



**SUSNANOFAB**  
*Grant Agreement No. 882506*



# First report on industrial needs on technologies, services and access to infrastructures

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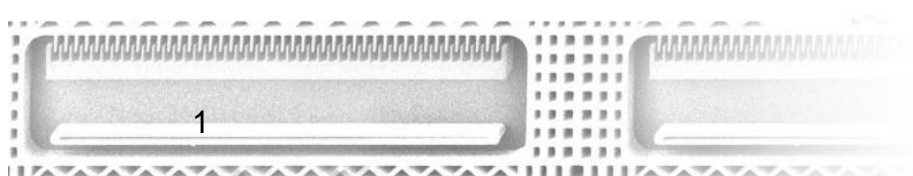
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1.0	20 August 2021	First draft
2.0	23 August 2021	Second draft with comments from IPC
3.0	30 August 2021	Final draft with feedback from IPC and RINA

## Abbreviations and Acronyms

Acronym	Description
CEA	Commissariat à l'énergie atomique et aux énergies alternatives
COVID19	Corona Virus Disease 2019 (2019-nCoV)
CSA	Coordination and Support Action
EU	European Union
GDPR	General Data Protection Regulation
NIA	Nanotechnology Industries Association
R&I	Research and innovation
R&D	Research and Development
RINA-C	RINA Consulting
SME	Small Medium Enterprise
TYNDALL	Tyndall National Institute

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Project website: <http://susnanofab.eu/>.

## Executive Summary

This report sets out the work that has been achieved so far in identifying industrial needs. The report provides a background to the task and how the work has been set-up to achieve the aim of identifying at least 50 industrial needs. Due to the impact of the COVID19 pandemic, the anticipated work has been adjusted to manage the impact of the impossibility of attending face-to-face events. A survey has been established to allow initial data to be gathered digitally on the industrial needs using a number of pre-determined categories to make responding easier for companies. The survey has been widely distributed by partners, but so far has only resulted in the submission of 12 industrial needs. Respondents have also been asked about how they would seek to address the need that they have identified and also about their willingness to work with third parties to do so.

This report details the steps taken to set-up the survey and provides some initial results that have been achieved. Further work to widen the number of responses and to also follow-up with individual interviews will be undertaken in the next project period.



## I. Introduction

A key part of the SUSNANOFAB project is to understand what needs the nano fabrication industry are looking to address to help with their business growth and to bridge the gap between nanofabrication research and industrial needs for functional products by demonstrating a pool of needs that can be matched by available technologies, services and infrastructures. The aim of the task that this deliverable describes, is to develop an understanding of the actual industrial needs of the nano fabrication sector which can be used in other project tasks to aid the matching of needs to competencies.

Industrial needs can be defined as the requirements that industry has to be able to run its business in an efficient and profitable way. The needs can be technical (such as the need for new research), structural (such as the need for new equipment), financial (such as the need for new investment), trade related (such as the needs for new orders/ customers); or human centric (such as the need for new staffing or new training for staff). Some identified industrial needs can be addressed wholly internally within the company and its existing resources and competencies. Others will require access to new knowledge, skills, infrastructure or external investment. SUSNANOFAB seeks to understand how it can help address those identified industrial needs that requires input from outside of the company and to help define the brokerage service that is being developed within the project.



## 2. Background

### 2.1 Task Description

#### **T4.2 Collection of industrial needs on technologies, services and access to infrastructures [M9-M26]**

**Beneficiaries:** NIA, RINA-C, CEA and TYNDALL

This task will engage nanomaterial producers, users of nanomaterials (such as those manufacturing nano-enabled products), end-users of nanofabricated products (such as the multinational OEMs in industrial sectors such as automotive, aerospace and medical devices), research entities and service providers, in order to comprehensibly survey the needs of industry through a wide range of techniques. This will include one traditional survey, one-to-one interviews and pro-active attendance at critical industry events. Based on the results of such activity, **at least 50 concrete industrial needs for technologies**, services and access to infrastructures will be collected. Such needs will be used into T4.4 to complete brokerage services. This task will also provide industrial input into T3.3 to help directing project road mapping. The task will work closely with WP5 to ensure that all industrial stakeholder engagement is coordinated across the project. The results of this study will be reported in D4.2 (M18) and D4.4 (M26). In case of confidentiality issues, some industrial needs may be reported in general terms in the public deliverables and the related confidential description will be stored at NIA and RINA-C.

#### **Roles:**

**NIA:** Task leader. Performance of one-to-one interviews with industry stakeholders and attendance at critical industry events. Development of the form to collect industrial needs and collection of needs. Deliverable reporting.

**RINA-C:** Survey development and analysis of results. Prioritisation of the identified needs.

**CEA and TYNDALL:** Contribution to collection of the needs.

### 2.2 Adjustment of Task Due to COVID19

The COVID19 pandemic has caused some realignment of this task. Initially it was planned that face-to-face interaction with stakeholders at strategic industry events, such as trade shows, will be a means of having a first discussion with key contacts to help with developing an understanding of industrial needs. However, with travel to events being impossible, it was decided to initially focus on using digital channels to reach-out to industry. Whilst it had always been intended to use a survey as a means of collecting some industrial needs, it became apparent that using a survey would be the most effective means of collecting some initial stakeholder input, with the hope that as time passes, it again becomes possible to travel to events, where more face-to-face contacts can be made with industry. The form that was to be developed to be



used to help with interviewing industrial stakeholders was developed into an online survey which can be more easily shared digitally by all SUSNANOFAB partners.

In the next project period, it is hoped that once travel is possible and the events cycle is re-started, that attendance at key industry shows will allow the collection of more industrial needs and will make it easier to speak with potential industrial stakeholders that are not already currently in the wider network of the SUSNANOFAB partners.



### 3. Identifying Industrial Needs

Cold networking with potential new industry contacts was also going to become more problematic during the COVID19 pandemic, so rather than looking to perfect a collection template to be used at physical events and from that experience building a survey, it was decided to proceed immediately with an online survey as a first step to collect industry needs. The survey was developed by NIA, following feedback from some initial conversations with NIA industrial members.

The aim of the survey is to both collect identified industrial needs and how the respondent would seek to have these needs addressed. The survey was designed to be simple and quick for respondents to complete, whilst also gathering the data required by SUSNANOFAB to inform its other tasks.

#### 3.1 Industrial Needs Survey

The survey has been set-up as a Google Form. As most people are able to easily access Google Forms in their own browser of choice, it makes the survey accessible to all potential respondents and stops the project from having to be worried about any compatibility issues. As it is aimed to industry respondents who are often busy, the survey was designed to be easy to complete and to take only a few moments of people's time.

The survey collects a range of information from respondents to give some background to their situation (company name, country SME status, main sector of business), before asking them to identify their industrial need, their means of addressing it and if they would consider working with a third party. Each respondent has the option of providing up to 5 industrial needs, as it is accepted that some companies may have more than one need to be addressed.

#### 3.2 Survey Questions

Basic Details Section	
Your Name	
Company Name	
City/Town	
Country	
Email Address	
Is your company considered to be an SME? This is defined as a company with less than 250 staff and a turnover of less	Using standard EC SME definition. Close answer, selected from the following options: <ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul>





than €50m or annual balance sheet of less than €43m.	
Which of the following categories best describes the main industrial sectors your business operates in?	<p>Close answer, selected from the following options:</p> <ul style="list-style-type: none"> <li>• Advanced manufacturing</li> <li>• Advanced materials</li> <li>• Nanotechnology</li> <li>• Micro and Nano-electronics</li> <li>• Photonics</li> <li>• Industrial biotechnology</li> <li>• Digital technologies</li> <li>• Other...</li> </ul>
<b>Industrial Needs</b>	
Please select one type of industrial needs that your company faces. (You will later have the option to select more)	<p>Close answer, selected from the following options:</p> <ul style="list-style-type: none"> <li>• New knowledge required on process and design</li> <li>• New knowledge required on decision making</li> <li>• New Equipment/ infrastructure required</li> <li>• Access to equipment/ lab facilities/ pilot facilities needed</li> <li>• New staff needed</li> <li>• Finance/ investment needed</li> <li>• More Orders/ Customers</li> <li>• New R&amp;D/ technology needed (Access to new technology already invented but not owned by us)</li> <li>• New R&amp;D/ technology needed (Access to new technology not yet developed by anyone)</li> <li>• Regulatory compliance/ validation needed</li> <li>• Other:</li> </ul>
How would you seek to address the industrial need you identified above?	<p>Close answer, selected from the following options:</p> <ul style="list-style-type: none"> <li>• Access to training for staff</li> <li>• Licensing/ purchasing rights to technology (e.g. licensing IPR such as patents, or buying patents)</li> <li>• Purchase/ leasing of new equipment/ facilities/ infrastructure</li> <li>• Access to external infrastructure (pilot facilities/ equipment/ measurement facilities etc.)</li> <li>• External contracting of services or expertise (e.g. regulatory compliance)</li> <li>• Recruitment of new staff</li> <li>• External financing sought from borrowing of funds from bank or similar</li> <li>• External financing sought from investment into company</li> </ul>



	<ul style="list-style-type: none"> <li>• Investment in marketing</li> <li>• Attendance to trade shows/ exhibitions</li> <li>• Investment in own R&amp;D</li> <li>• Other...</li> </ul>
Describe in your own words your specific industrial need you identified above	Open answer: allows fuller definition of industrial need.
Would you consider working with a third party to solve this challenge?	Close answer, selected from the following options: <ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> <li>• Maybe</li> </ul>
<b>Finish Survey Question</b>	
Would you be happy for SusNanoFab to contact you to discuss your industrial needs further?	Close answer, selected from the following options: <ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul>

### 3.3 Promotion of Survey

The survey was promoted through SUSNANOFAB and its partners using a variety of channels. To help partners disseminate the survey to their existing networks, some centralised messaging was created for use in emails, websites, and social media channels.

#### Social Media Message

SUSNANOFAB is looking for companies to help it identify what the most pressing #industrialneeds are in #nanofabrication. Help by completing the short survey at <https://forms.gle/eJPdSeaS9SKHhpA56>

#SUSNANOFAB #Europe #EU #EUaction #CSA



## Email Message for Distribution to Partners' Contacts

Dear [Insert Name],

I am emailing you about a project we are currently engaged in. The SUSNANOFAB project (<https://susnanofab.eu/>) aims at creating a nanofabrication ecosystem which will help to enable pre-competitive conditions for the successful market uptake of nanofabricated products and solutions. This project is a Coordination and Support Action (CSA) funded by the EU Horizon 2020 R&I Programme.

I hope that you are able to spare a few minutes of your time and help by completing the survey (<https://forms.gle/eJPdSeaS9SKHhpA56>) and tell us a little about your industrial needs.

Currently, the project is approaching industrial stakeholders to help identify what their immediate industrial needs are. These needs consist in the challenges faced in bringing products or services to the market; which may include knowledge gaps, financial needs, access to infrastructures, or regulatory compliances. We would like to understand how companies seek to identify and address solutions to their industrial needs and their willingness to work with others to solve them.

This survey will help the project in identifying current industrial needs for the development of tailored training and brokerage opportunities. Survey participation is voluntary and all responses will remain anonymous. According to GDPR guidelines, no contact details will be shared outside of the project.

Many thanks in advance for helping us with this,

Kind regards,

[Your Name]

## Website Text for Partner Use

SUSNANOFAB aims at understanding how companies seek to identify and address solutions to their industrial needs and their willingness to work with others to solve their needs. The project is surveying industrial stakeholders to help identify what their immediate industrial needs are. These are the challenges faced in bringing their products or services to the market, which could include knowledge gaps, financial needs, access to infrastructures, or regulatory compliance. This survey will help us in constructing identify possible trainings and brokerage opportunities for the nanofabrication ecosystem.



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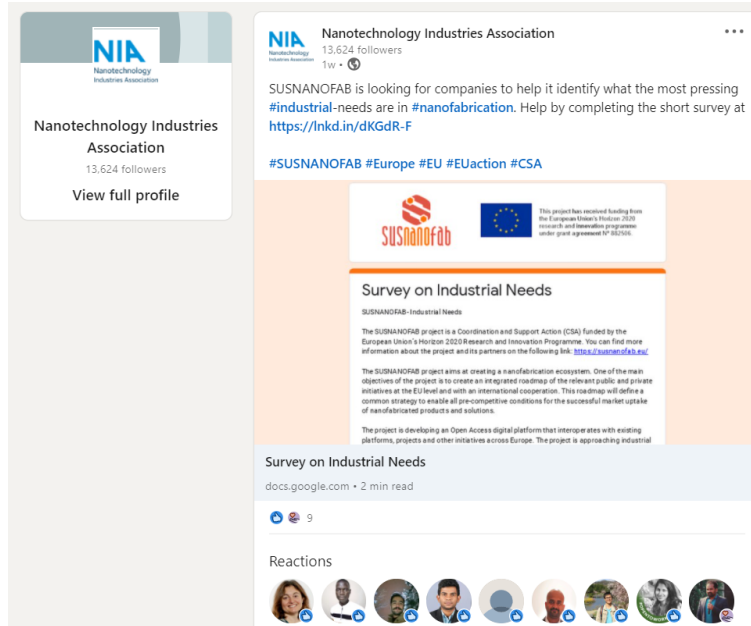


Figure 1. Example of Social Media Message on NIA LinkedIn Page



## 4. Results to Date

To comply with the General Data Protection Regulation and the need to keep personal details confidential as well as not disclose any commercially confidential information, this report will only present an edited version of the results. Individual responses will also not be presented, but only an overview of the summary responses.

To date, the response rate to the survey has been not as high as hoped. Despite the survey being distributed widely, there have only been a total of 7 individual responses, which have identified 12 industrial needs.

The respondents have mostly been from EU countries, with two out of seven being from non-EU countries (see Figure 2)

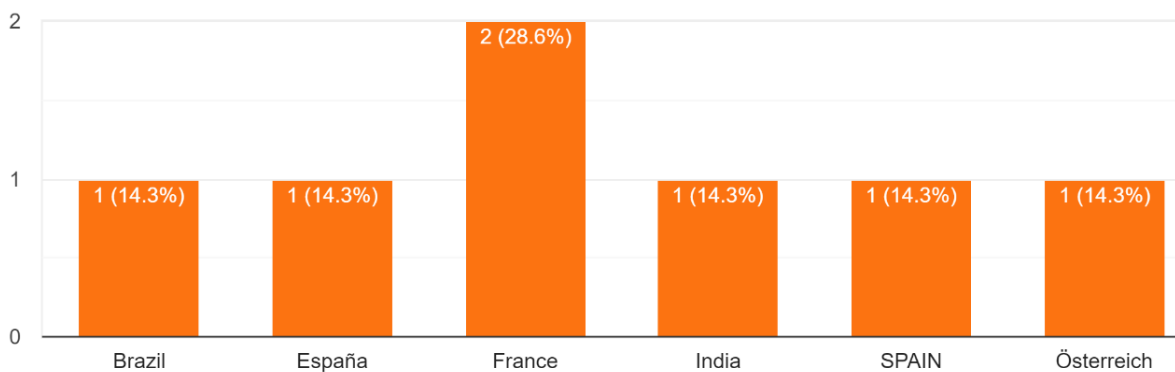


Figure 2. Countries of Survey Responses

The majority (86%) of responses have been from SMEs. In other words, companies with less than 250 staff and a turnover of less than €50m or a balance sheet of less than €43m. The companies come from a variety of different industrial sectors, with 5 out of 7 giving more than one sector that they operate in (the average number of sectors given is 2.6).

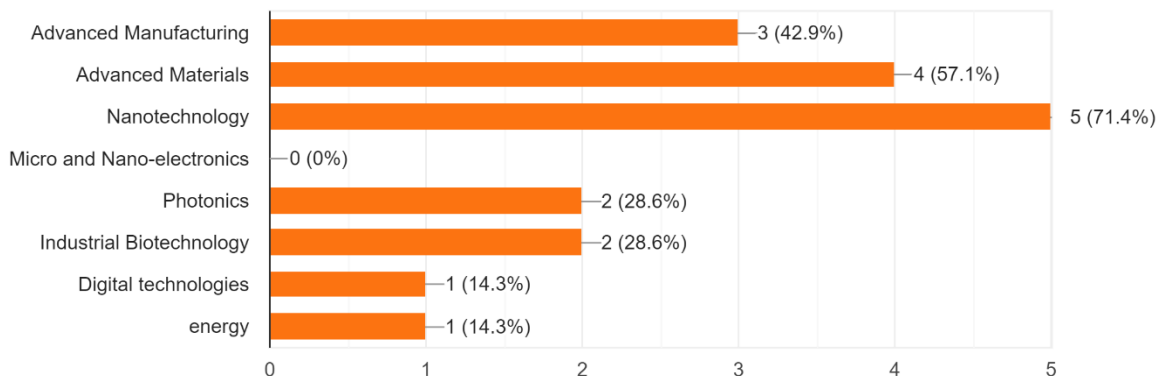


Figure 3. Responses to "Which categories best describe the main industrial sectors your business operates in?"

There was a total of 12 industrial needs identified (see Figure 4). Four of the seven respondents have identified two industrial needs and one of these has identified a 3<sup>rd</sup> industrial need. Figure 4 below gives the industrial needs by category given by



respondents. The most popular answer given by three respondents was that their need was for new R&D or technology that has not yet been developed, followed by the need for more orders or customers and the need for regulatory compliance or validation, each given by two respondents.

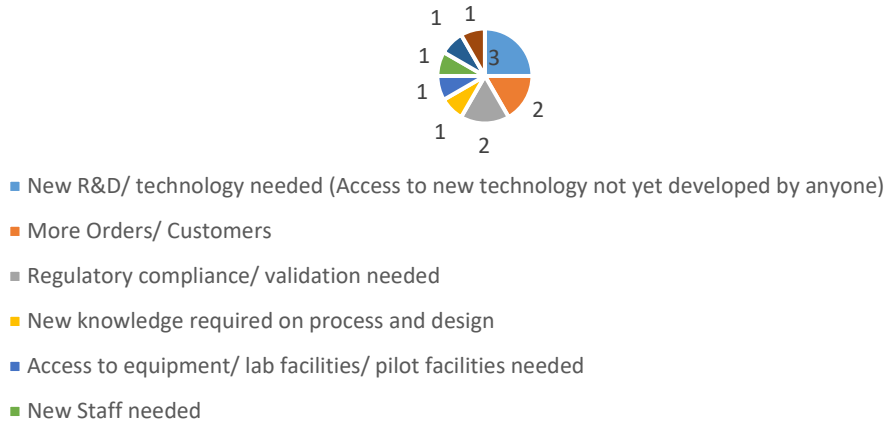


Figure 4. Identified Industrial Needs by Category

In the ways that respondents would seek to address their identified industrial needs, the largest category was investment in own R&D (see Figure 5). The “other” category was used by only one respondent and that was around applying new technology in heavily regulated markets, where clear processes for validation were required. The other answers that had more than one response was access to infrastructure, attendance at trade shows and recruitment of new staff, all with two responses. It will be seen that some of the responses given indicate that some of the companies anticipate dealing with their identified industrial needs in-house, such as recruitment of new staff and investment in own R&D. Understanding whether there is a need for a relationship with an external third party is important to help shape the project’s brokerage activity. However, with the current low number of responses, it is hard to draw firm conclusions at present.

The answers to this question were obviously related to the identified industrial need in the previous question and this does make it slightly more difficult to interpret in the whole, rather than the specific individual responses. Once further responses are collected in the next project period, a further analysis will be possible to both understand the relationship between the identified industrial needs and the intended mean of addressing them and also the willingness of companies to work with third parties to solve their industrial needs.

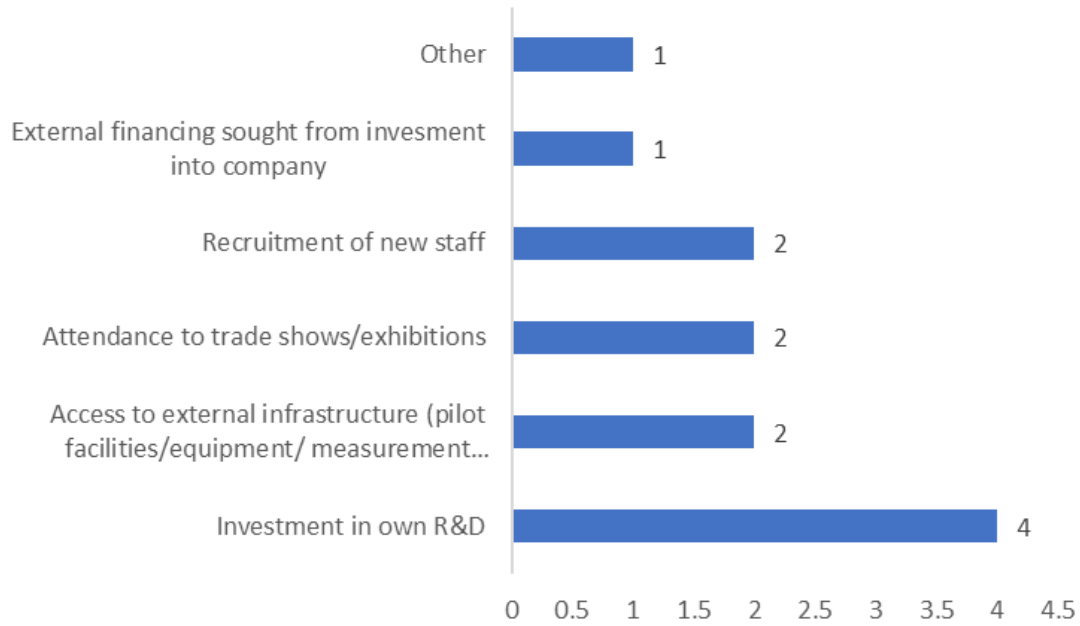


Figure 5. Addressing identified industrial needs

Finally, it is also good to note that of the 7 respondents, 4 would be happy to be contacted by SUSNANOFAB to discuss their industrial needs further. This will be useful in the establishment of the project brokerage in Task 4.3.



## 5. Future Workplan

The main aim for the next period is to build up the number of responses to the survey. There is a planned new marketing campaign to align with all SUSNANOFAB partners to undertake a coordinated drive to further promote the survey. This will build from the existing networks of the SUSNANOFAB partners and use direct email contacts and social media channels. Alongside the promotion of the online survey, a direct call campaign will also be initiated by the NIA. This will allow the project to speak one-to-one with industry representatives to interview them about their specific industrial needs and to understand how the SUSNANOFAB brokerage can be developed to help them solve their identified challenges. The networks of the SUSNANOFAB partners will be used as a starting point for one-to-one interviews, which will be arranged by NIA. The interviews will be an opportunity to both expand the number of identified industrial needs and to allow the project to go into more details with interviewees than is possible in the online survey.

It is important for the project to increase up the number of industrial needs identified to help steer the project's brokerage activity and ensure that it is designed to meet identified requirements.





## 6. Conclusion

This task has delivered an initial survey that has been used to identify industrial needs using some pre-defined categories and to see how industry believes that they would address these needs. The survey was run earlier than first anticipated to account for the impact that the COVID19 pandemic had on attendance at physical events. To date there have been seven responses to the survey identifying 12 industrial needs, which is a good initial contribution to the project's aim of collecting at least 50 industrial needs. In the next project period, there will be a focus on driving up the response rate using a mixture of social media marketing, targeted contacts with partners' wider networks and, when possible, attendance at future physical events such as trade shows and exhibitions. The results of this future work will be reported in D4.4 which is due in project month 26.