SYNSENSO

Cell-free synthetic biology for combinatorial biosensor design

Project no. 101072980

Deliverable D5.1
SYNSENSO website and social media channels

Version 1

WP 5 – Communication, Dissemination and Exploitation

Lead Participant	TUDa
Contributors	accelCH
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Revision history

Date	Authors	Revision
06.10.2022	Jamuna Siehler (accelCH)	Draft version
14.10.2022	Christiane Hübner, Heinz Koeppl (TUDa)	First version
21.10.2022	Jörn-Frederik Wotzlaw (accelCH)	Internal review
26.10.2022	Jacqueline Strehler (accelCH)	Internal review
26.10.2022	Jamuna Siehler (accelCH)	Final version

Contents

Abbreviations

Abbreviations	Details
accelCH	accelopment Schweiz AG
TUDa	Technische Universität Darmstadt
WP	Work package
MSCA-DN	Marie Sklodowska-Curie Actions Doctoral Network
DC	Doctoral Candidate
CMS	Content management system
GA	Grant Agreement

Executive Summary

This deliverable is part of the SYNSENSO Work Package (WP) 5 “Communication, Dissemination and Exploitation”, and outlines the SYNSENSO project website and social media channels, including their set-up and development process, structure, as well as content. The project website and social media channels will be maintained and updated regularly throughout the duration of the project and after its completion.

The project website serves as a powerful tool to communicate, inform and raise awareness on the activities and progress of the project, including the progress of each individual doctoral candidate (DC), enabling the SYNSENSO consortium to reach out to all its stakeholders. With over 300 million active social media users in Europe alone[1], social media channels are critical to communicate and inform about the project and thus reach the diverse SYNSENSO target groups.

Need for the deliverable

The SYNSENSO website and social media channels serve as the main platforms for communication, dissemination and exploitation efforts throughout the project. It provides consortium partners and target audiences alike with up-to-date, consistent and easily accessible information on the project, its results and partners.

Objectives of the deliverable

With the help of this deliverable, the project website and social media channels, the SYNSENSO project aims to:

- Provide a **strategy** for the development of the project website
- Define the **key audiences** we want to reach
- **Inform** about SYNSENSO and its work
- Continuously document and display **progress, achievements** and **results** of the project
- Inform about **relevant activities** and upcoming events

Outcomes

The outcome of Deliverable D5.1 is the SYNSENSO project website, www.synsenso.eu, and social media channels @SYNSENSO_EU on Twitter and LinkedIn, which have been online since July 2022, before the project start.

Next steps

More pages on the SYNSENSO website will be created, continuously providing insights into the science and progress of SYNSENSO, introducing each DC and project supervisor and highlighting dissemination events. The project's social media channels will be handed over to the DCs to communicate on their work from within the project consortium and sharpen their science communication skills.

[1] Europe Social Media Analytics Market – Growth, Trends, Covid-19 Impact, and forecasts (2022-2027), Mordor Intelligence, https://www.mordorintelligence.com/industry-reports/europe-social-media-analytics-industry

1 Approach

This chapter will present the SYNSENSO website, including its objectives, target audiences and technical implementation.

1.1 Key facts

- The **SYNSENSO website** is available at www.synsenso.eu.
- It was first launched in **July 2022** before the project start, to support the recruitment of DCs.
- accelCH created and maintains the website with WordPress.
- The SYNSENSO social media channels have been live since July 2022 and can be found under the handle **@SYNSENSO_EU** on Twitter and SYNSENSO on LinkedIn
- The project website is securely hosted on accelCH's webserver.

1.2 Project objectives

SYNSENSO is a Marie Sklodowska-Curie Actions Doctoral Network (MSCA-DN). **The aim of SYNSENSO is to develop a new generation of cell-free, synthetic biosensors that can sense, integrate, and respond to multi-dimensional analyte profiles, relevant for domains ranging from *in-vitro* diagnostics to health, environmental and bioprocess monitoring.**

1.3 Objectives of the website and social media channels

The main aim of the website and social media channels is to raise awareness of the project and keep the various stakeholders interested throughout the project duration. In addition, both the website and social media channels aim to present not only the scope of the project but also the consortium, specifically the SYNSENSO doctoral candidates and their academic and non-academic supervisors.

The overall objective of the **SYNSENSO website** is to create a user-friendly, accessible and comprehensive online platform and establish it as the main source of updated information and point of contact for all target audiences.

The overall objective of the **SYNSENSO social media channels** is to communicate and inform about the project, report on website updates and share and amplify voices from within the SYNSENSO consortium and relevant developments in the field of biosensing. All throughout, engaging with the European Horizon Europe and MSCA social media framework by using relevant tags and hashtags (i.e. #HorizonEurope #MSCA).

1.4 Target audiences

To maximise the project's outreach and impact of results, **stakeholder group orientation** is one of the three defined key pillars of WP 5. The goal is to ensure the message, channels, tools and planned activities suit the targeted stakeholder groups. This includes the SYNSENSO website and social media channels.

As mentioned, one of the main objectives of the project website and social media channels is to be the primary source of updated information and point of contact **for all target audiences.** Thus, the SYNSENSO website and social media channels are targeted at the following groups (see figure 1): Society (general public); scientific community; EU initiatives, education, media; biosensor developers and device manufacturers, as well as end users in environmental monitoring, in-vitro diagnostics and bioprocess monitoring.

Figure 1 – SYNSENSO website and social media channel target audiences

1.5 SYNSENSO website

The website was created with the content management system (CMS) WordPress and the plugin "Elementor", which is the leading website-building platform for WordPress. The tool includes an intuitive visual builder which enables building professional, pixel-perfect websites. Furthermore, it offers flexible and professional layouts, and various additional plugins to integrate interactive features to adjust the website to the project's needs. By default, it also offers responsive designs, i.e., website layouts that adapt to different screen sizes. The website is based on the scroll-down movement to simplify navigation through the broad content available in the future. Posts are displayed in reverse chronological order so that the most recent news entry is shown at the top of the page. As the number of posts grows, tags, such as the month of publication or the topic, will be added to each post so that the users can filter them according to their needs and interest.

1.5.1 Theme

C60 M50 Y41 K20
R88 G87 B88
hex #575757

C87 M31 Y66 K20
R0 G114 B93
hex #00715d

C57 M2 Y100 K0
R129 G134 B89
hex #80b827

C97 M100 Y31 K23
R48 G36 B89
hex #302359

Figure 2 - SYNSENSO colour guide

The theme has been customised and adjusted by accelCH, following **SYNSENSOs visual identity,** and increasing readability. The project's visual identity was defined, including the font Arial (already used in the project proposal) in different sizes for titles and body text to enhance the lecture flow. Links are displayed in the SYNSENSO colours (Fig. 2).

1.6 Images and graphics

Images and graphics are used to illustrate given information to increase the website's visual appeal. This includes using logos of Beneficiaries and Associated Partners. Furthermore, a page displaying profiles and photos of supervisors and DCs is in development. The SYNSENSO website uses pictures and graphics provided by the partners.

1.7 Structure

The website follows an intuitive and cohesive structure, with currently three pages ("Science", "Network", and "News"), as well as the landing page and the subpages "Beneficiaries" and "Vacancies" implemented. A consistent layout is maintained throughout all pages, including the main header image and page/content title at the top, followed by text and visuals organised in boxes. Additionally, the SYNSENSO website has a static header and footer implemented consistently throughout all the pages. Besides the navigation menu, the header includes links to the SYNSENSO social media channels and contact e-mail. The footer includes the respective funding and co-funding acknowledgements.

1.7.1 Landing page

The landing page is the first page visitors see when accessing www.synsenso.eu through their web browsers (e.g.Google Chrome) or search engines (e.g. Google). The main purpose of the landing page is to a) attract visitors (incl. potential stakeholders and DC's), b) provide information about the project in a concise manner, and c) enable visitors to access the different (sub)-pages easily.

a) **Attract visitors** –to attract visitors, including potential stakeholders and doctoral candidates, the landing page uses SYNSENSO's defined colour palette, engaging graphics showcasing SYNSENSO's ecosystem, short and accessible information, and an embedded Twitter-feed of the SYNSENSO Twitter channel, displaying all recent tweets.

b) **Provide information** – the first text block of the landing page – highlighted with an animation of the project title SYNSENSO – is a short description of the project, its objectives and approach. The text block is followed by a button titled "learn more", linking to a subpage of the website. This allows the visitor to immediately gain all relevant information, with the option to receive more detailed information by clicking the button.

c) Enable visitors to **access subpages easily** - further down on the landing page, we included three visually outstanding text blocks, including a short introductory phrase and a button, linking to the three pages "Science" "Network" and "Vacancies". This allows the visitors to jump directly to their desired destination, containing the specific information they are looking for.

1.7.2 Science

The "Science" page is the first page included in the main navigation menu of the website. This page aims to provide detailed but still laymen-accessible information on the science of SYNSENSO. Titled "A game-change in biosensing", the page explains the key technology of biosensing, followed by a text-block explaining cell-

free synthetic biology, and molecular sensor design – two key aspects of the SYNSENSO project. On the bottom of the page, the visitor is encouraged to jump to the next page by following a button with the text “meet the network”, which leads to a network overview page.

1.7.3 Network

“Network” is the second page of the main navigation menu and includes an overview of the consortium structure of the project. The Technische Universität Darmstadt (TUDa) and Prof. Heinz Koeppl are introduced as the coordinating party of SYNSENSO, followed by an overview of the project’s Beneficiaries and Associated Partners. Mirrored in the accompanying visual is the project partners' location on a greyscale map of Europe. By clicking on the button at the bottom of the page, the visitor can jump to a page specifically about the project’s beneficiaries.

1.7.3.1 Beneficiaries

“Beneficiaries” is the first subpage of the main page “Network”. The main purpose of this page is to provide an overview of SYNSENSO’s six beneficiaries. The page is organised in six text blocks with a dark-green outline. It contains the beneficiaries’ names, logos, names of the involved supervisors, and further links to their websites and/or social media channels. In a next step, this page will also include a photo of each supervisor as well as a short biography to give a more personal insight into the SYNSENSO consortium.

1.7.3.2 Vacancies

“Vacancies” is the second subpage of the main page “Network”. It was initially set up to support the general recruitment process of the project. After completing the recruitment process, it will remain hidden as a subpage in case of any opening positions in SYNSENSO. It is designed so that each potential DC can receive all required information without having read in detail about the project before. It includes a short main description of the project, followed by a “toggle” view of each DC project. The “toggle” view initially only shows the DC project title, and by clicking on it, opens and displays more detailed information about the individual DC project, including the supervising person. The DC projects are followed by two general text blocks containing information on the candidate profile and eligibility criteria. Lastly, the interested DCs were able to download further information in the form of the MSCA applicant guide and ultimately jump to the EURAXESS page for their application. The vacancies page is continuously updated as DCs are being recruited.

1.7.4 News

The news page is the last page of the main navigation menu. The page contains a sorted list of each news item from most recent to least recent, an event calendar and the embedded Twitter feed. A “Media” section is included at the bottom of the page, listing all press releases (with download links), as well as media and press articles featuring SYNENSO. It will be assessed whether a separate “Media” page might be worth as more media coverage is published about SYNSENSO.

2 SYNSENSO social media channels

The SYNSENSO social media channels on Twitter and LinkedIn were set up in July 2022 after signing the Grant Agreement. Together with the project website, they build the foundation of the SYNSENSO communication and outreach activities and function as the main resource for project-related news and information.

2.1 Approach

Social media is a powerful tool for project communication and dissemination activities. With over 300 million active social media users in Europe alone, a social media presence is essential to amplify the project's outreach and impact. Based on the SYNSENSO stakeholders and target audiences (see section 1.3), the most suitable social media platforms are LinkedIn and Twitter. While LinkedIn, a" networking site for professionals[2]", mainly targets industry stakeholders (e.g., biotech companies), Twitter is a popular channel to communicate about the project and disseminate project results to members of science and academia.

The main objective of the social media channels is to regularly inform and update about SYNSENSO in an appealing, accessible, and quick manner. Thus, the short-story format of the social media channels aims to complement the website's more in-depth, long-story format.

2.1.1 DC involvement

As the project progresses, all DCs will be involved in managing the social media channels. After an initial training session on science communication, the DCs, in rotating teams, will be responsible for creating and sharing content for the SYNSENSO Twitter and LinkedIn channels. Their involvement will enable the DCs to gain hands-on experience in science communication and social media management, build a network of related projects, researchers and industries, and provide the SYNSENSO audience with first-hand updates on the work within the project.

2.2 Content

The strategy for the SYNSENSO social media channel content follows three defined pillars:

1. **Informative:** Insights into the science, publications, conferences
2. **Project related:** Consortium updates, project progress & milestones, events
3. **People centered:** Introduction of consortium members, DC involvement, success stories

By following these three pillars, we ensure the content shared on the SYNSENSO social media channels is relevant and informative while still covering the full spectrum of the project work of an MSCA-DN. In detail, we will announce and follow up on events, report on results in the form of publications and conferences, share press releases and media coverage, introduce team members, report on project progress and milestones,

[2] Social Media Guide for Horizon 20202: /https://ec.europa.eu/research/participants/data/ref/h2020/other/grants_manual/amga/soc-med-guide_en.pdf

etc. Additionally, it is planned to launch extended social media campaigns, e.g., on “What is biosensing?”, thus making the SYNSENSO science accessible to all target audiences.

2.2.1 Images and graphics

The images used for the SYNSENSO website and social media channels will use portrait and team photos of the consortium (e.g., to introduce the supervisors and DCs, or to report on consortium meetings). The DCs will also be asked to take photos at conferences or other big events. Besides, infographics have become a powerful tool to use on social media. The SYNSENSO social media channels will implement this by using an infographic to support our text-based posts. By using the Twitter-Business extension Tweet Composer, graphics will be displayed in full width when posted on Twitter, engaging the reader to follow the link by clicking on the image.

Image 1 - Use of graphics

2.3 Twitter

The SYNSENSO Twitter channel was set up in July 2022 with the handle @SYNSENSO_EU. To achieve a consistent visual identity and follow the look and feel of the SYNSENSO website, the channel re-uses the SYNSENSO header image, and the SYNSENSO logo is set as the profile image of the channel. The Twitter “bio”, the short profile description, includes a brief description of the core of the project, info on the coordinating centre at TUDa, and the funding acknowledgement, including hashtags linking to the Horizon Europe and MSCA channels and names the project’s GA Number. With the project start, the aim is to share a minimum of two posts per month.

Image 2 - SYNSENSO Twitter channel

2.4 LinkedIn

The SYNSENSO LinkedIn channel was set up in July 2022 under the name SYNSENSO. The SYNSENSO look and feel are also implemented on the project's LinkedIn channel, using the same logo profile and website header. The LinkedIn description uses the hashtags #MSCA and #biosensors to make the project page findable for relevant groups in the field of biosensing and other Doctoral Networks. The set-up of the LinkedIn page allows the visitor to directly visit the SYNSENSO website by following a button highlighted in blue (see image 3). Below, LinkedIn includes the sections "About", "Posts", "Jobs" and "People". The "About" section includes a description of the project and links to the project website. By clicking on "Posts", the SYNSENSO post feed becomes visible, showing all posts from the most to least recent. With the project start, the aim is to share at least two posts per month.

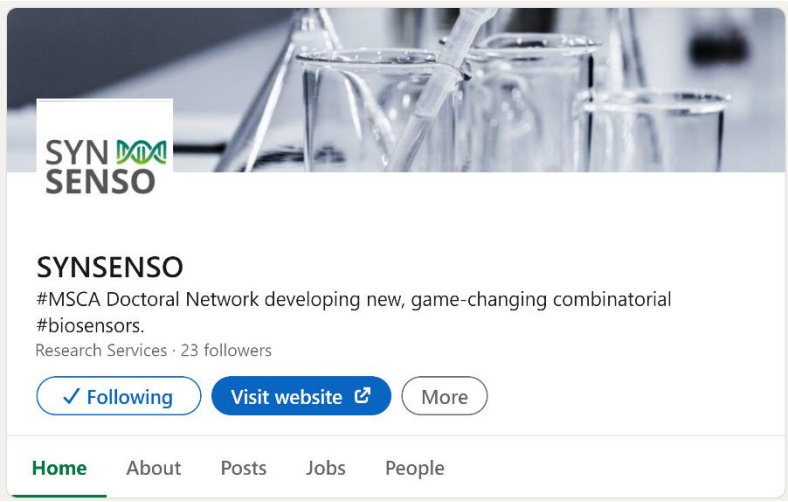


Image 3 - SYNSESNSO LinkedIn channel

3 Evaluation

accelCH will measure the website's impact using Google Analytics, which offers the possibility to track website traffic (e.g., page views, unique visitors), and detect immediate impact of dissemination activities that lead to more page views, for example when a partner presents its results at a conference we expect to see an increase of new visitors. The SYNSENSO social media channels will be tracked using LinkedIn and Twitter Analytics, giving a full insight into follower counts, post impressions, and profile hits. These insights will be used, among others, to optimise the content to better match the platforms' algorithms. The outreach will then be evaluated to see if targets have been reached and, if necessary, to identify new outreach measures.

4 Outlook

As the project progresses, the structure of the SYNSENSO website will be adapted to include relevant information and new pages when needed. The social media channels will be continuously updated. After completing the recruitment process, a "Meet the Researchers" page will be added under "Network" on the website, including all DC and supervisor profiles. Correspondingly, the DCs and supervisors will be introduced via the SYNSENSO social media channels. After the DCs have been established in their project teams and progress with their work, the SYNSENSO social media channels will be handed over to a periodically rotating team of DCs. As the first project results become available (e.g. in the form of publications or conference presentations), we will share these via the SYNSENSO social media channels, and implement a "Results & Outcomes" page on www.synsenso.com, where all project results documented in the form of journal articles, posters, conference presentations, infographics, and similar material will be linked to their respective source

websites. Lastly, we will plan regular social media campaigns explaining the science and work of SYNSENSO ("What is biosensing?" etc.).

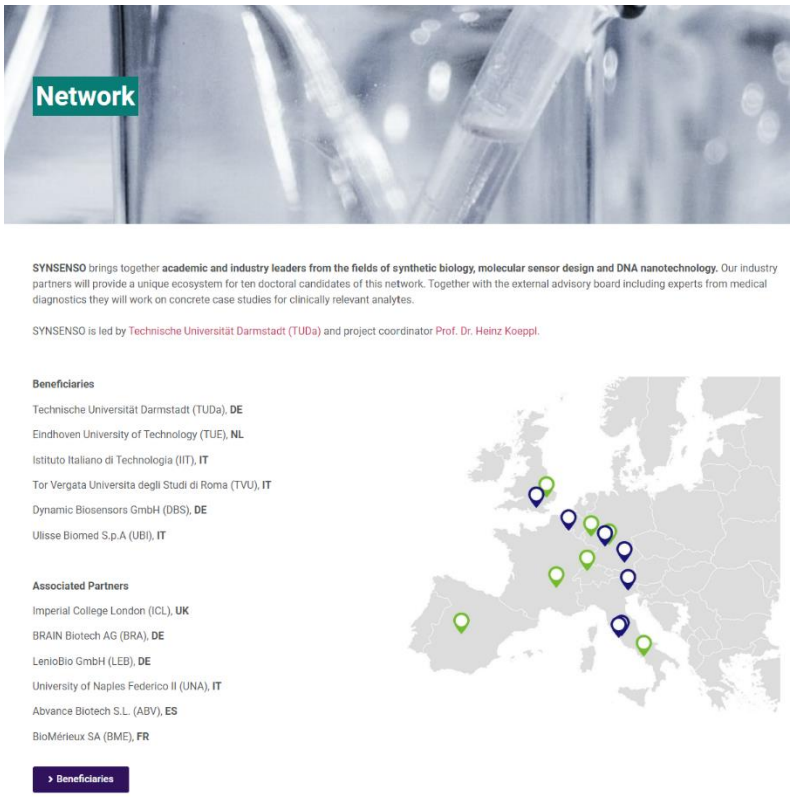
5 Impressions from the SYNSENSO website

1 – Landing Page

2 – Science


SYN SENSO
Science
Network +
News
Science
A game change in biosensing
Cell-free synthetic biology for combinatorial biosensor design
Synthetic biology is a key technology of the 21st century and is fuelling a new wave of innovations with significant impact on economies and societies. Cell-free synthetic biology and its use in biosensor design will be transformative for domains ranging from in-vitro diagnostics to health, environmental and bioprocess monitoring, yielding fast and cost-efficient sensors with unprecedented sensitivity and specificity.
Cell-free synthetic biology
Cell-free biological systems make use of the transcriptional and translational machinery by using extracts or purified systems instead of living cells. This reduces the complexity of the system and enables better control of the processes to find standardised engineering solutions to new challenges.
+
Molecular sensor design
Molecular biosensors combine synthetic DNA-programmable responsive elements with transcription/translation systems to obtain a measurable signal (e.g. optical output) in the presence of a specific target analyte. To achieve programmable, intelligent biosensors that will respond to multi-dimensional analyte profiles, well-characterized regulatory elements combined with computer-aided design methods are needed.
Recent advances in the field of synthetic biology offer an unprecedented opportunity for next-generation biosensors characterized by programmability, low-cost and by a sensitivity and specificity unmet by conventional sensors. Leveraging the rich toolset of synthetic biology, we can now not only build better biosensors but also analytical tools that can sense and discern complex analyte profiles, such as a panel of biomarkers indicative of a certain disease status.
Our ambition is to provide a game change in biosensing by combining cell-free synthetic biology with molecular sensor design.
The SYNSENSO European doctoral network focuses on the construction of novel programmable ligand-responsive elements and the construction of cell-free computing circuits that can integrate molecular signals from those elements. Together the two components will make up the next generation of combinatorial biosensors that can sense signals and compute a response to them. SYNSENSO aims for a modular approach where different responsive elements can be composed with different computing circuits enabling fast construction of suitable sensors for new application domains.
Meet the Network

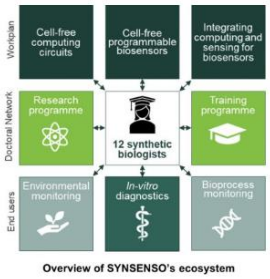
3 – Network and Beneficiaries



4 – Vacancies

Cell-free snythetic biology for combinatorial biosensor design

12 Doctoral Candidate Positions for MSCA Doctoral Network



Overview of SYNSENSO's ecosystem

The Doctoral Network **SYNSENSO** "Cell-free synthetic biology for combinatorial biosensor design", funded within the framework of the Marie Skłodowska-Curie Actions (MSCA), follows an interdisciplinary and cross-sectoral approach by bringing together academic and industrial experts from the fields of cell-free synthetic biology and molecular sensor design to develop novel combinatorial biosensors.

Five acacemic research groups and two industrial partners, coordinated by Technische Universität Darmstadt in Germany, join forces in **SYNSENSO** to create a mobility and training platform for young scientists by means of cross-site, interdisciplinary research projects. The DCs will work on individual research projects in order to devise new logic circuits in cell-free systems, build novel responsive elements for analyte detection and integrate logic circuits with response elements to build and test next-generation, combinatorial biosensors.

What we offer

The project offers the DCs research and training excellence in synthetic biology and biosensor design. The partners of **SYNSENSO** are leading research groups in synthetic biology and sensors design and their research institutes actively **promote young researchers.** The **6 academic research groups** and **4 partners from the private sector** join forces in **SYNSENSO** to create a **platform of intersectoral and multidisciplinary mobility and training**. To complement the academic and scientific goals of the DCs, the project offers customized research projects, structured interdisciplinary local and network-wide transferable skills training activities, and **secondments at top-ranking European universities and industry partners.**

- **DC 1: Cell-free RNA-based logic circuits**
- **DC 3: CRISPR-based RNA editing tools for cell-free biosensors**
- **DC 4: DNA nanostructure interfaces for cell-free synthetic circuits**
- **DC 5: Enhanced cell-free lysates with pre-expressed regulators**
- **DC 6: Cell-free responsive elements and biosensors for DNA repair enzymes**
- **DC 7: RNA-binding proteins for circuit design and detection of viral infection**
- **DC 8: DNA/RNA responsive elements for cell-free biosensors**
- **DC 9: Cell-free synthesis of RNA aptamers on a biochip**
- **DC 10: Cell-free responsive elements for antibodies and proteins detection**
- **DC 11 (UK): Intein-based logic gates for multiplexed design**
- **DC 12 (UK): Developing phosphorylation cascades in cell-free circuits**

Eligibility Criteria

Supported researchers must be doctoral candidates, i.e. not already in possession of a doctoral degree at the date of the recruitment.

Mobility Rule: researchers must not have resided or carried out their main activity (work, studies, etc.) in the country of the recruiting beneficiary for more than 12 months in the 36 months immediately before their recruitment date.

Additionally, DC applicants must fulfil the local requirements of the recruiting institutions listed in the project descriptions below.

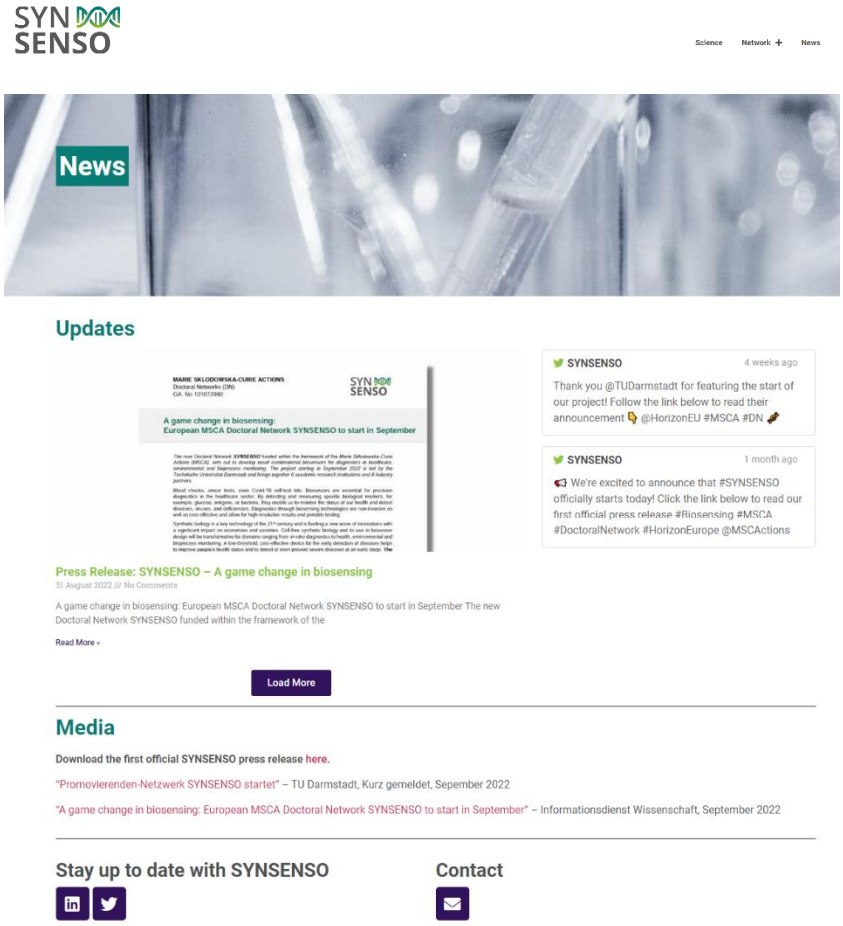
Monthly allowances:

Living allowance*: 3400 €
Mobility allowance: 600 €

Access full Job-Ad

EURAXESS

5 – News


SYN SENSO
Science
Network
News
News
Updates
MARIE SKŁODOWSKA-CURIE ACTIONS
Doctoral Networks (DN)
A game change in biosensing:
European MSCA Doctoral Network SYNSENSO to start in September
SYNSENSO
4 weeks ago
Thank you @TUDarmstadt for featuring the start of our project! Follow the link below to read their announcement @HorizonEU #MSCA #DN
SYNSENSO
1 month ago
We're excited to announce that #SYNSENSO officially starts today! Click the link below to read our first official press release #Biosensing #MSCA #DoctoralNetwork #HorizonEurope @MSCActions
Press Release: SYNSENSO – A game change in biosensing
31 August 2022 /// No Comments
A game change in biosensing: European MSCA Doctoral Network SYNSENSO to start in September The new Doctoral Network SYNSENSO funded within the framework of the
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Download the first official SYNSENSO press release here.
"Promovierenden-Netzwerk SYNSENSO startet" – TU Darmstadt, Kurz gemeldet, September 2022
"A game change in biosensing: European MSCA Doctoral Network SYNSENSO to start in September" – Informationsdienst Wissenschaft, September 2022
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