epidermal communication platform
START/END: Jan 2019 – Dec 2022
EU CONTRIBUTION: EUR 3,999,262.50
TOPIC: ICT-02-2018 | Flexible and Wearable Electronics



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Figure 10 Videos


4.1.7 Contacts

Section Contacts (Figure 11) enables people to get in touch easily with the Project Coordinator and the Project Manager whose membership organizations, e-mail addresses and LinkedIn contacts are provided.

Twitter LinkedIn YouTube Download Private Area

SINTEC Home Project Partners News & Events Publications Media **Contacts** Q


Contacts



Klas Hjort
Project Coordinator

Head of the Microsystem Technology (MST) programme at the Dept. Engineering Sciences, Uppsala University, with a long-standing track record on microfluidics and advanced microfabrication. With his utilization oriented perspective, he works closely with experts and end-users in academy and industry, providing microsystems to his partners.

in ✉



Isella Vicini
Project Manager

Wide experience in the EC Research and Innovation projects, like Horizon2020 and LIFE Programme: since the First Framework Program (1985), Isella works in the European Project Management field, leading the European Funding Division of Warrant Hub. CEO and the founder of beWarrant, a Belgian consultancy company that provides support on European Funding opportunities.

in ✉

Figure 11 Contacts

4.1.8 Download

On the top of the website, in the secondary menu, there is a link called “Download”. Clicking here, it will be possible to download the public material prepared and included in the Communication Kit (D9.2 “Project Communication Kit”):

- Logo
- Leaflet
- Roll-up
- Press release
- Templates
- Introductory video

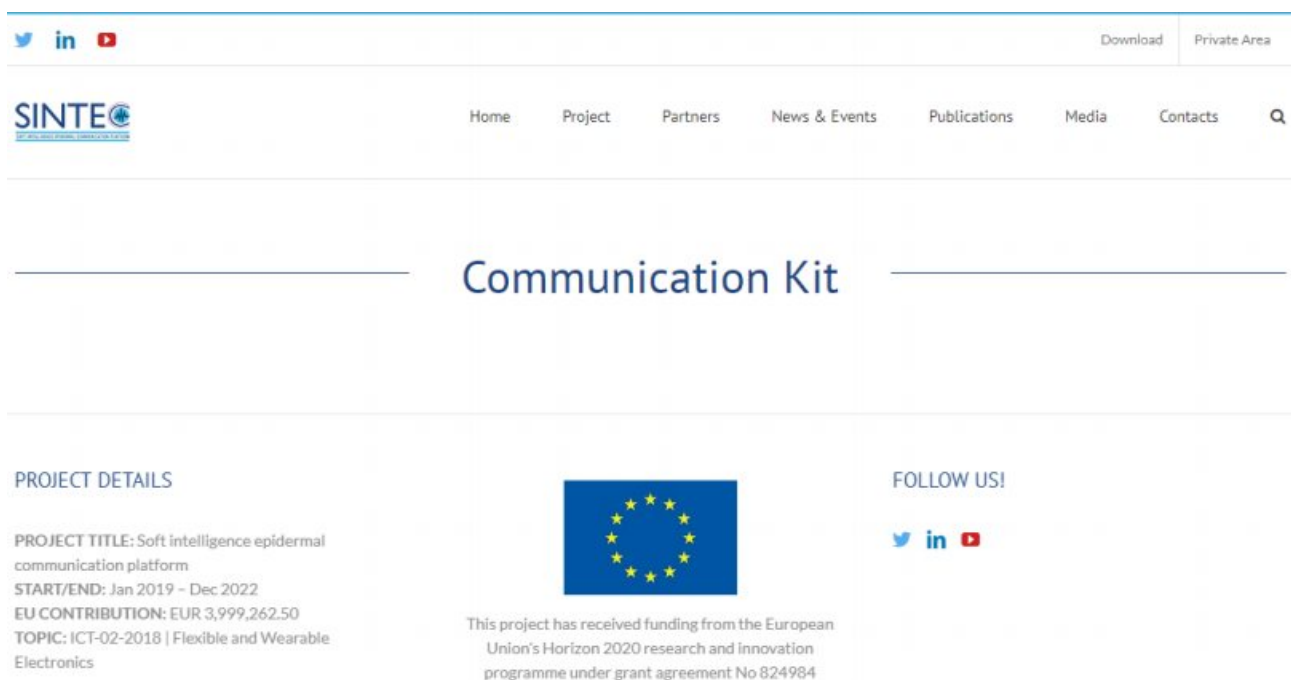


Figure 12 Communication Kit

4.2 Private Area

On SINTEC website homepage there is a link allowing project partners to access the EMDESK platform collaborative website used for internal communication and project management.

The collaborative website is private, and a password is mandatory to gain access to it.

The EMDESK platform supports the following activities:

- Project progress controlling
- Resources and costs controlling reporting
- Report management and preparation
- Deliverable monitoring and management
- Document management
- Project calendar management
- Contacts management, electronic mailing (to individuals or mailing lists) and messaging.

More details will be provided on D1.2 “Project Collaborative Space”.

4.3 Web 2.0 Social Media

Web 2.0 tools are the emerging platforms for innovative creation, sharing and tracking of citizens' needs and wishes on public awareness. Web 2.0 applications, including social networks, are changing and improving the way of how users interacts with the World Wide Web.

In order to reach a broad target audience while establishing two-ways communication channels and to increase the project visibility and its impact, the presence of SINTEC project in social media is one of the key actions for dissemination activities.

According to the decision shared by the consortium during the Kick-off Meeting, all partners agree to create project profile in LinkedIn, Twitter, Youtube and Researchgate, in order to increase the visibility of a selected target group

For that reason, SINTEC is registered in standard platforms like:

LinkedIn

A [LinkedIn page](#) (Figure 13) has been created in order to reach stakeholders and industry professionals.

The website has direct access to these social networks by clicking over the icons situated on the bar in the bottom part of each page of the website. Therefore, it is easy for every user to participate in this when the website is visited.



Figure 13 LinkedIn page

Twitter

A [Twitter account](#) (Figure 14) has been created as further and more instant dissemination instrument for reaching the general public. Relevant Twitter groups will be identified and approached for taking part in SINTEC activities.



Figure 14 Twitter page

The website has direct access to these social networks by clicking over the icons situated on the bar at the beginning of the homepage or at the bottom. Therefore, it is easy for every user to participate in this when the website is visited.

The **YouTube account** (Figure 15) has been created as it gives SINTEC project a powerful medium to produce and distribute video content and engage a massive audience. The video that will be uploaded to YouTube channel will be shared across SINTEC other social channels as well and embed into the project website. SINTEC channel is publicly available at this [link](#).

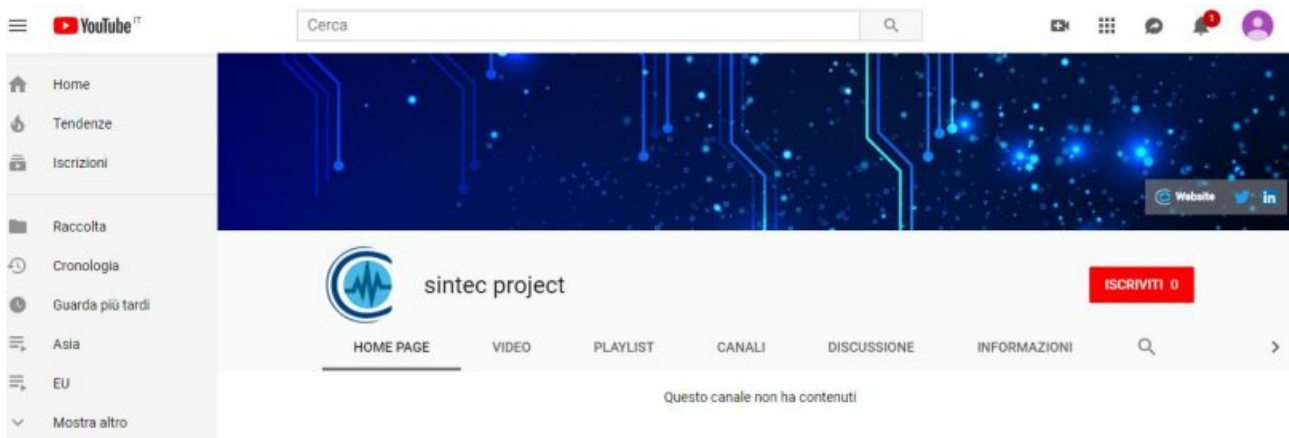


Figure 15 YouTube page

Moreover, the **Researchgate** SINTEC pages will be created in order to better join the research community.

5 Conclusions

SINTEC project website has been the first dissemination tool developed in the project.

The website will be periodically updated by WG with the contribution of all the partners of the project. The updates will be related to new conferences and events in which the project will participate, news and/or publications related to SINTEC, images, updates from project meetings and project results. Public deliverables and Project Communication Kit will be uploaded in the download section.

During the project implementation, whether new dissemination activities and not foreseen at this stage will be implemented, the project website will be updated accordingly.

It is expected that this public area will be very useful for spreading the new technologies and concepts proposed in SINTEC project to anyone interested in this topic.

Additionally, the private area that could be accessed from this website will allow an efficient team working within the consortium and will help to prepare all the documentation required by the European Commission for the justification of the project.