

## Industrial networking and outreach events

### Project Deliverable Information Sheet

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## 1 Introduction

Deliverable D3.3. corresponds to the activities in Task 3.2: Industrial networking and outreach. This focused on industrial liaison and catalysing technology transfer with the aim to expand the access and relevance of CERIC to the industrial fora, in particular SMEs with their own R&D personnel involved in materials research.

The key activities of this task have been the organization and participation in research-to-business (R2B) events involving representatives from the industrial networks on the partnership and outside. According to the industrial network involvement there have been two principal kinds of R2B events organised in ACCELERATE.

a) Organised by CERIC, Hereon (formerly HZG) and ESS partners, advertised to and involving primarily their existing industrial network. Regarding CERIC, the initial planning foresaw 5 small-scale R2B events organised by CERIC at its nodes. As each of the nodes specializes in some domain of materials research relevant only to a certain industrial domain each, topics of these events have been harmonized with the research domain of the nodes: At the beginning of the project information regarding the target sectors for CERIC Partner Facilities has been collected and it has been established, in order to maximize the resources of the projects, to both organizing own events and participating in large international events with booths and presentations.

ESS has organised two of these R2B events, joining together RI staff, industry and academic partners to elaborate innovation potential and applicability of ESS specific accelerator and detector technologies and in addition to give the opportunity to ESS researchers and other Accelerate partners to shape their innovative ideas into a business-oriented idea.

Hereon has organised two R2B events targeting communities in its own networks. These events were planned to be hosted at Hereon's outposts in Hamburg (DESY) and Garching (FRMII) and focus on engineering materials science

Owing to the Pandemic, some of the events were subsequently organised online.

b) Seven events organised by ESP and reaching out to new industrial communities. HEPTech, via ESP Central. The partner has compiled events agendas according to its own methodology designed to ensure that Industry is aware of the relevance of CERIC, and through the HEPTech and CERIC members invite industry to the events. The partner has organised events and participate to large international events with booths and presentations of CERIC. CERIC has used these events for connecting to new industrial networks and for learning ways to improve its own industrial networking and R2B organization.

As above, owing to the Pandemic some of the events were developed online.

## 2 R2B Events organised in ACCELERATE by CERIC, ESS and Hereon

### 2.1 Task development up to December 2019

The key activities of this task are the organization and participation in research-to-business (R2B) events. The topics were selected according to the partner interest (Hereon and ESS) and, for CERIC, according to initial interviews with Partner Facilities where they were asked for industrial sectors of interest, in order to better target the actions beyond the initial Accelerate planning. These sectors were also taken into account for the events developed by ESP (please refer to chapter 4 of the present document): The sectors mainly highlighted by CERIC Partner Facilities were the followings:

Chemical- Pharmaceutical, Energy (electronics, optics, semiconductors, conductors, new materials, topological insulators) Cultural Heritage, Automotive-Aerospace, Food, ICT, Biotechnology, Textile. The events carried out by CERIC and by ESP tried to tackle the maximum number of these sectors.

The activities carried out by CERIC, ESS and Hereon have been the following:

- ACCELERATE R2B event organised by CERIC on “Vibrational spectroscopy and Nuclear Magnetic Resonance techniques for industrial applications”, February 19-20, 2018. The event focused on industrial applications of NMR (Nuclear Magnetic Resonance), IR (infrared) and Nano IR and Raman Spectroscopy, experiences and perspectives for innovation in material science, especially for the pharmaceutical and food sector.
- ACCELERATE R2B event organised by CERIC on new analytical tools for engineering materials science on March 8-9, 2018. The event was organised as a parallel session at the SYNERGI 2018 event “Advanced Research Infrastructures enabling materials and engineering materials research for industry” and in addition to frontal presentation a Research-to-business matchmaking session took place.
- ACCELERATE R2B event by CERIC. CERIC has participated, setting a booth into the metal Additive Manufacturing Conference: Industrial Perspectives In Additive Technologies that has taken place in Austria on the 21st-23rd of November 2018 in the framework of the EARIV collaboration. Among the topics targeted, the conference focus also on currently known materials and analysis of their characteristics and new materials.

- ACCELERATE R2B event organised by Hereon as Industry Satellite Session, titled “Looking for the Indestructible - Damage, Failure and Fracture” during the DESY Photon Science and European XFEL Users’ Meeting in Hamburg, January 24, 2019. The event targeted aerospace, automotive, railway or other civic industries and has showcased how synchrotron radiation and neutrons can, in a non-destructive manner, give insights into the behaviour of materials and engineering components during fabrication or operation. Several techniques have been explained and linked to current questions. The Elettra ILO has supported CERIC in analysing and choosing which techniques, among CERIC ones, best fitted the event.
- ACCELERATE R2B event by ESS, March 07-08, 2019 in Lund: “Accelerate Your Idea: Technology transfer – Industry networking combined workshop” The event was an industry networking combined workshop bringing together ACCELERATE project partners working on Work Package 3 and their related partner facilities (ELETTRA and CUP were involved, inviting them and asking them to help in the providing and selection of innovative ideas from their institutions) in order to discuss on how to develop industrially relevant ideas and to shape those ideas to make them attractive for the industrial market. This includes technology transfer officers and researchers with ideas which can be transferred to the market. Moreover, representatives from technical, legal and innovation & business support organisations have also participated in the event.

## 2.2 Task development in 2020-2021

In 2020, owing to the Covid-19 pandemic, the originally planned activities were postponed until September 2020, hoping to have the opportunity to run the events on-site as planned. Unfortunately, this proved impossible and the partners decided to reshape the events into an online webinars series to be delivered in 2021.

The following activities were carried out:

- Hereon has organised, on the 9th of March 2021, an R2B workshop focused on the topic “Residual Stress Analysis”. This workshop covered both standard laboratory techniques and advanced methods at large scale research facilities, showcasing how synchrotron radiation and neutrons can, in a non-destructive manner, give insights into residual stress

in materials and engineering components during fabrication or operation. CERIC presented its own main techniques on residual stress analysis and main access modes for industry.

- ESS ran the event: “Innovation for Industry at European Research Infrastructures and ERICs – cases: European Spallation Source ERIC Accelerator and Detector Technologies – Progress, Challenges, and Opportunities” through 4 webinars on the 7th, the 14th, 21st and 28th of April of 2021, highlighting examples and cases of innovation for industry at European Research infrastructures in general, and ERICs in particular on accelerators and detector technologies. The cases have been presented by ESS representatives. CERIC opportunities of access for industry and neutrons solutions for industry has been also be presented.
  
- CERIC ran an online event on the 29th April 2021: “Research Infrastructures (RIs) - Energy Industry Meeting: Improving Industry Usage of RIs” focused on the relationship between Energy companies (batteries, energy storage, fuel cells, PV) and Research Infrastructures (RIs), highlighting:
  - Access to Research Infrastructures, modes of access, how companies currently access to the infrastructures
  - Example of collaborations
  - Lessons learned: advantages, opportunities, weaknesses
  - Opportunities to improve access for industry

Short interventions by companies and infrastructure representatives took place where the types of existing relationships and opportunities to improve access for companies to research infrastructures were discussed.

The links to the complete programmes and information related to the events are reported in the ANNEX I

## 2.3 Interviews with companies conducted in 2021

CERIC moreover proposed, instead of one event, to carry out one-to-one interviews with companies mainly from the energy sector, focused on understanding if the way of access to RIs could be improved. This activity will bring CERIC great value to improve its relationship with industry and to bring opportunities in the future. This activity is related also to CERIC's last R2B event that will be focused on the Energy sector. Our linked party in the project, Charles university of Prague (CUP) and our partner in the project ESP Central have involved in both activities.

The interviews were conducted online or by phone focusing on the following topics, in an open qualitative way:

- o How often do you collaborate with Research Infrastructures? (how many collaborations in the last 5 years)
- o How do you select a new collaborator? (Which is the process, how you get in contact usually, etc) Which are the current requirements to select a collaborator/provider of a scientific service?
- o Which is the current way you get access to RIs? Ex: Do you contact directly the corresponding office with a direct request, do you have to fulfil online forms? Do you have to go through open calls or via H2020 projects consortiums?
- o Which are the kind of projects? (ex: External support on specific tasks, contract research, co-development project, testing, consultancy not involving research, etc) Is the collaboration usually continuous, set through framework agreements, or case by case?
- o Which are the main constraints to collaborate or to collaborate more with RIs? -Which are the main barriers you encounter to collaborate with RIs? Is there any unacceptable condition under which you will not collaborate with a RI? (ex: Legal, ownership of the results)
- o Which research infrastructure do you know, do you hear/know about CERIC before our contact?

Nine companies were interviewed and care was taken to ensure that there were both small and large companies represented. People interviewed are all people in charge of research and/or relationship with external research partners in the company. The process was time-consuming, but very effective in uncovering new insights and building on the relationships with the



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interviewees, many of whom were new contacts and who went on to participate in later ACCELERATE activities.

With all the interviewed people, for privacy and confidentiality reasons it has been agreed their answers are published without associating the company name with the specific answers. One company didn't want his name to appear, so it has been described the type of entity not reporting the name.

This doesn't affect the relevance of the information collected, as it has been considered as a whole in order to understand barriers and constraints of industry access to Research Infrastructures. The findings of the interviews are presented in the Chapter 4 "Finding and Conclusions" of the present document. The detailed interviews can be found in the Annex III of this document.

### 2.3.1 Companies interviewed

Here below the companies interviewed are presented.

#### **GenCell**

GenCell Energy GNCL (TASE) is an Israeli company with more than 90 employees specializing in fuel cell technology that powers spacecraft, and delivers backup power for utilities, homeland security, healthcare and automated industries. They based their offer on a revolutionary process to create hydrogen-on-demand from anhydrous ammonia (NH<sub>3</sub>) that enables their fuel cell solutions to also provide primary power for off-grid and poor-grid sites, as well as rural electrification.

#### **Lucideon Inc**

Lucideon is an R&D and commercialisation SME specialising in materials technologies and processes. Very interested in the application of cross-industry insight, materials science expertise and innovation, built around finding disruptive materials performance to give competitive advantage to its customers. Lucideon is headquartered in the UK with 140 staff, with an additional lab in the US.

Lucideon are particularly strong in ceramics, but also very active with metals and inorganic materials with customers in healthcare, construction and energy. Recent large programmes include projects for NNL (formerly the national nuclear laboratory) looking at fuel processing.

#### **Finden Ltd**

Finden is a measurement and analysis company primarily providing services to large companies such as Duracell, BASF, Toyota, BP and others. The company does its own R&D into measurement



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and analytics techniques and possesses some capability, but primarily works with external specialist facilities at various scales including relatively rich engagement with RIs across Europe.

### **BorgWarner Inc.**

BorgWarner is a large multi-national, publicly listed company with a broad portfolio of interests relating to rotating machinery historically automotive transmission and turbocharging technologies, but with growth plans into energy applications. This is driven partly by the shift to electrical power for vehicles, but also opportunities in novel electrical power generation and management.

### **Infineum Ltd**

Infineum use advanced characterisation methods in industrial R&D, primarily in the area of lubricants and fuel additives, surfactants and functional polymers. Their customers are other businesses, and they are richly involved in the academic landscape. The application areas for their applied research are extremely wide, ranging from cooling fluids for EV batteries (70% of the market use their product) to electrophoretic displays. They are also very active in using mathematical modelling and supercomputer facilities to synthesise neutron experiments.

### **ENI S.p.A**

Eni S.p.A. is an Italian multinational oil and gas company with around 30,000 people in 68 countries throughout the world. Its activities range from the development of new energy solutions to the more traditional exploration and production of hydrocarbons, and the refining and marketing of oil products and biofuels. The company is focusing on new energy sources and technologies through also its Research centre for renewable energy and the environment in Novara. Eni strategy is targeting new solutions for energy storage including new batteries and solutions related to fuel cells.

### **Industrie De Nora S.p.A**

Industrie De Nora is an Italian multinational with more than 1500 employees and revenues of around 500 M euros. The company is leader in sustainable technologies, that offers energy saving products and water treatment solutions. They are largest supplier in the world of insoluble electrodes for electrochemical applications and a leading player in providing equipment, systems and processes for water disinfection and filtration. Their technologies have several industrial



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applications: chemistry, water purification, electronics, energy storage and many others and infrastructural corrosion protection. Industrie De Nora has a long history of supplying catalysts as well as gas diffusion electrodes (GDE) in the field of fuel cells and in the development of strategic materials such as copper foil for new innovative batteries.

### **Multinational company**

Leading multinational in the automotive sector and partner of the world's leading car manufacturers develops cutting-edge technological solutions for energy production and storage. Its research centre is also focusing on the design and industrialization of fuel cell technologies

### **ASG Superconductors S.p.A**

ASG Superconductors is a worldwide leader in design and manufacture of conventional and superconducting magnets for research and industrial high energy physics applications, and leader in developing magnesium diboride (MgB<sub>2</sub>) wire. Its technologies and products are applied in thermonuclear fusion, in the medical sector, in research applications and in energy, and in particular the transport and storage of energy.

## **3 R2B Events organised in ACCELERATE by ESP**

### **3.1 Task development up to December 2019**

The task was designed by ESP in order to reach out to new industrial communities to raise awareness of the relevance of CERIC and Research Infrastructures among industry. The sectors targeted were chosen according to the sectors of interest highlighted by CERIC Partner Facilities. As of December 2019, the following activities have been carried out:

- ACCELERATE R2B event organised by ESP in “Nanotechnology and nanomaterials and their applications to industry” in Prague, February 15-16, 2018. The event brought together academic researchers from CERIC Partner facilities and industry to share ideas, potential applications and fostering collaborations in the focusing on Energy, ICT, environmental and health science.
- ACCELERATE R2B event organised by ESP in the Academia-Industry Matching Event – “Machine Learning and Visual Analytics in the Clouds Workshop” in Budapest, 29-30 October 2018. The event brought together academic researchers and industry experts to

share ideas, potential applications and fostering collaborations in the newly emerging field of big data, data quality, security and management among others.

- ESP has participated with a booth at “EUROFINISH + Materials 2019” in Leuven on May 15 -16, 2019. The show is the largest meeting point in Western Europe for materials, surface treatment and bonding technologies and targets industry as well as researchers. ESP invited CERIC to give a presentation during the trade show highlighting the goals of one of their research projects applied to Pharmaceutical Industry, which deploys multiple nano-analytical techniques for studies on drug quality control.
- ESP has represented Accelerate with a booth at the “Advanced Engineering Show” in Birmingham on October 30-31, 2019, which is UK’s largest annual advanced manufacturing trade show. The opportunities that CERIC Research Infrastructures can offer to industries in the fields of advanced engineering have been showcased. Moreover, in a session focused on additive manufacturing and the need to produce reliable products of the same quality, Hereon gave a presentation about experiments with the aim of looking at material whilst being deposited, analysing its characteristics.

### 3.2 Task development in 2020-2021

Owing to the Covid-19 pandemic, the activities planned by ESP were postponed, hoping to be able to carry out or participate to on-site events. This finally was not possible and the remaining activities were re-shaped in an online format:

- ESP organised a complete session at ESOF 2020 in collaboration with CERIC, focused on Cultural Heritage on 06 September 2020 (“Illuminating Cultural Heritage: from Research to Preservation”). The session has brought together 4 scientific experts in the field to discuss various aspects of the need and the use of cultural heritage research, as well as its applications

Among others, the topics of the discussion included

- Examples of cultural and natural heritage items that the speakers have worked on, and the techniques used for the research study. Some of these examples includes Leonardo da Vinci’s Horse & Rider statue, fossils and more.
- How cultural heritage can be protected using technology.
- How different disciplines have successfully worked together to preserve cultural heritage

- In addition, ESP carried out the “Radiation Safety and Quality at Research Infrastructures” event, which were co-organised by ESS, through three webinars focused on radiation safety in large scale facilities which were held on September 23rd and October 7th and 21<sup>st</sup>, 2020. Each talk was facilitated by an expert in the field, tackling different angles of the topic, ranging from:
  - Radiation safety expert perspective: The focus was on various types of ionising radiation, which plays a vital role in research. Best practices in radiation protection and common challenges were also tackled.
  - Industry user perspective: Considering that many companies use radiation facilities for their research, it is necessary to be fully aware of how the research staff can be protected from the excess exposure and what impact radiations may have on samples and objects under investigation.
  - Supplier perspective: It is crucial for equipment and/or component suppliers dealing with radiation facilities to be informed about the regulations and safety measures on site. This becoming increasingly important, since there are signs that there is a shift interpretation of regulation

At the event CERIC was presented and the Budapest Neutron Centre, partner facility of CERIC ran one of the presentations as an expert. The organization was carried out in collaboration with CERIC and all the attendees’ details were collected by CERIC in order to maximize the enlargement of CERIC fora.

- ESP has run a last online event on 20th of May on how technologies and capabilities from CERIC’s Slovenian and Croatian partner facilities can contribute to sustainable development: “Tech for Social Good: How NMR & Ion Beams can help industry solve UN SDGs”. The event involved companies that had experience in using the techniques part of the facilities giving highlights on the solutions useful for industrial applications. CERIC partner facilities and the companies were involved in an interactive session.

The links to the complete programmes and information related to the events are reported in the ANNEX II.

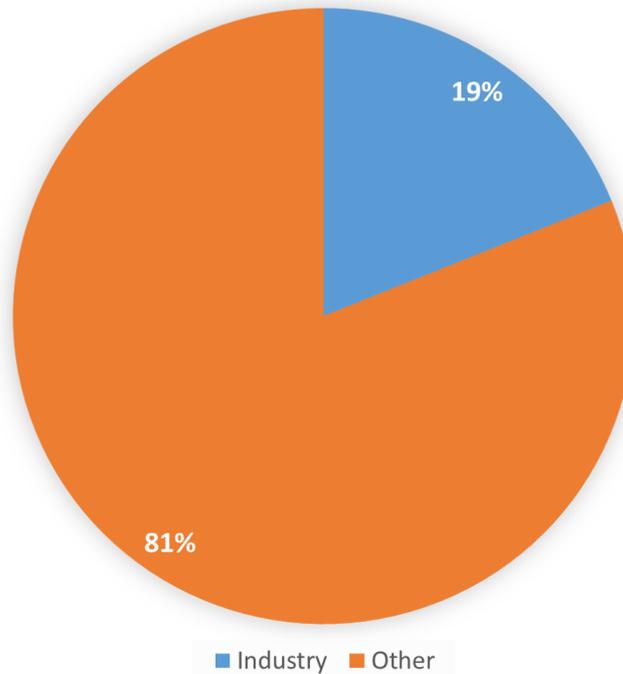




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countries but this decision was taken accordingly to the scope of the task and of the whole Work Package in order to tackle countries that are of interest for CERIC Consortium. For the activities in the UK (Advanced Engineering Show, Birmingham), no detailed data about the countries of origin of the booth visitors are available, but they can be considered mostly from the UK.



**Figure 3.2:** Percentage of participants affiliated to Industry. Other includes participants affiliated to academic environment.

Figure 3.2. shows, that, even if the number of companies, according to the project target, were reached (i.e.: five companies for each of small R2B events organized by CERIC, ESS and Hereon), 19% of the participants at overall ACCELERATE R2B events had their affiliation in industry (excluding recording views as affiliations cannot be defined for them). The majority was from the academic sector, including research infrastructures. This is a well-known challenge for all who deal in outreach to potential industrial users. One reason is that industrial R&D staff are much less flexible in their activities than academic staff. If an industrial researcher does not expect an immediate solution to a current problem, in most cases it is not attractive for them to participate in events, especially if it means one or more days of business travel. Another aspect is that research infrastructures have to improve their concepts for outreach events to make them more focused and more attractive to industrial R&D staff. This is also partially reflected in the findings of the interviews with selected companies (Section 2.4) conducted by CERIC.

It has to be highlighted that the percentage of industry participation changed significantly in the case of smaller events carried out targeting specific companies selected in advance and reached



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through one-to-one invitations such as in CERIC event “Vibrational spectroscopy and Nuclear Magnetic Resonance techniques for industrial applications” on February 19-20, 2018: the percentage of Industry participation has been of 38% (10 out of 26 participants).

On the other hand, larger events organised by the WP 3 Partners seemed not to be so effective in order to reach industry.

Since those evidences, CERIC and the WP 3 Partners put in place some corrective measures during the development of the task in order to improve the effectiveness of the actions. Other actions will be put in place in the future, beyond Accelerate project:

- Even though it was not originally planned in the project, CERIC has developed a completely new brochure, divided by industry sectors: for each sector highlights of possible solutions offered by CERIC Research Infrastructure are presented in order to highly specify the message delivered to the industry according to its needs. (the brochure is available at : <https://www.ceric-eric.eu/wp-content/uploads/2020/05/CERIC-Brochure-for-Industry.pdf>)
- Another event by CERIC ("Research Infrastructures (RIs) - Energy Industry Meeting: Improving Industry Usage of RIs" on the 29 April 2021) has been organized following the strategy and procedure of selection of companies and one-to-one invitations, used for a previous event. The percentage of the industry representative participation was of 46% (12 out of 26 participants). This strategy seems to be quite effective, but not efficient as it implies a huge communication effort, being very time-consuming. For this reason, CERIC has planned to develop a new communication strategy toward the industry in order to ameliorate the effort/effectiveness ratio.
- ESS decided to run one of its events, the “Accelerate Your Idea: Technology transfer – Industry networking combined workshop” in a very interactive way, to really improve synergies with industry
- It was decided to mix the organization of events by ESP with participation in large industrial fairs with booths and presentations, profiting from the existing network and structure of those events, in order to reach new people. This has led to a sensitive improvement on the results: larger events participated by ESP have been more useful to target wider audience outside CERIC network, and the participation to industry focused fairs such as EUROFINISH + Materials 2019 in Leuven on May 15 -16, 2019 and the Advanced Engineering Show in Birmingham on October 30-31, 2019 has led to respectively 25 and 30 one-to-one meetings (for the Advanced Engineering Show 75% of those meetings have been with Industry representatives according to what reported by the partner) where CERIC and Research Infrastructure potential applications and solutions were presented.



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- Regarding specific results obtained by R2B events, a collaboration with a company was rekindle for one of the CERIC Partner facilities thank to the first event carried out by CERIC in Trieste on “Vibrational spectroscopy and Nuclear Magnetic Resonance techniques for industrial applications”, February 19-20, 2018, and two potential collaboration are being discussed after the last events: “Research Infrastructures (RIs) - Energy Industry Meeting: Improving Industry Usage of RIs” on the 29 April 2021 and, “Tech for Social Good: How NMR & Ion Beams can help industry solve UN SDGs” run on the 20<sup>th</sup> of May, confirming that smaller events where specific companies are personally invited seem to be more effective.

## 4.2 Companies interviews

Some key points that have emerged from company discussions, and are reported here below:

Discovery and awareness remain an issue, and there is room for more basic outreach to be done. The potential of “one-door” access such CERIC seems to be quite unknown. It has been already considered from CERIC to shape a new communication plan targeted to industry in order to improve the awareness among industry. The channels used at the moment seem to not be effective compared to the effort employed.

Companies typically need help in translating what a given capability means for their own application, and intermediaries are useful for this. This suggests that marketing and awareness to these intermediaries and intermediary organisations could be more impactful than directly to companies (though both approaches are needed).

Predictable costs are important: the results of experiments are always valued, but when executed on a commercial basis they can be unclear up front. Even if on research collaborations deviations can be expected, it is considered valuable to minimize them with a very well-structured budget planning.

Timeliness for completion matters, and there can be mismatches between the tempo of the company and the RI.

A pan-EU calendar of beamline slots would be very impactful for businesses' own planning cycles. It has to be considered that this is a difficult request to put in place considering the functioning of the different Research Infrastructures among Europe.

Framework agreement seems a good way to set the initial collaboration, in order to fasten up the administrative process once a specific project wants to be developed. Also, the agility and fast response of all administrative matters is highlighted as a point that can be improved. CERIC is already considering publishing the different types of agreements it has set according to the service in its webpage, guaranteeing that if the company doesn't need major changing on the agreements all the administrative steps can be solve in a very short period of time.

Regarding IP, in general companies prefer to have the ownership of all the results, in case of co-development paying the corresponding value to the Research Infrastructures. The publishing can be permitted after an embargo period. These aspects have been already considered by CERIC in the standard agreements set

Working tables among Research Infrastructures-Industry-Governments have been highlighted as very useful in other regions outside Europe. Attention will be paid to how they are structured in order to improve or contribute to similar system in Europe.



## **Annex I: Links to the programmes and related information of R2B events run by CERIC, ESS and Hereon**

““Vibrational spectroscopy and Nuclear Magnetic Resonance techniques for industrial applications”, February 19-20, 2018”:

<https://www.ceric-eric.eu/wp-content/uploads/2018/07/R2BOctoberEvent-Agenda.pdf>

Parallel session at the SYNERGI 2018 event “Advanced Research Infrastructures enabling materials and engineering materials research for industry”

[http://www.accelerate2020.eu/event/accelerate-parallel-session-at-synergi-2018/?instance\\_id=1](http://www.accelerate2020.eu/event/accelerate-parallel-session-at-synergi-2018/?instance_id=1)

ACCELERATE @ the Industry Satellite Session ‘Looking for the Indestructible: Preventing Damage, Failure and Fracture’, January 24, 2019

[http://www.accelerate2020.eu/event/accelerate-the-industry-satellite-session-looking-for-the-indestructible-preventing-damage-failure-and-fracture/?instance\\_id=34](http://www.accelerate2020.eu/event/accelerate-the-industry-satellite-session-looking-for-the-indestructible-preventing-damage-failure-and-fracture/?instance_id=34)

“Accelerate Your Idea: Technology transfer – Industry networking combined workshop”, March 07-08, 2019

<https://www.accelerate2020.eu/accelerate-your-idea-technology-transfer-industry-networking-combined-workshop/>

Research2Business Online-Workshop: “Residual Stress Analysis, 9th of March 2021

<https://indico.desy.de/event/28519/>

“Innovation for Industry at European Research Infrastructures and ERICs – cases: European Spallation Source ERIC Accelerator and Detector Technologies – Progress, Challenges, and Opportunities” on the 7th, the 14th, 21st and 28th of April of 2021

[http://www.accelerate2020.eu/event/innovation-for-industry-at-european-research-infrastructures-and-erics-cases-european-spallation-source-eric-accelerator-and-detector-technologies-progress-challenges-and-opportunities/?instance\\_id=83](http://www.accelerate2020.eu/event/innovation-for-industry-at-european-research-infrastructures-and-erics-cases-european-spallation-source-eric-accelerator-and-detector-technologies-progress-challenges-and-opportunities/?instance_id=83)

<https://vimeo.com/543151294>

<https://vimeo.com/540191850>

<https://vimeo.com/538627554>

<https://vimeo.com/538616197>

Research Infrastructures (RIs) – Energy Industry Meeting: Improving Industry Usage of RIs  
29 April 2021

[https://www.accelerate2020.eu/event/research-infrastructures-ris-energy-industry-meeting-improving-industry-usage-of-ris/?instance\\_id=85](https://www.accelerate2020.eu/event/research-infrastructures-ris-energy-industry-meeting-improving-industry-usage-of-ris/?instance_id=85)



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## 5 Annex II: Links to the programmes and related information of R2B events run by ESP

“Nanotechnology and nanomaterials and their applications to industry” in Prague, February 15-16, 2018

[http://www.accelerate2020.eu/event/nanotechnology-from-materials-to-science-conference/?instance\\_id=3](http://www.accelerate2020.eu/event/nanotechnology-from-materials-to-science-conference/?instance_id=3)

“Machine Learning and Visual Analytics in the Clouds Workshop” in Budapest, 29-30 October 2018

<https://www.accelerate2020.eu/accelerate-at-the-academia-industry-matching-event/>

“EUROFINISH + Materials 2019” Leuven on May 15 -16, 2019.

<https://www.accelerate2020.eu/cerics-internal-research-project-presented-at-the-congress-eurofinish-materials-2019/>

“Advanced Engineering Show” in Birmingham on October 30-31, 2019

[https://www.accelerate2020.eu/event/accelerate-at-the-advanced-engineering-show-birmingham/?instance\\_id=56](https://www.accelerate2020.eu/event/accelerate-at-the-advanced-engineering-show-birmingham/?instance_id=56)

“Illuminating Cultural Heritage: from Research To Preservation” Session at ESOF 2020 on 06 September 2020.

<https://www.accelerate2020.eu/illuminating-cultural-heritage-from-research-to-preservation/>

“Radiation Safety and Quality at Research Infrastructures” on September 23rd and October 7th and 21<sup>st</sup>, 2020

<https://www.accelerate2020.eu/radiation-safety-and-quality-at-research-infrastructures/>

<https://vimeo.com/470546837>

<https://vimeo.com/470552875>

<https://vimeo.com/470925423>

“Tech for Social Good: How NMR & Ion Beams can help industry solve UN SDGs”, 20<sup>th</sup> May 2021

<http://www.accelerate2020.eu/event/tech-for-social-good-how-nmr-ion-beams-can-help-industry-solve-un-sdgs/>

## 6 Annex III: Interviews

<b>Company 1</b>	
<b>Q1:</b> How often do you collaborate with Research Infrastructures? (how many collaborations in the last 5 years)	
	Very intensive collaborations, with access to Research Infrastructures currently about every two months, more usually about once per month. Considering the accesses, the company had more than 100 in the last five years.
<b>Q2:</b> How do you select a new collaborator? (Which is the process, how you get in contact usually, etc) Which are the current requirements to select a collaborator/provider of a scientific service?	
	The company is very technically literate, and seeks contract services based on capability and awareness, and particularly likes to work with partners that are willing to try new things and not be too risk-averse. Projects range from being a few hours of beam-time, to 20+ shifts. The company will be using the RI as part of a delivery for a customer and will be very clear about their technical requirements.
<b>Q3:</b> Which is the current way you get access to RIs? Ex: Do you contact directly the corresponding office with a direct request, do you have to fulfil online forms? Do you have to go through open calls or via H2020 projects consortiums? Would you prefer a different way? More formal, more informal? Would you change some steps of the way you to get access?	
	<p>The company directly corresponds with the appropriate office. As they engaged in many types of projects with many different clients of their own, it is not possible to systematise their approach.</p> <p>A key challenge for the company is the “logistical nightmare” that can occur in trying to synchronise access across more than one facility. The company typically wants a specific station for a specific technique. Experimental investigations are frequently multi-modal across multiple sites and often time-bound. With the facilities themselves also having access demands to juggle, a lot of time can be consumed in simply trying to line all the dates up in the calendar, usually takes more than a day of labour to do this, spread over several days while waiting for responses.</p> <p>It is recognised that it is a near-impossible ask, but ideal from company’s point-of-view would be some form of Europe-wide calendar of slot availability would be transformational compared with having to arrange things in the currently very piecemeal way.</p>
<b>Q4:</b> Which is the kind of projects? (ex: External support on specific tasks, contract research, co-development project, testing, consultancy not involving research, etc) Is the collaboration usually continuous set through framework agreements or case by case?	
	The projects have been case by case, but sometimes of long duration. They are about contract work for measurement and characterisation. IP issues have not yet been an



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<p>issue, though as there can be notable intellectual input from the company into experimental design, it is considered that it may become a factor.</p>
<p><b>Q5:</b> Which are the main constraints to collaborate or to collaborate more with RIs? Which are the main barriers you encounter to collaborate with RIs? Is there any unacceptable condition under which you will not collaborate with a RI? (ex: Legal, ownership of the results, timings offered)</p>
<p>The Company is keen to grow its awareness of the facilities which are available. From the list in Q6 It can be seen that they are quite active across Europe, but they are aware that there is more that they don't know.</p> <p>In terms of barriers, there can often be a mismatch in 'business-like' approach that they need when contracting to use beam time. This can show in overhead cost for setting up experimental equipment at a station, and where the pace can seem unhurried when to the company they are paying by the hour. Of course, sometimes it can be that the station is already set up the right way from some previous use, but that doesn't happen often enough to balance out the extra cost. Thus, it could be seen that price is not specifically a problem, but the slight lack of control over the overhead makes things difficult when the cost is being passed on by the company to their own client.</p>
<p><b>Q6:</b> Which research infrastructures do you know, do you hear/know about CERIC?</p>
<p>DESY, ISIS, ESRF, Diamond, Soleil, Alba</p>

<b>Company 2</b>
<b>Q1:</b> How often do you collaborate with Research Infrastructures? (how many collaborations in the last 5 years)
The company had around 10 collaborations in the last 5 years
<b>Q2:</b> How do you select a new collaborator? (Which is the process, how you get in contact usually, etc) Which are the current requirements to select a collaborator/provider of a scientific service?
The company select its research partners looking for specific capabilities and selecting on that. They also participate and look for partners in international forum.
<b>Q3:</b> Which is the current way you get access to RIs? Ex: Do you contact directly the corresponding office with a direct request, do you have to fulfil online forms? Do you have to go through open calls or via H2020 projects consortiums? Would you prefer a different way? More formal, more informal? Would you change some steps of the way you to get access?
The company doesn't usually fulfil forms, they prefer to contact directly the person responsible in the institution, related to the capabilities they are looking for. They also get access to RI though participating in H2020 projects,
<b>Q4:</b> Which is the kind of projects? (ex: External support on specific tasks, contract research, co-development project, testing, consultancy not involving research, etc) Is the collaboration usually continuous set through framework agreements or case by case?
The company had experience with every kind of collaboration, also consultancy. They usually set framework agreements
<b>Q5:</b> Which are the main constraints to collaborate or to collaborate more with RIs? Which are the main barriers you encounter to collaborate with RIs? Is there any unacceptable condition under which you will not collaborate with a RI? (ex: Legal, ownership of the results, timings offered)
The company tries to not go through public financed projects, they prefer to pay the research service, and to assure that the Intellectual Property will be owned by them, but in case the research collaborator wants to use the IP for a different application/sector they are open to this possibility.
<b>Q6:</b> Which research infrastructures do you know, do you hear/know about CERIC?
Different Fraunhofer institutes, CERN, but they didn't know CERIC before the recent contact.

<b>Company 3</b>
<b>Q1: How often do you collaborate with Research Infrastructures? (how many collaborations in the last 5 years)</b>
In normal times the company accesses RIs monthly, mainly with ISIS, Diamond, ESRF, ILL and NIST in the USA. The company has also funded post-docs and PhD students at RIs.
<b>Q2: How do you select a new collaborator? (Which is the process, how you get in contact usually, etc) Which are the current requirements to select a collaborator/provider of a scientific service?</b>
The company is driven by price and then technical capability. NIST is popular owing to its low hourly charge (its charge-out rate does not include overheads); though its capabilities are basic, and it is costlier for travel, hence much work is undertaken in Europe.
<b>Q3: Which is the current way you get access to RIs? Ex: Do you contact directly the corresponding office with a direct request, do you have to fulfil online forms? Do you have to go through open calls or via H2020 projects consortiums? Would you prefer a different way? More formal, more informal? Would you change some steps of the way you to get access?</b>
Being an R&D intensive company means that the company has knowledge of capabilities that are available and have direct contacts in many facilities. One point that was made, though, was that this institutional confidence would be rare and the company is aware that some small companies that they work with are inhibited about making first contact with a facility and suggested that most facilities lacked a person available that would be skilled in talking at the right level with a new enquirer.
<b>Q4: Which is the kind of projects? (ex: External support on specific tasks, contract research, co-development project, testing, consultancy not involving research, etc) Is the collaboration usually continuous set through framework agreements or case by case?</b>
The company adopts a variety of kinds of projects according to need. Contract research is key, usually for their own R&D programme. They also fund universities in and will sometimes work on a shared basis using academically funded access route where the learning could result in publishable results. The company is open to exploring hybrid models where some parts of the work may need to be proprietary.
<b>Q5: Which are the main constraints to collaborate or to collaborate more with RIs? Which are the main barriers you encounter to collaborate with RIs? Is there any unacceptable condition under which you will not collaborate with a RI? (ex: Legal, ownership of the results, timings offered)</b>
Time to access can be an issue, though it is recognised that RIs will have their own juggling issues. A pan European calendar with outline beam availability slots would be a real game-changer, but is understood to be hard to achieve. Otherwise, the suggestion is that RIs could have a cadence of slots on a regular basis which are presumed available for industrial access. There have been no issues with negotiation



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of the legal results, and company's experience of working with RIs is universally positive.
<b>Q6: Which research infrastructures do you know, do you hear/know about CERIC?</b>
They are aware of ILL, ESRF, ISIS, Diamond, NIST, Argonne National Lab, SAGA-LS in Japan

<b>Company 4</b>
<b>Q1: How often do you collaborate with Research Infrastructures? (how many collaborations in the last 5 years)</b>
The company constantly works with Research Infrastructures. With some research entities they have framework agreements. In the last 5 years they had around 10 framework agreements where they approximate reach 100 orders related to those framework agreements
<b>Q2: How do you select a new collaborator? (Which is the process, how you get in contact usually, etc.) Which are the current requirements to select a collaborator/provider of a scientific service?</b>
In around 70% of the cases the contact was a direct contact with the institution previously known, around 30% through scouting with company's institutional partners, current collaborators and their network, or the selection was made through the scientific articles related to the topic of interest. There is no specific limitation on the selection, but due to company's policy they tend to select national partners, in any case the partners need to have demonstrated scientific value/experience specific to the project; technological capabilities (tools, size of the infrastructure, etc.) are also considered. Regarding the intellectual Property (IP), in large collaborations where the partner contributes also from a financing point of view, the property of the results is agreed case by case; otherwise the company tends to claim the ownership of the results, establishing permission and timings to publish the results
<b>Q3: Which is the current way you get access to RIs? Ex: Do you contact directly the corresponding office with a direct request, do you have to fulfil online forms? Do you have to go through open calls or via H2020 projects consortiums? Would you prefer a different way? More formal, more informal? Would you change some steps of the way you to get access?</b>
The company usually don't fulfil standardized forms, as it's difficult that the company asks just for very specific analysis. The company has usually open framework agreements: the company contacts the reference person to define the scope of the new collaboration based on the framework agreements, receiving back an informal budget; based on the budget the company starts the planning and all the bureaucratic steps. They don't consider online forms as useful, unless just for standard analysis or in case they need access to techniques that they don't know.
<b>Q4: Which is the kind of projects? (ex: External support on specific tasks, contract research, co-development project, testing, consultancy not involving research, etc) Is the collaboration usually continuous set through framework agreements or case by case?</b>



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<p>The company mainly works with external support on specific tasks, but also in co-development projects and testing. Regarding consultancy it's always related to a wider collaboration. The company also invest financing PhDs focused on low TRL level research for topics of interest.</p>
<p><b>Q5:</b> Which are the main constraints to collaborate or to collaborate more with RIs? Which are the main barriers you encounter to collaborate with RIs? Is there any unacceptable condition under which you will not collaborate with a RI? (ex: Legal, ownership of the results, timings offered)</p>
<p>The company faces problems from a bureaucratic point of view, also due to its internal long procedures, therefore small contracts are not so attractive as their internal control is the same whether the contract is large or small. Sometimes they had problems on matching the timings offered by the research infrastructures and the business needs, but few times, and they consider that this aspect has improved in the last years. Regarding the IPM (intellectual Property management) they have very conservative rules in favour of the company. Another weakness pointed out is that not all national institutions are equipped with effective administrative office (for paying invoices, tickets, management of the administrative part, etc.), even if lately this weakness has been improved.</p>
<p><b>Q6:</b> Which research infrastructures do you know, do you hear/know about CERIC?</p>
<p>The company knows and collaborated with European synchrotrons such as ESRF and Elettra, they know about SOLARIS in Poland, but they never collaborated with them.</p>

<b>Company 5</b>
<b>Q1: How often do you collaborate with Research Infrastructures? (how many collaborations in the last 5 years)</b>
The company has long term collaborations with non-European research infrastructures, and around 1 collaboration every three years with local infrastructures such as synchrotrons.
<b>Q2: How do you select a new collaborator? (Which is the process, how you get in contact usually, etc) Which are the current requirements to select a collaborator/provider of a scientific service?</b>
Depends: if the collaboration is with a Research infrastructure, usually the company is supported by universities and other academic entities on the selection. They have good and long-term relationship with universities that acts as intermediaries to select research infrastructures and other research partners. The company just established an open innovation office that will also support on the scouting of research partners.
<b>Q3: Which is the current way you get access to RIs? Ex: Do you contact directly the corresponding office with a direct request, do you have to fulfil online forms? Do you have to go through open calls or via H2020 projects consortiums? Would you prefer a different way? More formal, more informal? Would you change some steps of the way you to get access?</b>
The company participates in funded projects (calls) for particularly expensive characterizations, otherwise they usually go through their direct contacts that they already have with other institutes and research centres. They also have many non-European perspectives. Outside Europe they have research entities-industry-government periodic working tables, very well structured, where industry can present results obtained with technologies, research entities present research ideas, and the government sets the structure and kind of financing instruments. The fact that it is not very structured in Europe, make it a little harder to build big consortiums working on targeted projects.
<b>Q4: Which is the kind of projects? (ex: External support on specific tasks, contract research, co-development project, testing, consultancy not involving research, etc) Is the collaboration usually continuous set through framework agreements or case by case?</b>
With Research Infrastructures the company mainly requests testing services related to specific issues. In this case they relate to the infrastructure case by case, but they find interesting to establish framework agreements and the possibility to carry out each testing request faster and easier under a framework agreement.
<b>Q5: Which are the main constraints to collaborate or to collaborate more with RIs? Which are the main barriers you encounter to collaborate with RIs? Is there any unacceptable condition under which you will not collaborate with a RI? (ex: Legal, ownership of the results, timings offered)</b>
Main issues or constraints highlighted are: sometimes the high costs of access to the services and techniques of RIs; company's lack of knowledge on the applications of



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<p>the different techniques, for this reason the role of the university as intermediary is quite important. Regarding the IP barriers: often, if a new IP is developed, the negotiation on sharing it can be a long and complicated process: the company usually negotiate to have the whole IP and it can be expensive and complicated because the research entity usually wants to publish the results. Traditionally with Japanese partners the company can share the IP keeping the exclusivity for their sector, meanwhile in the United States and Europe the company tends to pay for a licensing or decide to buy it all, the shared IP in these regions are very rare.</p>
<p><b>Q6: Which research infrastructures do you know, do you hear/know about? Did you hear about CERIC?</b></p>
<p>ESRF, Elettra, BNL National Synchrotron light source, SLAC National Accelerator Laboratory, Japanese Synchrotron. They didn't know about CERIC access to different facilities and they find the option quite interesting. They also highlighted that they are quite open to participate to events where the industrial applications of different techniques are presented</p>

<p><b>Company 6</b></p>
<p><b>Q1: How often do you collaborate with Research Infrastructures? (how many collaborations in the last 5 years)</b></p>
<p>Four Collaborations in the last three years, working with ISIS and with The Institut Laue-Langevin (ILL)</p>
<p><b>Q2: How do you select a new collaborator? (Which is the process, how you get in contact usually, etc) Which are the current requirements to select a collaborator/provider of a scientific service?</b></p>
<p>The main interest has been in using small angle neutron scattering as a means of examining residual stress in large mechanical components. The idea was brought to the attention of the team via an academic advising on the project and who knew of the technique but was unconnected with any institute. The choice of research infrastructure was based on capability presented.</p>
<p><b>Q3: Which is the current way you get access to RIs? Ex: Do you contact directly the corresponding office with a direct request, do you have to fulfil online forms? Do you have to go through open calls or via H2020 projects consortiums? (let the person briefly describe how they usually get access to the RI). Would you prefer a different way? More formal, more informal? Would you change some steps of the way you to get access?</b></p>
<p>The connection method was originally via simple direct contact with the infrastructure who assigned a scientist to work with the proposer to design the experiment. This method of achieving the result they needed was straightforward and considered effective.</p>
<p><b>Q4: Which is the kind of projects? (ex: External support on specific tasks, contract research, co-development project, testing, consultancy not involving research, etc) Is the collaboration usually continuous set through framework agreements or case by case?</b></p>



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<p>The original project was a contract research task, but subsequent engagements have been on a co-development basis as there has been academic interest in the work. The arrangement would always be considered on a case-by-case basis balancing academic depth and interest in publishing, price, speed to completion and any need to consider protection for arising IP.</p>
<p><b>Q5:</b> Which are the main constraints to collaborate or to collaborate more with RIs? Which are the main barriers you encounter to collaborate with RIs? Is there any unacceptable condition under which you will not collaborate with a RI? (ex: Legal, ownership of the results, timings offered)</p>
<p>There are no known constraints, and the company also sees a halo benefit in being associated with Research Infrastructures as adding additional credibility to their R&amp;D activities. It is of course possible that conflicting interests could occur, but they have not done so yet. Price can be an issue, so if expensive, then other methods will be considered first, with use of an RI being more of a necessity (noting that different facilities and different techniques are differently expensive as well as having differing blended funding possibilities).</p>
<p><b>Q6:</b> Which research infrastructures do you know, do you hear/know about CERIC?</p>
<p>The company is aware of and has worked with ILL and ISIS. There is awareness of CERN and also ESS as potential future partners to engage with. They didn't know about CERIC options</p>

<p><b>Company 7</b></p>
<p><b>Q1:</b> How often do you collaborate with Research Infrastructures? (how many collaborations in the last 5 years)</p>
<p>Quite consistently, around twice per year.</p>
<p><b>Q2:</b> How do you select a new collaborator? (Which is the process, how you get in contact usually, etc) Which are the current requirements to select a collaborator/provider of a scientific service?</p>
<p>According to their network of contacts, they value the technical capabilities, the equipment and the scientific reputation.</p>
<p><b>Q5:</b> Which are the main constraints to collaborate or to collaborate more with RIs? Which are the main barriers you encounter to collaborate with RIs? Is there any unacceptable condition under which you will not collaborate with a RI? (ex: Legal, ownership of the results, timings offered)</p>
<p>The company usually get access through some financed projects. And through universities groups that they are in contact with. If possible, they prefer to have framework agreements.</p>
<p><b>Q4:</b> Which is the kind of projects? (ex: External support on specific tasks, contract research, co-development project, testing, consultancy not involving research, etc) Is the collaboration usually continuous set through framework agreements or case by case?</p>
<p>External support on specific tasks, and co-development projects and testing.</p>



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<p><b>Q5:</b> Which are the main constraints to collaborate or to collaborate more with RIs? Which are the main barriers you encounter to collaborate with RIs? Is there any unacceptable condition under which you will not collaborate with a RI? (ex: Legal, ownership of the results, timings offered)</p>
<p>One of the main constraints is related to the ownership of the results, the company always intends to keep the results and has to impose restrictions on the possibility of publishing, setting different embargo periods depending on the project. The timings of delivering the results by the RI must be respected, moreover the company wants to provide only strictly necessary technical details on the products/materials for confidentiality reasons, (unless the relation is set as a co-development).</p>
<p><b>Q6:</b> Which research infrastructures do you know, do you hear/know about CERIC?</p>
<p>ESRF, ILL, Elettra, CERN, the company wasn't aware about CERIC access to different RIs, and they didn't know either the commercial access of Elettra, just the open access through calls. The company finds very interesting CERIC commercial access to several facilities and express the intention to explore possible collaborations.</p>

<p><b>Company 8</b></p>
<p><b>Q1:</b> How often do you collaborate with Research Infrastructures? (how many collaborations in the last 5 years)</p>
<p>They have continuous collaborations with at least three research centres</p>
<p><b>Q2:</b> How do you select a new collaborator? (Which is the process, how you get in contact usually, etc) Which are the current requirements to select a collaborator/provider of a scientific service?</p>
<p>They consider the internal needs and projects, and which instruments needs they have. Regarding the access, they have long lasting collaborations and usually check with these collaborators and use their network. They don't have specific requirements to select a partner, the usually check the complementarity with their capabilities and knowledge.</p>
<p><b>Q3:</b> Which is the current way you get access to RIs? Ex: Do you contact directly the corresponding office with a direct request, do you have to fulfil online forms? Do you have to go through open calls or via H2020 projects consortiums? Would you prefer a different way? More formal, more informal? Would you change some steps of the way you to get access?</p>
<p>They have ongoing framework agreements and when a new need is detected they simply make requests to the corresponding office of the research entity. They are satisfied with this way of access.</p>
<p><b>Q4:</b> Which is the kind of projects? (ex: External support on specific tasks, contract research, co-development project, testing, consultancy not involving research, etc) Is the collaboration usually continuous set through framework agreements or case by case?</p>
<p>External support on specific tasks, co-development project and testing, but they don't externalize completely a project to a third party.</p>



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<p><b>Q5:</b> Which are the main constraints to collaborate or to collaborate more with RIs? Which are the main barriers you encounter to collaborate with RIs? Is there any unacceptable condition under which you will not collaborate with a RI? (ex: Legal, ownership of the results, timings offered)</p>
<p>The company wants to have the ownership of the results, so they buy patents developed in collaboration, so this is a mandatory condition. Company budget for R&amp;D activities is defined in autumn and then unexpected budget deviations cause frictions, it's important that the budget but also the timings established with a research partners is respected.</p>
<p><b>Q6:</b> Which research infrastructures do you know, do you hear/know about CERIC?</p>
<p>They collaborate and know different national and European research entities but they weren't aware about CERIC and the opportunities offered.</p>

<p><b>Company 9</b></p>
<p><b>Q1:</b> How often do you collaborate with Research Infrastructures? (how many collaborations in the last 5 years)</p>
<p>The company has had one major project working with a neutron source Research infrastructure using the neutron beam to explore doping in lattice structures. This was a significant success, and a follow-up project is about to start.</p>
<p><b>Q2:</b> How do you select a new collaborator? (Which is the process, how you get in contact usually, etc.) Which are the current requirements to select a collaborator/provider of a scientific service?</p>
<p>The potential offered by use of RIs is relatively new to the company, so it is hard to define a process for this yet, however the need for the capability is now well understood, and the starting point is to learn more about the range of capabilities that can be accessed. The basics of this situation were the discovery of a new capability and the assessment that the outcome could be achieved at a practically affordable price-point. The company is very interested to learn more about the range of facilities available across Europe.</p>
<p><b>Q3:</b> Which is the current way you get access to RIs? Ex: Do you contact directly the corresponding office with a direct request, do you have to fulfil online forms? Do you have to go through open calls or via H2020 projects consortiums? (let the person briefly describe how they usually get access to the RI). Would you prefer a different way? More formal, more informal? Would you change some steps of the way you to get access?</p>
<p>Company's first experience of working with the RI followed an introduction by an intermediary who recognised the technical challenge and was able to see how the RI could help. There followed a direct contact between the company and the RI office, and a connection made between the technical parties on each side. No grant funding was required in this instance. It was notable that the opportunity to informally explore the nature of the project and the technical options with the right people was important in getting confidence that the project was worth funding.</p>



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<p><b>Q4:</b> Which is the kind of projects? (ex: External support on specific tasks, contract research, co-development project, testing, consultancy not involving research, etc) Is the collaboration usually continuous set through framework agreements or case by case.</p>
<p>The first project was fairly straightforward contract research: knowledge needed by the company about the internal materials structure of a product they were making, hence not complicated to specify or price. This having led to a successful outcome; the next project is a more exploratory one and is assembling as a co-development.</p>
<p><b>Q5:</b> Which are the main constraints to collaborate or to collaborate more with RIs? Which are the main barriers you encounter to collaborate with RIs? Is there any unacceptable condition under which you will not collaborate with a RI? (ex: Legal, ownership of the results, timings offered)</p>
<p>There are no known (or foreseen) barriers to further collaboration, excepting the awareness of what is on offer. Having had positive success with their first projects, the company is keen to consider more activities working in this way. There were no problems with access to beam time, and the project was completed in the expected timescale. The first project was conducted on a fee basis, the collaborative project now being developed is probably also going to be on a paid basis, but the company is open minded about styles of collaboration. The ultimate decisions about legal ownership of the results are more likely to be driven by considerations of timing with regard to publishing and how that might affect the options to protect any arising IP.</p>
<p><b>Q6:</b> Which research infrastructures do you know, do you hear/know about CERIC?</p>
<p>The company is aware of and has worked with just one infrastructure. [Though out of scope for this review, it may be interesting to note that the company has now also been looking to work with supercomputer resources such as the Hartree Centre]. The company is very interested to learn more about the range of capabilities and offers that exist across Europe.</p>