



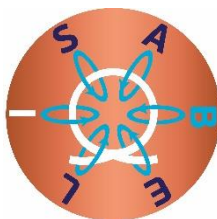
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## ISABEL

### Improving the sustainability of the European Magnetic Field Laboratory

#### On-Line Seminar Cycle

Raising staff awareness on economic and societal issues (IPR, Entrepreneurship, Transfer of knowledge and licensing)



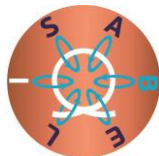
**Start date of the project:** 1<sup>st</sup> November 2020

**Duration:** 48 months

**Project Coordinator:** Geert Rikken – CNRS LNCMI (P1 - CNRS)

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1.1	Corrections and review	04.01.2022	Florence Lecouturier-Dupouy, Coordination Board ISABEL, Aimée Savourey
2.0	Final version	04.15.2022	Ferial Hamdi, Sophie Gojon, F. Lecouturier-Dupouy, Aimée Savourey



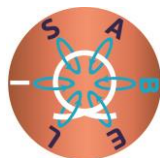
## DOCUMENT ABSTRACT

The aim of the task, which is part of the work-package 3 “Bridging the EMFL”/ industry gap” was to stimulate ideas and actions about how to move EMFL innovation towards industry/SMEs. In order to do so, a seminar cycle was organized at the beginning of the project where we invited academic and industry/SMEs speakers to discuss successful innovations and to garner potentially fruitful new partnerships. We also invited scientists/engineers who became entrepreneurs to tell their stories and to stimulate the entrepreneurship spirit within the cohort of staff, PhD students and post-docs across the ISABEL partner.

This document summarizes the organization and program of these seminars, their feedback and the perspectives of the initiated action.

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## 1. Organization

In task 3.1, Intellectual Property Rights courses performed by experts were organized. In order to illustrate these courses, we decided to pair them with the cycle of on-line seminars presented here.

Thus, a first cycle of seminars revolving around technology transfer was organized. Three themes were chosen:

- Intellectual property rights: performed on May the 6<sup>th</sup>, 2021
- Technology transfer and licensing: performed on June the 3<sup>rd</sup>, 2021
- Entrepreneurship – Start-up creation: performed on June the 24<sup>th</sup>, 2021

Each session lasted one hour and a half and was divided as follows:

- 30min course performed by an expert of the topic (patent engineers, business developers and start-up managers)
- 30 min experience testimony to illustrate a real case on the subject by academic or industrial speakers
- 30 min of questions and answers.

The flyer detailing the program of the cycle of seminars and the speakers is presented in Appendix A.

The program of the courses part was detailed in the deliverable D3.1. We will focus here on the testimony seminars of the academic and industrial speakers.

## 2. Seminar program

It was difficult to find speakers on the topic of innovation related to high magnetic field, thus we broadened the scope to subjects in physics because the aim of the seminars was to explain the path from an invention in the laboratory towards an innovative product on the market.

We also tried to diversify the speakers and the way they performed this transition (patents, collaborations, and Start-Up creation).

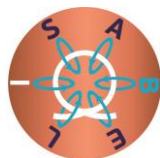
### a) Intellectual property rights

The first seminar was dedicated to the basics of intellectual property and the stakes of its protection. After a course performed by two patent engineers of CNRS Innovation, **Pere Roca I Cabarrocas** was invited to testify on his experience on patents.

M Roca, a CNRS research director at the LPICM and CNRS silver medal and Blondel medal winner, having a lot of experience in patenting (**more than 24 filed patents**), shared how it worked for him and what it brought to his research to have so many industrial patents.

### b) Technology Transfer and Licensing

The second seminar was dedicated to the technology transfer process. After a course, performed by a licensing manager at CNRS Innovation, two speakers were invited to testify on their experience on the matter:



- Michael Gehring, head of sales on magnet technologies at Bilfinger Noell GmbH
- Ottmar Möhler, deputy head of the Atmospheric Aerosol Research department at the Institute of Meteorology and Climate Research of the Karlsruhe Institute of Technology

The subject of the testimony was a successful collaboration between the KIT and Bilfinger Noell resulting on the product PINE (Portable Ice Nucleation Experiment); an instrument automatically measuring INP concentrations (Ice nucleating particles); the source for primary ice formation in clouds.

The aim of this double testimony was to get the point of view of both the industrial and the academic partners on the same action.

**KIT and Bilfinger Noell a matching collaboration**



- KIT had a validated working prototype
- Noell industrialized the design (thermal, etc.)
- KIT has active interest in wide spread use of PINE to do research
- Noell is marketing and selling the device
- Partners actively looking for continuation and development of PINE

Bilfinger Noell GmbH EU ISABEL Seminar: Licensing and Tech Transfer (2nd June 2021) M. Gehring Slide 19

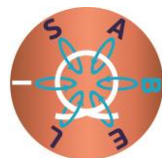
**Figure 1:** The results of a fruitful collaboration – slide presented by Michael Gehring (Bilfinger Noell) during the ISABEL online seminar

### The timeline of the PINE development

2016-01	First <b>proof-of-concept</b> experiments with partner from Leeds
2016-11	First prototype chamber tested at AIDA cloud simulation chamber
2017-01	Start first <b>PhD student</b> funded by University of Leeds
2017	Development of first fully operational prototype version
2018-02	Start <b>TT project PINE</b> (N059) funded by KIT IRM department
2018-04/05	First <b>field campaign</b> with prototype (as part of <b>Master thesis</b> )
2018-05	New <b>postdoctoral researcher</b> hired for 18 months
2018-07	<b>License agreement</b> KIT / Bilfinger Noell GmbH <b>Cooperation agreement</b> KIT / University of Leeds
2018-10	Second <b>field campaign</b> with prototype (Puy de Dome, France)
2019-01	Start second <b>PhD student</b> funded by KIT IMK-AAF
2019-05	<b>First-of-series</b> built and delivered to partner in U.S.
2019-10	First successful <b>field campaign</b> with commercial PINE instrument
2020-11	Two PINE instruments delivered to KIT, one to University of Leeds
2021-01	First PINE paper: Möhler et al., AMT, 2021



**Figure 2:** The timeline of the PINE development – slide presented by Ottmar Möhler (KIT) during the ISABEL online seminar



### c) Entrepreneurship – Start-up creation

The last seminar was centered on start-up creation: the second main valorization path.

After a course about the process of a start-up creation, performed by a start-up manager at CNRS Innovation, Tino Gottschall was invited to testify on his entrepreneurship experience.

M Gottschall, researcher at the HZDR Dresden, co-founded MagnoTherm during his previous post-doctoral position. This start-up develops highly efficient and sustainable cooling as well as heating solutions based on magnetic materials.

## 3. Attendance

The seminars were open to all the staff members of the founding laboratories of the EMFL facilities: LNCMI, HLD and HFML which represent around 200 people. Table 1 summarizes the attendance and affiliation of the attendees.

	Seminar 1: Intellectual property rights		Seminar 2: Tech transfer & licensing		Seminar 3 : Entrepreneurship and start-up creation	
	Number	Percentage of the attendance	Number	Percentage of the attendance	Number	Percentage of the attendance
Connections	76		44		41	
LNCMI-CNRS	51	67%	26	59%	21	51%
HLD-HZDR	10	13%	6	14%	11	27%
HFML-RU	10	13%	2	5%	4	10%
Unknown affiliation	0	0%	4	9%	2	5%
CNRS Innovation and external speaker	5	7%	6	14%	3	7%

**Table 1:** Attendance of the online IPR courses and seminars.

## 4. Dissemination

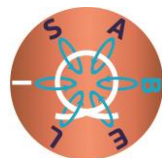
To inform the researchers of seminars, a flyer (Appendix A) was issued and sent several times to the diffusion list of the LNCMI, HMFL and HLD. An online announcement on LinkedIn was also issued.

After each session, the content of the courses was made available online for the EMFL and ISABEL members at the link below:

<https://nextcloud.grenoble.cnrs.fr/s/3PDR8ZjTqts9ds3?path=%2FTask%203.1%2FSeminars>

Only one speaker (Bilfinger Noell) agreed to share his presentation on the website.

All available documents from the courses are compiled on the ISABEL page “Documents” ([Documents - EMFL](#)) in the section “seminars”.



This input has been advertised on the EMFL LinkedIn page on the 18<sup>th</sup> of August 2021. It generated 1530 impressions, and 58 engagements.

**Figure 3:** LinkedIn post on the EMFL page

## 5. Feedback report

A satisfaction form (Appendix B) was sent after the seminars to all the participants in order to assess the appreciation by the audience and determine if a second session was needed.

The marks range from 1 to 5, from “very bad” to “very good”. The seminar cycle was globally well received. Table 2 summarizes the average given marks.

Form of the seminars	Length	Content	Clarity	Understanding of the tech transfer	Global mark
4,2	4	4,2	3,6	3,8	4

**Table 2:** Average feedback on the IPR courses.

According to the answers, the general opinion was that a second session of courses was not needed.

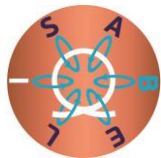
## 6. Perspectives and continuity

Regarding the answers to the satisfaction form, it appeared that the testimonies were appreciated by the audience. We decided to organize, new innovation-related on-line seminars as soon as the opportunity would arise.

As a consequence, a fourth seminar was recently held. It was presented by Uli Zeitler (HFML researcher) and Hugh Glass (technology owner for Paragraf<sup>1</sup>) GHS series of graphene Hall sensors. The subject was a successful use of the HFML platform for the characterization of a new industrial product.

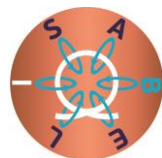
A fifth seminar is in preparation.

<sup>1</sup> <https://www.paragraf.com>



It seems interesting to continue the action by organizing regular seminars inviting industrial partners, entrepreneurs or researchers who experienced the valorization process or industrials who used the EMFL platforms. This action could be continued in connection with the Task 8.3 of the ISABEL project: “Communication with the EMFL users”.





European Magnetic Field Laboratory

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## 7. Appendix A: Flyer and program



# Intellectual Property Rights courses and online seminars

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**Thursday, May 6th Intellectual property**  
Zoom meeting



2 pm – 2:30 pm	<b>Introduction to Intellectual property rights</b> Julie Thirion & H��lo��se Doucet – Patent engineers (CNRS Innovation)
2:30 pm – 3 pm	<b>Experience testimony</b> Pere Roca i Cabarrocas – CNRS Research Director at the LPICM, CNRS silver medal
3 pm – 3:30 pm	<b>Questions &amp; answers</b>

**Thursday, June 3rd Technology transfer - Licensing**  
Zoom meeting



2 pm – 2:30 pm	<b>Tech transfer course</b> Dhafira Benzeggouta – Business developer (CNRS Innovation)
2:30 pm – 3 pm	<b>Experience testimony</b> Michael Gehring – Bilfinger Noell GmbH Ottmar M��hler – Karlsruhe Institute of Technology
3 pm – 3:30 pm	<b>Questions &amp; answers</b>

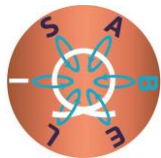
**Thursday, June 24th Entrepreneurship – Start-up**  
Zoom meeting



2 pm – 2:30 pm	<b>The basics of Start-up creation</b> Giovanni Altamura – Start-up manager (CNRS Innovation)
2:30 pm – 3 pm	<b>Experience testimony</b> Tino Gottschall – HZDR, co-founder of <u>MagnoTherm</u>
3 pm – 3:30 pm	<b>Questions &amp; answers</b>







## 8. Appendix B: Feedback form template

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### **ISABEL: Intellectual Property Rights Seminars Feedback**

The aim of this survey is to evaluate the quality of the seminar cycle and the need for other sessions.

Your answers will remain strictly confidential. Please send them to: [feriel.hamdi@cnsrinnovation.fr](mailto:feriel.hamdi@cnsrinnovation.fr)

We thank you for your precious participation.

The marks range **from 1 to 5**:

<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Very bad	Bad	Neutral	Good	Very good

**1. Which seminar did you attend?**

- |                                      |                              |                             |
|--------------------------------------|------------------------------|-----------------------------|
| - Intellectual property rights:      | <input type="checkbox"/> yes | <input type="checkbox"/> no |
| - Technology transfer and licensing: | <input type="checkbox"/> yes | <input type="checkbox"/> no |
| - Start-up and entrepreneurship:     | <input type="checkbox"/> yes | <input type="checkbox"/> no |

**2. What do you think of the form of the seminars (theory then practical testimony)?**

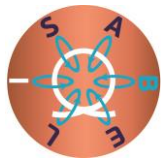
<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
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**3. What do you think of the length of the seminars?**

<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
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**4. How do you judge the content of the program?**

<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
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**5. How do you judge the clarity of the explanations given during the seminars?**

☐ 1      ☐ 2      ☐ 3      ☐ 4      ☐ 5

**6. Did the cycle of seminars help you understand the process of technology transfer?**

☐ 1      ☐ 2      ☐ 3      ☐ 4      ☐ 5

**7. In general, what is your opinion on this cycle of seminars?**

☐ 1      ☐ 2      ☐ 3      ☐ 4      ☐ 5

**8. Would you like a second session?**

**- Intellectual property rights**

Course: ☐ yes      ☐ no

Testimony: ☐ yes      ☐ no

**- Technology transfer and licensing**

Course: ☐ yes      ☐ no

Testimony: ☐ yes      ☐ no

**- Start-up and entrepreneurship**

Course: ☐ yes      ☐ no

Testimony: ☐ yes      ☐ no

**9. Do you have any additional remarks, suggestions or aspects that you need more explanation on?**

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