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D3.4: Report on the sectorial communication activities

WP3 – CoE-Industry Interaction



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List of abbreviations

AI	Artificial Intelligence
B2B	Business to Business
CoE	Centres of Excellence (CoEs) for High Performance Computing (HPC) applications
CSA	Coordination and Support Action
D	Deliverable
EC	European Commission
EU	European Union
H2020	Horizon 2020 – The EC Research and Innovation Programme in Europe
HPC	High Performance Computing
KPI	Key-Performance Indicator
NCC	National Competence Centres
PCC	Project Coordination Committee
R&D	Research and Development
SME	Small and medium-sized enterprise
Tech. Session	Technical Session
WP	Work Package

Executive Summary

This is the fourth deliverable of WP3 and reports on FocusCoE's sectorial communication activities that targeted the promotion of the CoEs with a key aim of enhancing their interactions with industry. During the FocusCoE project, the WP3 Task 3.2 team has been in charge of supervising the FocusCoE support to the CoEs with regards to these activities.

The first contribution of Task 3.2 was to organise the BIOFIT2019 event, a Life sciences trade fair held in Marseille, France, in December 2019, with the participation of three CoEs: CompBioMed, POP and BioExcel. For this and all other events organized by WP3 during the project duration, a prior assessment of the relevance and interest for the participating CoEs was carried out. The details of the corresponding processes are available in the deliverable D3.2¹. After each event the WP3 internal spreadsheet (referred to in the deliverable D3.2 as “dashboard”) was populated with the information collected regarding the number of contacts provided to the CoEs and the type of interactions undertaken during the events. Three further events were initially planned for 2020 to finalise the first round of sectorial events. For each event, WP3 took responsibility for the application and registration of the CoEs, booked their booth and managed the communication material with FocusCoE WP5 (Promoting EU HPC CoEs). The first round of events was originally planned to be finished in July 2020, however due to the COVID-19 pandemic, the three remaining events were either postponed or modified in nature (from physical to virtual/online). The schedule of WP3 was adjusted accordingly.

The strategy and schedule of the second round of industrial sectorial events were due to be finalized in June 2020 but they were again subject to revisions due to the impact of the COVID-19 pandemic. Therefore, sectorial events and thematic webinars shifted and actually took place up until March 2022. Thus, as a counter-measure to the COVID-19 pandemic outbreak in 2020 and its further consequences in 2021, WP3 investigated and then opted for alternatives to the initially planned sectorial events until such could take place as usual on location or in a hybrid format. As a first step, online events such as CAE2020 with EXCELLERAT and MaX during November-December 2020 and EMMC2021 with E-CAM, POP and T-REX in March 2021 were tested. In addition, thematic webinars were organised on specific topics. The first one took place in February 2021 on “Opportunities and Challenges for Industrial Applications” with EoCoE and POP. The second was organized during the HiPEAC2021 Spring sessions on “Industrial Challenges of CoEs in Medical/Pharma sectors” with BioExcel, CompBioMed and PerMedCoE, and industrial speakers from Atos, Nostrum and ElemBio who presented their specific industrial challenges. Following these events, guidelines, documents and reports on the lessons learned and best practices were produced by WP3 in May 2021 and shared with the CoEs to provide guidance for future events and in their interactions with industry. A list of target sectorial events for the second-half of 2021 had been selected in collaboration with the CoEs (the details of the selection process are described in the D3.1² and D3.2). Unfortunately, as with the majority of business events in general, when not postponed completely, these took place as online events due to the continued uncertain health situation world-wide. WP3 coordinated the presence of

¹ FocusCoE Deliverable D3.2, “*Interim report on the WP3 activities*”, Project Month 18 (May 2020), which was revised and re-submitted following the Project Month 18 review

² FocusCoE Deliverable D3.1, “*Report on the sectorial approach priorities*”, Project Month 6 (May 2019), which was revised and re-submitted following the Project Month 18 review

CoEs at a digital networking session of EUSEW with HiDALGO, EoCoE and MaX in October 2021; EXCELLERAT and POP had a virtual booth managed by WP3 at NAFEMS2021 in October 2021; CompBioMed and PerMedCoE took part in an experts panel discussion at Medica2021 in November 2021, arranged by WP3; as a result of WP3's close interaction with the organisers, information about EXCELLERAT, EoCoE and CoEC was promoted through the ENLIT2021 database and the CoEs were presented during a talk by ENEA at this week-long event in December 2021; finally ChEESE, MaX and RAISE had opportunities to present their service offerings during the AI4EU webinar in March 2022.

In summary, FocusCoE WP3 coordinated the CoEs' participation in nine events: BIOFIT2019, CAE2020, EMMC2021, SIMAI2021, MEDICA2021, NAFEMS2021, two thematic webinars in 2021 and an AI4EU web café in 2022. Additionally, FocusCoE WP3 provided information and alternative opportunities to the CoEs to present themselves through prioritised interactions with the organizers of EGU2021 and Enlit2021 events. For all events, the dedicated support provided by the FocusCoE and the coordination performed by the FocusCoE WP3 partners were highly appreciated by the CoEs and by the events' organisers, opportunities to participate again to the events or to organize future common workshops were also offered to the CoEs and FocusCoE.

In addition to events coordination, FocusCoE WP3 produced two guidelines' booklets regarding lessons learned and advice for either attending sectorial events or organising them, both on site and online. These booklets summarised all the feedbacks received and provide guidance to the CoEs for their future interaction with potential industrial prospects at the events.

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1 Introduction

The main goal of the sectorial communication activities in WP3 was to support the CoEs in initiating their interactions and collaborations with industrial partners. This was realised by the presentation of their potential services and products related to specific industrial sectors, in order to initiate contact with the relevant industrial stakeholders.

The present document describes the strategies set up for these activities and outlines the approach and actions that were put in place in order to achieve the anticipated results. This document is organised as follows: first a short reminder about the methodological approach used in Task 3.2 is given. Section 2.1 presents the initial strategic planning of the sectorial communication activities carried out as a first round and the updated status. Section 2.2 describes the initial strategic planning of the sectorial communication activities for the second round and the updated status. The counter-measures plan and additional actions undertaken as a consequence of the COVID-19 crisis are presented in Section 2.3. The main achievements and conclusions derived from these sectorial communication activities are summarized in Section 2.4.

2 Methodological approach used in Task 3.2 regarding the sectorial communication activities

We start this section with a short recap of some material from the previous deliverables: D3.1 (Report on the sectorial approach priorities) and D3.2 (Interim report on the WP3 activities) for the sake of convenience for the reader.

Task 3.2 is dedicated to both the outreach and promotion of the CoEs' competencies and service offerings to potential industrial users, as well as to help CoEs to connect with industry. FocusCoE provides support to the CoEs when attending trade fairs and Business to Business (B2B) events. The WP3 partners are in charge of liaising with the event organisers to assist CoEs to present their offerings (via a pitch, mini-symposium, or B2B meetings, depending on the event). The WP3 partners also take care of all logistics related to the booth and the booth decoration, for physical and online events. For the event itself, the CoEs just bring (or provide if the event is online) one or two posters, some other communication material if they wish, and ideally one representative of the CoE for interacting directly with the industrial visitors or for giving talks (such as exhibit booth presentations).

Jointly with the CoEs, an initial list of trade fairs from different industrial sectors and in different countries was created. Overall, WP3 initially planned to organise the presence of CoEs at around eight events. The events were assessed according to the following five main criteria:

- A. Match with CoEs' activities
- B. Relevance of the attendees
- C. Effective means to communicate the message
- D. Appropriate timing of the event
- E. Cost of the event

These criteria were described in more detail in the deliverable D3.1. The events were selected in two rounds: the first round targeting events taking place between December 2019 and September 2020; and the second round targeting events in the time frame October 2020 - November 2021.

In Section 2.1 we report on the updates concerning the first round of sectorial events for which the selection process is documented in D3.2. Afterwards, we briefly present the outcomes of the selected events and the final status of this activity. Section 2.2 details the results of the second round of sectorial events. Section 2.3 presents the additional actions set up to continue supporting the CoEs in the promotion of their service offerings despite the consequences of the COVID-19 outbreak (with events cancelled, postponed, or held only online). Finally, Section 2.4 highlights the main achievements and lessons learned from these sectorial communication activities.

The selection criteria are detailed in D3.1. In particular, it was our concern to cover geographically large parts of Europe (when physical events were planned) and to thematically cover all CoEs.

2.1 Sectorial events during the first round

2.1.1 Initial selection of sectorial events for the first round

The details about the preparatory work performed to establish the selection strategy for the events and the prior planning are provided in the deliverable D3.1; the lists of events (initially to be attended in the period December 2019 to December 2020) and the corresponding plans are described in D3.2. The initially selected events for the first round, planned in 2019-2020 were documented in the deliverable D3.2.

Table 2 below provides the updated list of events as several new CoEs started during the FocusCoE project duration and there were changes in the initial plans to fit the CoEs' needs and to overcome

postponements or cancellations due to COVID-19. Overall, ten CoEs participated in the events planned for the first round, which due to COVID-19, actually took place between December 2020 and March 2022. The selected events covered Spain, France, Italy and Belgium and four different sectors (see Section 2.1.2 for more details).

Event	Biofit2019	Expoquimia (June 2020 – delayed to September 2021 before being replaced by AI4EU web café)	SIMAI Congress (September 2021)	Sustainable Energy Week (October 2021)
BioExcel	Brochures sent & distributed	Participation was planned		
Cheese			Tech. session	
CompBioMed	Present			
ECAM		Participation was planned	Tech. session	
EoCoE			Tech. session & Industrial session	Present
MAX				Present
POP	Present			
EsiWACE				
EXCELLERAT				
HiDALGO				Present

Table 1: Sectorial events with updated information (selected for the first round)

2.1.2 Details of the sectorial events for the first round and updated status

- **BIOFIT2019:** This event was held in Marseille, France in 2019 with on-site participation from CompBioMed and POP (in addition brochures were sent by BioExcel), coordinated by Teratec. It was a trade fair in Life Sciences. More than 20



Figure 1: HPC CoEs booth at BIOFIT2019 with POP & CompBioMed



discussions with different companies were launched during this fair (contact example in Figure 1), and eight meetings were planned for CompBioMed or POP through the one-to-one meetings platform. Three months after the fair, CompBioMed had signed a new cooperation agreement with a new customer met at BIOFIT. Other discussions with potential leads to future business plans solutions were launched. The experiences from this event were summarised in WP3-internal documents that were used as input for the best practices and lessons learned booklets created for the CoEs and made available to them in May 2021.

- **EXPOQUIMIA:** The event in Barcelona, Spain was coordinated for FocusCoE by Barcelona Supercomputing Centre (BSC). It was planned to be held in June 2020. Two CoEs eCAM and BioExcel had expressed their interest to participate by setting up a booth in the Technology Transfer area where EU projects were invited to exhibit. Since shared booths between projects were not possible, it was agreed to devote each day to a different project: eCAM, BioExcel and FocusCoE within three days. Due to the outbreak of COVID-19, this event was postponed twice, first to December 2020, and later to September 2021 when it took place. However, the CoEs participation coordinated by FocusCoE WP3 was eventually cancelled due to uncertainty around travel restrictions (such travel restrictions were still in place when a financial commitment to participation with a booth needed to have been made). Hence, participation in this event was cancelled and the activity and efforts shifted to an alternative event, AI4EU web café, which took place in March 2022 during the second round of events (see the corresponding section 2.2.2).



- **ITALIAN SOCIETY OF APPLIED AND INDUSTRIAL MATHEMATICS (SIMAI) CONGRESS:** This event in Parma, with the CoEs' participation coordinated by ENEA, was planned to take place in June 2020 but had first to be postponed to January 2021, and then again to September 2021. At first, up to six CoEs had expressed interest to contribute to a mini symposium during the scientific days: EXCELLERAT, EoCoE, ChEESE, POP, eCAM and MaX. However, due to the repeated change of dates, several CoEs had to cancel their application as the final dates were no longer compatible with their respective agendas. In the final revised programme,



ChEESE, eCAM and EoCoE participated with a total of 5 presentations in the technical and industrial sessions. The revised application for the mini-symposium was accepted in May 2021. This mini-symposium represented a new channel (see an example with the ChEESE talk in Figure 2) for these CoEs to communicate about their activities and to interact with the ecosystem for future collaboration, as demonstrated by the positive feedback from the audience and the organisational staff. Indeed, the questions and comments that were received during the talks were about the possible use of the CoEs' offerings (such as codes, software, models, ...) and the way to use these services. It was also reported to FocusCoE WP3 that the presentation of EoCoE results within the industrial session has been attractive for researchers and new SMEs.



Figure 2: ChEESE talk during the mini symposium at SIMAI2021

Finally, in view of the very positive experience, the organisers of the SIMAI conference offered a possibility to organize a second edition of the HPC mini-symposium during the next SIMAI congress (2023). The agenda of this event and more details about the number of participants are available in Annex 5.4

- **SUSTAINABLE ENERGY WEEK:** The EU Sustainable Energy Week (EUSEW) in Brussels, with the CoEs' participation coordinated by University College London (UCL), is the biggest event dedicated to renewable and efficient energy



use in Europe and is part of a month-long series of activities to build a secure energy future. It brings together public authorities, private companies, NGOs and consumers to promote initiatives to save energy and move towards renewables for clean, secure and efficient power. Its 15th edition was planned to take place from 22 to 26 June 2020. Due to the COVID-19 pandemic however, it took place as a digital event with fewer features, it was therefore decided that participation would be in the 2021 edition. EoCoE, HiDALGO and MaX coordinated by FocusCoE WP3 gave presentations at the Energy Talks sessions at the October 2021 edition. Originally, the CoEs, with coordination by FocusCoE WP3 applied for a full session, but due to the very high number of applications in Europe and despite the support from FocusCoE, EoCoE and project officers from the European Commission, the application was not successful, and only a Virtual Energy Talk slot was offered by the organisers (see how the HPC CoE session appeared in the interface in Figure 3). The CoEs accepted this opportunity as this event series is a high-profile event for the sector.

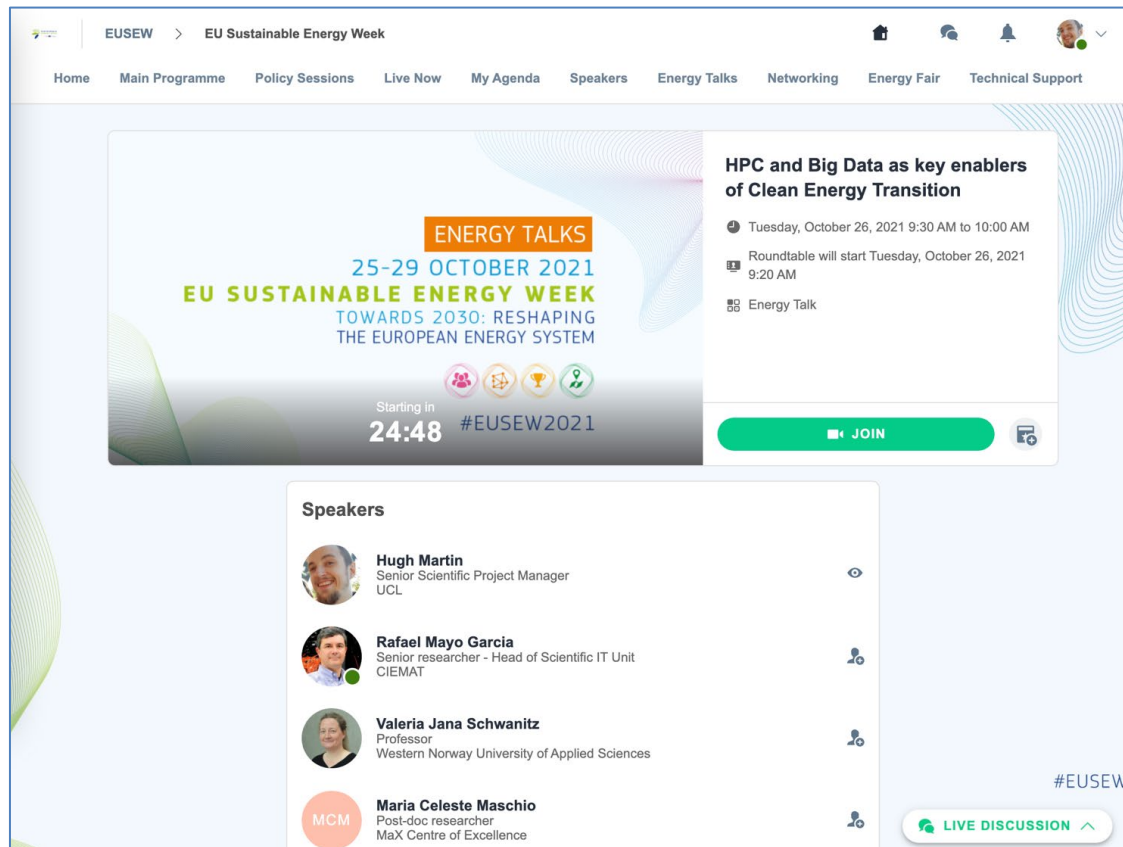


Figure 3: HPC CoE session welcome interface at EUSEW2021

The CoEs presentation about HPC use attracted 51 registered attendees. EUSEW 2021 brought together more than 4,500 green energy researchers, entrepreneurs, policymakers, campaigners, and enthusiasts. The event held 32 Policy Conference sessions, 40 Energy Talks and 40 Extended Programme sessions lead by over 275 inspiring clean energy experts. Over 3,500 one-on-one exchanges took place through the online networking feature. Despite the general difficulty in realising interactions with participants at digital events, this event was considered very worthwhile for the participating CoEs. The impression from the speakers and organisers was very positive: while it took significant collective effort to prepare for such a short session, the outcome of the given presentation was very good and the interaction from the audience was engaging and triggered plenty of discussion. The same feedback was received from Matteo Mascagni, the European Commission Project Officer of EoCoE, who supported the initial application and attended the talk. The foot in the door that this talk provided to the CoEs at this event series was seen as highly valuable, and they hope that it will lead to more substantial involvement at future iterations of the event. More visuals of this event of various interfaces are available in Annex 5.5.

As visible from the events described above, due to the COVID-19 pandemic which started to spread in Europe in March 2020 and still persists as of March 2022, several events were repeatedly postponed, or had their formats modified. Therefore, these were managed in parallel with the second round of sectorial events (see Section 2.2) along with the new actions undertaken (see Section 2.3).

2.2 Sectorial events for the second round

2.2.1 Sectorial events for the second round

The second round of sectorial industrial events was planned for September 2020 – November 2021.

For this second round, a reverse process relative to the first round, detailed in D3.2, of selecting events was implemented. As during the first round it was difficult to find events which were attractive for several CoEs, it was decided to proceed differently. The CoEs were asked to suggest a list of events of interest during a joint call between the CoEs representatives and the WP3 partners (March 2020). Then the WP3 partners consolidated this list and highlighted the common events of interest to finally agree upon, and create a final list. Details about the process and the timeline were documented in D3.2

For this second round, the impact of COVID-19 was still being monitored; and following their commencement in Q4 2020, the five new CoEs: CoEC, T-Rex, NOMAD-2, PerMedCoE and RAISE were added to the list of CoEs supported by FocusCoE. In order to foster the use of HPC within the EU13 countries, we targeted at least one trade-fair event to be held in a EU13 country. A process was set up to select relevant sectorial events and to discuss them with the CoEs (details about this topic are documented in D3.2). However, as explained in D3.2, the CoEs' general interest for events in EU13 countries was limited and due to the peculiar and difficult situation with the COVID-19 crisis and the urgent exascale porting activities, their priorities were directed towards their initial classical potential markets in Western Europe. Moreover, only international events were considered appropriate for CoE contributions and this also reduced the number of potentially relevant events.

The selected events for the second round, managed in 2020-2022 are listed in Table 2. Overall, for this second round, five different industrial sectors were covered, with participation of eleven CoEs coordinated by FocusCoE WP3. The selected events included both online and hybrid events (although due specific travel restrictions applying to their country or organisation, the CoEs were only able to participate online at the hybrid events since the events took place outside their country).

Event	EMMC 2021 (March 2021)	EGU2021 (April 2021)	NAFEMS WC (October 2021)	Medica 2021 (November 2021)	Enlit 2021 (December 2021)	AI4EU Webcafe (December March 20221)
BioExcel						
Cheese		Had their own session				
CompBioMed				Expert panel		
ECAM	Virtual booth					
EoCoE					Information about the CoE and the services promoted to the Enlit community through the Enlit database	
MAX						
POP	Virtual booth		Common booth & talks			
EsiWACE		Had their own session				
EXCELLERAT			Common booth & talks		Information about the CoE and the services promoted to the Enlit community through the Enlit database	
HiDALGO						Speaker
CoEC					Information about the CoE and the services promoted to the Enlit community through the Enlit database	Speaker
T-Rex	Virtual booth					
Raise						Speaker
NOMAD-2						
PerMedCoE				Expert panel		

Table 2: Sectorial events with updated information selected for the 2nd round

2.2.2 Details of the sectorial events for the second round

- The European Materials Modelling Council event EMMC2021: The FocusCoE partner, UCL coordinated the CoE participation at this event, which took place in 2 – 4 March 2021 as an online event with virtual booths and plenary sessions on Modelling development, Interoperability, Digitalisation, Software, Impact in Industry and Policy. POP, eCAM and T-Rex contributed with a virtual booth (cf. the example of the virtual booths landing page for eCAM in Figure 4).



E-CAM, European Centre of Excellence



Ana C. Mendonça
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Poster / Presentation

Links
<https://www.e-cam2020.eu/>

Open Contributions and Virtual Stands Session

02.03.2021, 16:30-17:30
03.03.2021, 16:30-17:30

Meet me via:
<https://ucl.zoom.us/j/95240464903>

E-CAM, European Centre of Excellence for software development, training and industrial discussion in simulation and modelling aims at (1) developing software to solve important simulation and modelling problems in industry and academia, with applications from drug development, to the design of new materials. (2) Tuning those codes to run on HPC, through application co-design and the provision of HPC oriented libraries and services; (3) Training scientists from industry and academia ; (4) Supporting industrial end users in their use of simulation and modelling, via workshops and direct discussions with experts in the CECAM community. E-CAM is funded by the EU H2020 R&I programme and is coordinated by CECAM at EPFL (CH). It is a partnership of 13 CECAM Nodes, 4 PRACE centres, and one Centre for Industrial Computing (Hartree Centre).

Figure 4: virtual booth landing page for e-CAM at EMMC2021

This virtual sectorial event was the first experience of the online format for the three participating CoEs, and it was one of the first digital sectorial events (of medium size) in 2021. The CoEs reported that the interaction with FocusCoE in terms of organising their participation was excellent. However, due to the event’s online infrastructure, each contributor was requested to host their stand using their own online-platform account, which meant that attending another stand while hosting their own was not possible. This feature strongly limited the number of interactions with potential stakeholders. However, POP reported two interesting interactions with visitors during this online event. Screenshots of all the CoEs’ virtual booths are available in Annex 5.5

- The European Geosciences Union General Assembly event (EGU2021): This event took place online from 19th to 30th April 2021. This is the main event with potential users for the CoEs in the earth, planetary & space science sectors. The FocusCoE-WP3 team collected information ahead of the event and shared it with ChEESE and EsiWACE to offer them the opportunity to collaborate in the industry parts of the event. The event has a very specific focus on Earth, Planetary and Space Sciences and the two CoEs (and/or their constituent partners) had established forms of contributions to the conference series in the past. Thus, it was finally decided to proceed with independent contributions from ChEESE and EsiWACE.



- The NAFEMS World Congress took place from 25th -29th October 2021 as an online event and CoE participation in this event was coordinated by FocusCoE partner HLRS. With the support of WP3, EXCELLERAT and POP booked a common booth in the exhibitors' area. This event is one of the major events for the engineering community and it covered every aspect of engineering modelling, analysis and simulation e.g., FEA, CFD, and MBD, and also included sessions addressing the next steps for the community and for modelling and simulation technology. The event was originally planned as a hybrid event, but was shifted online due to the COVID-19 situation. Of the approximately 950 participants at NAFEMS WC21, approximately 600 delegates came from industrial/commercial organisations.. More than 100 delegates and participants visited the CoEs' booth (see the visual aspect of the booth in Figure 5) but only nine shared their virtual business card or contact details with the exhibitors. A contact registration form, created by EXCELLERAT with FocusCoE support, was used by all CoE representatives on the CoE's booths to gather information about visitors for the CoEs future plans and activities. However,



Figure 5: HPC-CoEs EXCELLERAT & POP

only four people answered it which limited the impact and showed the difficulty in actively engaging with visitors on virtual booths despite the fact that the possibility for visitors to start video or chat discussions was promoted widely during the event. However, the answers to the questions asked (interests of the visitors for EXCELLERAT services portals, to subscribe for industry success stories flyers or the newsletters.) were still useful for EXCELLERAT to see what their potential prospects could look for and to develop relevant marketing tools. EXCELLERAT also took advantage of the received business cards and shared contact details to contact the potential new prospects and to offer the opportunity to register for the EXCELLERAT services portal and to their newsletter. Supported by the FocusCoE project, both CoEs used this opportunity to collaborate and promote each other after presenting their own activities and interacting with visitors during the four days of the conference. This event allowed both CoEs to increase their visibility to a wider audience and to attract more interested parties to their social media and websites. Through participation in the talk sessions, EXCELLERAT also aimed to bridge the development of new hardware and a collection of applications from a broad scientific domain. POP also shared similar interests with the HPC Working Group at NAFEMS to provide publications, seminars, and workshops on HPC topics as well as to share knowledge on the next-generation of HPC applications. Additionally, both NAFEMS HPC Working Group and POP were interested in promoting a constructive and long-standing dialogue between HPC CoEs, hardware and software vendors, SME users and academics. More information about the talks programme and speakers is available in Annex 5.6

- Medica 2021 took place 15-18th November in Düsseldorf, Germany as a hybrid trade fair with CoE participation coordinated by HLRS. Medica is one of the largest medical trade fairs in Europe, and attracted exhibitors from more than 50 countries and presented the entire range of medical technology and electro medicine as well as surgical equipment, medical furniture and special furnishings for hospitals and practices. There were also displays of IT systems and IT solutions for medical field. Using the information obtained by WP3, thanks to the interaction with the organizers about the various opportunities to participate to the event, CompBioMed and PerMedCoE decided to be part of an Expert panel in the “Biomedical Platforms” on November 17th, with four other panellists. The details about the expert panel are available in Annex 5.7 and a screenshot of the short introduction talk by the CoEs’ representative Mariano Vazquez is available in Figure 6. The CoEs had chosen to participate through the Expert panel as this was the more effective vehicle for this event to interact with their communities and to promote their services offerings to potential clients or users. As there were still some travel restrictions for some countries, the CoEs took part remotely in the panel discussion with one common representative (Mariano Vazquez) from both CompBioMed and PerMedCoE CoEs.



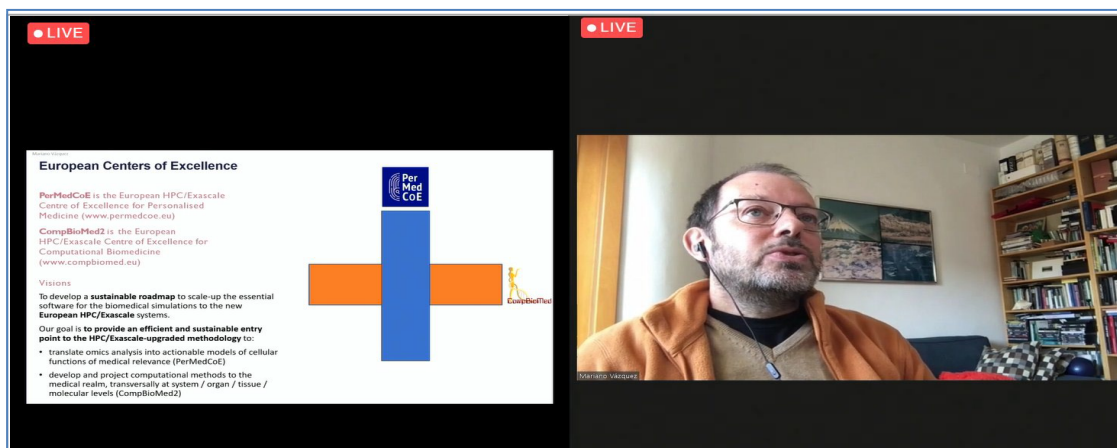


Figure 6: Mariano Vazquez’s short introduction presentation during the Expert Panel Discussion at MEDICA21

This event was an opportunity for CompBioMed to ensure that the work conducted within the CoE was broadcast to a wider audience and to gain more interested parties on engaging with their social media and website in order to increase their visibility to potential industrial prospects or users. This goal was successfully achieved as shown by an increase in the social media figures. CompBioMed gained 3 new followers on LinkedIn on the day and 2 during the following days after the panel discussion; 10 new Twitter followers in November 2021; more than 1000 Twitter impressions and 14 engagements to related tweets; 77 visits to the website on the day and 2 days following the panel discussion. Also, thanks to this event and the support of FocusCoE WP3, PerMedCoE made use of the matchmaking platform provided by MEDICA to identify contacts that are potentially interested in joining industry webinars and participating in workshops targeting industry players with the ultimate goal of positioning the CoE among industrial stakeholders. The agenda and the panelists list are in Annex 5.7.

- Enlit 2021, took place in Milan, Italy, and also as a hybrid event - from November 30th to December, 2nd 2021 with the CoEs’ participation coordinated by ENEA. Enlit is a very large European event focusing



on energy transition, that achieves the participation of a great number of leading companies and stakeholders in the field. Initially this event was of interest for a number of the CoEs with activities linked to the field of energy. However, due to the postponements of the event (for COVID-19 reasons), reassessments of priorities in the new time-frame and exacerbated by the restriction from the organizer to have only one CoE per booth for a very high price, only EXCELLERAT maintained its interest in participation in the event. This meant that the plans for participation were dropped, since FocusCoE-WP3 coordinates events only if at least two CoEs are attending. As an alternative, it was decided to take advantage of the offer from the organiser to enter the information about three CoEs (EoCoE, EXCELLERAT and CoEC) into the Enlit database, in order to promote the CoEs information to the Enlit community. In addition, ENEA gave a talk during the event and took this opportunity to promote CoEs service offerings. The Enlit Europe community appeared to be an interesting channel to promote the CoEs’ activities to the energy ecosystem for future collaboration. Although participation in the 2021 edition was limited by a number of technical issues and by the COVID-19 pandemic, the event and the online community could be kept into consideration in the future. Positive feedback from the audience and the organisers was received during the

ENEA talk and during the direct interactions between ENEA and the organiser. It should also be noted that the organisers of the Enlit Europe 2021 event offered the possibility to organise a future webinar on specific energy aspects of the HPC ecosystem. Details about the information entered in the Enlit database are available in Annex 5.8

- AI web café: After discussions with the CoEs it was decided to organize a webinar in the Artificial Intelligence (AI) sector in March 2022. AI technologies are used by many CoEs in their activities and hence being able to get in touch with the AI community is seen as very good value. Therefore, it was decided to organize this event under the umbrella of the AI web café webinars series, which ensured the right connection to AI experts. Three CoEs expressed their interest to participate as speakers: CoEC, RAISE and HIDALGO. Two of these are CoEs from the final H2020 CoE call and hence it was a good opportunity to give some visibility to the newly awarded CoEs. The webinar was initially scheduled for 3 December 2021, was rescheduled to 17 March 2022 due to the change of action supporting AI Web cafés (initially under AI4EU <https://www.ai4europe.eu/news-and-events/events/webcafes>, changed to AI4Media <https://www.ai4media.eu/ai-cafes/>). The session brought together the CoEs in AI sectors to explain how HPC technologies can help AI. Several case studies were presented on how AI is leveraging HPC technologies to solve real-live problems (see the agenda, the visuals and a short summary of the webinar in annex 5.9). Opportunities and challenges in the AI sector were discussed in a panel focusing on how the CoEs can help to tackle them thanks to HPC technologies and which opportunities are emerging. It has been a good opportunity to get three CoEs together and discuss and come to a common understanding of their ongoing activities and possible interactions. Collaboration opportunities, including training activities or how to access technologies were presented by the CoEs. The session attracted 73 registrations and was attended by 41 participants. The session raised interest from several complementary initiatives and during the preparation of the session collaboration opportunities with Stairway and BonsAPPs initiative emerged and were discussed among participating CoEs. Initiatives were highlighted during the webinar. After the webinar possible synergy with EIC project Carouseldansing was also spotted. Since the activity took place on the 17th of March 2022, at the time this report was written it was too early to report the further or long-term impact of those interactions.

2.3 Counter-measures plan and additional actions undertaken following the COVID-19 crisis

Due to the repeated postponements of the physical events during 2020-2022, alternative additional actions had to be considered and organised by WP3 in addition to the initial two rounds of events in order to continue sectorial communication activities for the CoEs to compensate the practical impossibility to participate at physical sectorial events.

2.3.1 Online format for the sectorial events

The first tested alternative was participation in online events. Before the EMMC2021 event in March 2021 (initially planned as a physical event but which went online) described in Section 2.2, the first online event was added to the initial selected events in order to experiment with this new online format:

- CAE2020 with two participating CoEs - MaX and EXCELLERAT-coordinated by FocusCoE-WP3 (Nov. 30th to Dec. 4th 2020). The CoEs' participation at the event was coordinated by Teratec. The CoEs appreciated the interaction with FocusCoE in terms of organising their participation. However, as this event was one of the very first online events, the online infrastructure was very limited and encountered several issues. Therefore, the interactions with potential stakeholders were limited: from the 18 interactions with the visitors reported during this online event, only a few contacts were deemed relevant with potential interest for future interactions. Nevertheless, this event was an opportunity for the CoEs to adapt and create new relevant communication material for this new format of events (see the virtual booth information in Annex 5.2 and the virtual booth landing page in Figure 7). It did highlight the limited attractiveness of the online format for sectorial communication activities when the platform isn't optimised and the conference organiser isn't familiar with this type of event.

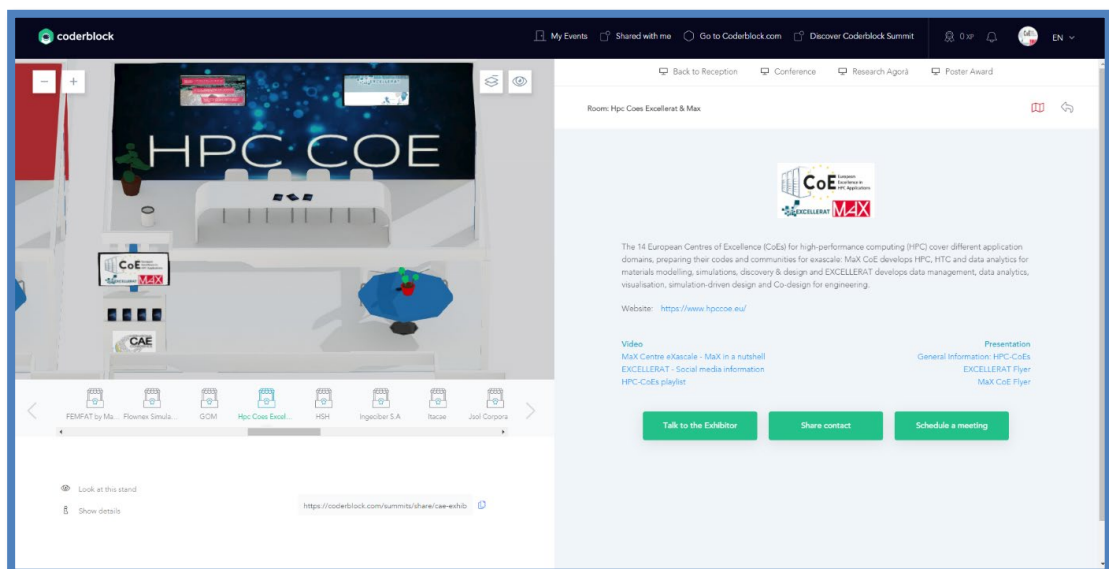


Figure 7: Screenshot of the HPC-COES: MaX & EXCELLERAT booth at CAE2020

2.3.2 Thematic webinars

Further to the online events, WP3 organized a series of webinars, in Winter 2021-Spring 2022, as a replacement for some planned sectorial events. This alternative solution was tested to see how this could foster contacts to new potential users and clients for the CoEs. To organize these thematic webinars, the challenge was to gather relevant audiences. This was done by widely disseminating the information about them through three channels: the FocusCoE website and social media, the relevant CoEs' websites and social media, and via the FocusCoE and the participating CoEs' newsletters. In addition to these classical channels, the WP3 partners also invited their own industry contacts from the relevant industry sectors.

The two thematic webinars were:

- In February 2021 on “*Opportunities and Challenges for Industrial Applications*” with speakers from EoCoE and POP who presented the services provided by their CoEs to the industrial audience (see Annex 5.3 with the agenda of this webinar). FocusCoE used all possible promotion channels including all previously collected industrial contacts. All WP3 partners were involved by sending the information to their own contacts, their own mailing lists, to several CoEs website and to the mailing lists of previous webinars. This webinar attracted 64 participants with around 50 sustained participants during the entire webinar. It allowed WP3 to put the two contributing CoEs in contact with at least 11 potential industry prospects each (see Annex 5.9 with the WP3 spreadsheet figures). Very positive reactions were received from the participants following this event.
- The second webinar was organised during the HiPEAC2021 Spring sessions and its topic was “*Industrial Challenges of CoEs in Medical/Pharma sectors*” with speakers from BioExcel, CompBioMed, PerMedCoE and also industrial speakers from Atos, Nostrum and ElemBio (see Annex 5.3 with the agenda of this webinar). This webinar - organized in conjunction with WP3 Task 3.4 - also provided the first opportunity to directly hear from industrial speakers about their specific industrial challenges. FocusCoE used all possible promotion channels including all previously collected industrial contacts. All WP3 partners were involved by disseminating information about the event to their own contacts, their own mailing lists, to several CoEs website and to the mailing lists of previous webinars, and it was widely promoted by WP5. This webinar gained the interest of 95 people who had pre-registered, and attracted a high number (ca.40-45) of sustained participants during the entire webinar. It allowed us to put the three contributing CoEs in contact with new and relevant industrial collaboration prospects with whom they could share the challenges they face and could discuss how CoEs can contribute to address them. Furthermore, the session was recorded and uploaded to YouTube (126 views as of March 24th 2022): <https://www.youtube.com/watch?v=CNa2j7HAXmU>. A feedback form was sent to all those in the audience and got a higher than the usual response rate of 25%. In general, there was a high level of appreciation of the quality of the event and interest in the presentations. For instance, the attendee rate was reasonably high when compared with usual no-shows' rates of free webinars – so it can be stated that the event was genuinely of interest to many conference attendees. Ecosystem-wise it was an outstanding opportunity to bring many communities across the whole sectorial vertical from lower system levels, HPC domain application developers to upper health sector stakeholders. More details with the agenda, the slides links and the feedback details can also be found in Annex 5.3.

As a first conclusion, these new types of “sectorial events”: the online events or the thematic webinars, were a little less efficient than the physical typical events to provide industrial prospects to the CoEs. It is indeed always more difficult to interact with the other speakers or participants in an online event

and the online format is always more formal and rigid than a face-to-face physical meeting. However, given the issues of the COVID-19 pandemic active during 2020-2022 and the continuously changing travel regulations (depending on each country), these solutions were the most relevant. The KPIs in section 5.9 show that even if travel and real meetings were not possible, these alternative options enabled FocusCoE to put the CoEs in contact with many potential industrial prospects and for each event, there were at least a couple of serious potential industrial prospects or collaborations.

To ensure that such webinars represent a good alternative to trade fairs and “real” sectorial events, several factors should be checked upfront:

- for the online trade fairs, conferences and exhibitions: the used platform must be well known and mastered by the organisers and it should display spaces of informal networking (virtual meeting rooms, virtual coffee breaks etc); the exhibitors should be able to leave their booth to interact with people at other booths while keeping their own booth open; there should be notification systems to notify the exhibitors when someone enters the booth; several chat and video channels are also useful to welcome several visitors at a booth. Further lessons learned and tips for the CoEs to have an optimal participation to an online event were summarised and presented in the guidelines booklets created by WP3 and presented in Section 2.3.3.
- for the thematic webinars: it is very useful to organise a webinar in a large event. For instance, using the practical system put in place by HiPEAC was very useful, and being part of a large event allows one to have a wider promotion impact and to reach a bigger audience. The topic of the webinar must be very clear and focused to attract the relevant industrial prospects. The presentations must be focused on the services proposed by the CoEs and not only on the research aspects to trigger questions about the services provided. Further lessons learned and tips for the CoEs to organize an optimal thematic webinar were summarised and presented in the two “guidelines for virtual and physical sectorial events” booklets created by WP3 and presented in Section 2.3.3.

2.3.3 Guidelines documents about sectorial events

Documents and reports on the guidelines for virtual and physical sectorial events were written by WP3 and shared with the CoEs in May 2021 to support them in organising their future events and in their interactions with industry.

Following the organisation and attendance at several sectorial events, virtual and physical, it became clear to the WP3 partners that several lessons learned and best practices gained during these events could be collected and shared with the CoEs. Therefore, WP3 created two booklets, one for sectorial physical events and one for online sectorial events (including thematic webinars) during Spring 2021. These booklets³ were shared with the CoEs in May 2021 and then published on the FocusCoE website with the support of WP5 in August 2021 (<https://www.hpccoe.eu/download/>). These booklets summarize the main key elements to be checked upfront to ensure for the CoEs a maximum benefit from participating to an event; they also provide tips to ensure efficient promotion of an event or to

³ Best practices booklet for sectorial events - physical events (7 pages) and Best practices booklet for sectorial events - online events (10 pages), <https://www.hpccoe.eu/download/>

gather a relevant audience. These best practices guides were shared with all CoEs directly via emails, then they were published on the HPCCOE website. Lastly, they were also shared with the NCCs through interaction via CASTIEL and some NCCs reported that this was also useful for them.

2.4 Main achievements and conclusions issued from these sectorial communication activities

2.4.1 Overview of all the achieved sectorial events

To summarize the previously described events, the executed sectorial events are listed in the Table 3 below. All CoEs participated in at least one of the sectorial events included in the final set selected by WP3 -in collaboration with the CoEs- (except NOMAD-2 since its time-line of development activities was not considered by NOMAD-2 to be consistent with participation in the industrial sectorial events during the final FocusCoE period, i.e., participation to such events would make sense for them later on -when FocusCoE has terminated).

Table 3: Overview of all the done and planned sectorial events or additional organized events for the CoEs. The * indicates a new/recent CoE)

Event	Biofit2019 (Dec. 2019)	CAE2020 (Dec. 2020)	Webinar 1 (Feb. 2021)	EMMC 2021 (March 2021)	Webinar 2 (April 2021)	EGU2021 (April 2021)	SIMAI Congress (Sept. 2021)	Sustainable Energy Week (Oct. 2021)	NAFEMS World Congress (Oct. 2021)	Medica 2021 (Nov. 2021)	AI4EU Web Café (March 2022)	Enlit 2021 (Dec. 2021)
BioExcel	Brochures sent & distributed				Speaker							
Cheese						Had their own session	Tech. session					
CompBioMed	Present				Speaker					Expert panel		
ECAM				Virtual booth			Tech. session					
EoCoE			Speaker				Tech. session & Industrial session	Present				Enlit database
MAX		Virtual booth						Present				
POP	Present		Speaker	Virtual booth					Common booth & talks			
EsiWACE						Had their own session						
EXCELLERAT		Virtual booth							Common booth & talks			Enlit database
HiDALGO								Present			Speaker	
CoEC*											Speaker	Enlit database
T-Rex*				Virtual booth								
NOMAD-2*												
PerMedCoE*					Speaker					Expert panel		
RAISE*											Speaker	

2.4.2 Monitoring of the success of the sectorial communication activities

In order to monitor the new interactions with industrial partners and the added value of the WP3 activities, including the sectorial communication activities, WP3 created a spreadsheet with information about the new industrial interactions launched by the CoEs with WP3 support (events, industry survey, direct approach). This dashboard was regularly updated during the project duration based on the feedback from CoEs participating at WP3 activities.

After all the sectorial events organized by FocusCoE WP3, the results of the analysis of this dashboard provided the following figures:

- 124 SMEs were put in contact with the CoEs through the FocusCoE WP3 actions
- 151 Large companies were put in contact with the CoEs through the FocusCoE WP3 actions
- 111 other contacts (free-lance, university professors...) were made through the FocusCoE WP3 actions
- The number of companies depending on their sectors which were put in contact with the CoEs were:
 - in AI: 12
 - Aeronautics industries: 6
 - in Automotive industry: 9
 - in Biotechnology: 54
 - in Chemicals: 0
 - in Construction: 11
 - in Cosmetics: 1
 - in Defence industries: 2
 - in Electrical and electronic engineering industries: 26
 - in Food and drink industry: 0
 - in Healthcare industries: 14
 - in Maritime industries: 2
 - in Mechanical engineering: 5
 - in Medical devices: 1
 - in Raw materials, metals, minerals and forest-based industries: 10
 - in Space: 3
 - in Textiles, Fashion and creative industries: 0
 - in Public services / Civil protection: 0
 - in Bank/insurance: 3
 - in Energy utilities: 94
 - in HPC system, services and software providers: 119
 - other: 14
- All CoEs received some potential industry prospects (between 3 up to 60 potential leads per CoE) as an outcome of FocusCoE WP3 actions.

Regarding the KPIs, the ones used in WP3 were (and presented in more details in the deliverable D3.2):

1. The number of new industrial contacts for the CoEs, with the attributes (Company, CoE, Sector of the company, Size of the company (SME or large company), Level of contact (discussion, cooperation, common project, funding...)). The target number was 100 and the reached number is 386.

2. The number of industrial individuals having received information about CoEs, with the attributes (Company, Sector of the company, Size of the company (SME or large company)). The target number was 5000 and the estimated reached number is 18679.

It can be noticed that the target numbers were exceeded. Looking at the dashboard results, it was possible to put the CoEs with at least numerous industry prospects and through the events, more than 18000 industry people received in some way the opportunity to receive information about the CoEs. A detailed description of the KPIs, and the internal spreadsheet used to monitor these KPIs and the public elements are presented in Annex 5.9. WP3 also collected the final long-term results of the CoEs' interactions after the event. The final feedback is presented in the final deliverable D3.5 of WP3. (They were consistent with the specific intermediary feedbacks detailed in this deliverable D3.4).

3 Conclusion

During the FocusCoE project, Task 3.2 started smoothly with a first set of sectorial events selected in agreement with the CoEs, and a first sectorial event in Life Sciences attended jointly by WP3 and the CoEs in December 2019 with on-site participation of two CoEs (CompBioMed and POP). Subsequently, some hurdles arose during 2020 until the first part of 2021: Firstly, there was a shift regarding the main priorities of the CoEs. The CoEs were concentrated on adaptation of their software applications for the exascale within their scientific communities. Topics related to “services for industry” and more generally interactions with industries were shifted and became lower priority for some time. Secondly, the WP3 team needed to adapt the activities to the different maturity levels of the CoEs. Due to this, additional actions were undertaken with the series of thematic webinars, and the production of two booklets to provide the CoEs with guidelines regarding the organisation of sectorial events (both physical and online). Lastly, the COVID-19 pandemic, due to which we had to adapt the work of WP3 and its interactions with both CoEs and industry. To overcome this difficulty, WP3 adapted new solutions by experimenting with online sectorial events such as CAE2020 or EMMC2021, and by organising our own thematic webinars in February and April 2021 in order to keep promoting the industrial services of the CoEs and putting them in contact with potential users and customers. Afterwards, the events planned during the second part of the project all were virtual or hybrid, due to the sanitary situation. SIMAI Congress, EUSEW2021, NAFEMS World Congress, Medica 2021, Enlit2021 and the AI web café were still opportunities for the participating CoEs to promote their service offerings and to meet new potential users.

For all the sectorial events, FocusCoE WP3 coordinated the participation of the CoEs by providing the CoEs with details of relevant opportunities for the events (obtained from the organisers or online research), by helping them benefit from the budget support through sharing the booth with FocusCoE and other CoEs and by providing all possible general support activities (to prepare common communication material, to be able to have someone being at the booth - real or virtual - all day long). FocusCoE also acted as a common intermediary between CoEs and the organisers before, during and after the event. For instance, for the Spanish CoEs' representative attending an event in Italy, it was very useful to have a FocusCoE WP3 Italian partner acting as intermediary with the Italian organisers to ensure a smooth comprehension of the various opportunities available during the event and to benefit optimally from the event. As an outcome of this general organisation, even if the online events did not always provide the expected numbers of confirmed industrial prospects (with regards to the numbers expected from physical events, not possible in the given timeframe), the CoEs appreciated to be coordinated and supported by FocusCoE. Similarly, the events' organizers often suggested to re-iterate the CoEs participations or to organize other future webinars together.

While the online events were less efficient than physical events to provide industrial prospects to the CoEs, in a given situation where no physical events were possible, as was the case in 2020-2022, they are a reasonable solution to ensure promotion as widely as possible of the CoEs' services offerings. The best virtual options are either to attend major events, with good experience of organising online components, or to organise webinars on a dedicated topic within larger events with substantial audience. The CoEs took advantage of this and used the opportunities to participate at sectorial events to promote their service offerings and to look for industrial prospects. Several of them even expressed interest in continuing with this approach, depending on their own timeline and goals.

4 References

[1] FocusCoE Deliverable D3.2, "Interim report on the WP3 activities", Project Month 18 (May 2020), which was revised and re-submitted following the Project Month 18 review

[2] FocusCoE Deliverable D3.1, "*Report on the sectorial approach priorities*", Project Month 6 (May 2019), which was revised and re-submitted following the Project Month 18 review

[3] Best practices booklet for sectorial events - physical events (7 pages) and Best practices booklet for sectorial events - online events (10 pages), <https://www.hpccoe.eu/download/>

5 Annexes

5.1 EMMC virtual booths screenshots

E-CAM, European Centre of Excellence



Ana C. Mendonça
CECAM, Switzerland

Poster / Presentation

Links

<https://www.e-cam2020.eu/>

Open Contributions and Virtual Stands Session

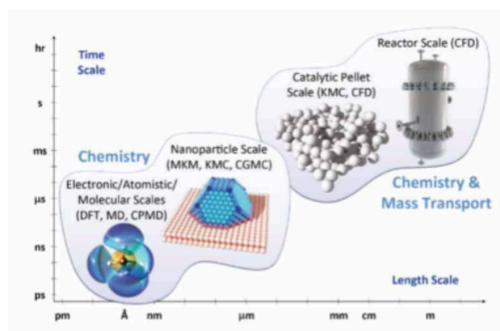
02.03.2021, 16:30-17:30
03.03.2021, 16:30-17:30

Meet me via:
<https://ucl.zoom.us/j/95240464903>

E-CAM, European Centre of Excellence for software development, training and industrial discussion in simulation and modelling aims at (1) developing software to solve important simulation and modelling problems in industry and academia, with applications from drug development, to the design of new materials. (2) Tuning those codes to run on HPC, through application co-design and the provision of HPC oriented libraries and services; (3) Training scientists from industry and academia ; (4) Supporting industrial end users in their use of simulation and modelling, via workshops and direct discussions with experts in the CECAM community. E-CAM is funded by the EU H2020 R&I programme and is coordinated by CECAM at EPFL (CH). It is a partnership of 13 CECAM Nodes, 4 PRACE centres, and one Centre for Industrial Computing (Hartree Centre).

Figure 8: E-CAM virtual booth at EMMC2021

HPC Performance Optimisation for Materials Science



Federico Panichi

Numerical Algorithms Group Ltd, UK

Poster / Presentation

Links

<https://www.nag.com/>
<https://pop-coe.eu/>
https://twitter.com/POP_HPC
<https://www.youtube.com/POPHPC>

Open Contributions and Virtual Stands Session

03.03.2021, 16:30-17:30

Meet me via:

<https://ucl.zoom.us/j/98100268888>

As an HPC Application Analyst at Manchester NAG, I'm involved in the EU-funded project named Performance Optimisation and Productivity (POP). POP is an HPC Centre of Excellence (CoE) devoted to the optimisation and analysis of academic and industrial parallel codes. I joined NAG on February 2020. Prior to NAG, I worked as a C++ software engineer. I earned my Ph.D. degree in Physics at the University of Szczecin.

Figure 9 : POP virtual booth at EMMC2021

TREX Targeting Real Chemical Accuracy at the Exascale



Michele Casula
TREX, The Netherlands

Poster / Presentation

Links

<https://www.youtube.com/channel/UCgkQzeUW6O77jLpUEtm2RDA/videos>

Open Contributions and Virtual Stands Session

02.03.2021, 16:30-17:30

03.03.2021, 16:30-17:30

Meet me via:

<https://ucl.zoom.us/j/95784186242>

TREX Targeting Real Chemical Accuracy at the Exascale

In a few years, we will have in Europe the first generation of exascale machines. To harness this huge computational power, new software strategies need to be devised and this requires a significant, joint effort of domain scientists and computational experts. To this aim, the European Commission funds targeted Centers of Excellence, each to empower a specific scientific community. TREX has been awarded Center of Excellence for the community of quantum chemistry. TREX federates European scientists, High Performance Computing stakeholders, and SMEs to develop and apply high-performance software solutions for quantum mechanical simulations at the exascale.

Figure 10: T-Rex virtual booth at EMMC2021

5.2 CAE2021: virtual booth and additional material

The communication material was produced in collaboration with WP5 for this sectorial event and the two participating CoEs.



Figure 11: Logo for the common booth for the two participating CoEs coordinated by FocusCoE -WP3 at CAE2021

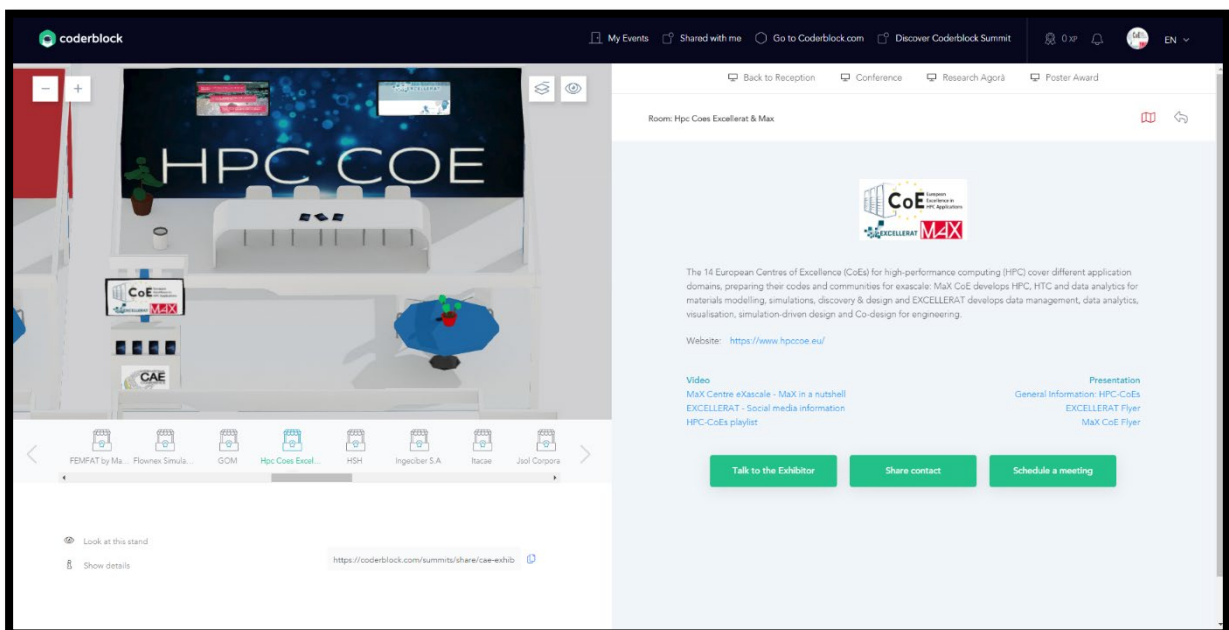


Figure 12: Screenshot of the HPC-COES: MaX & EXCELLERAT booth at CAE2020

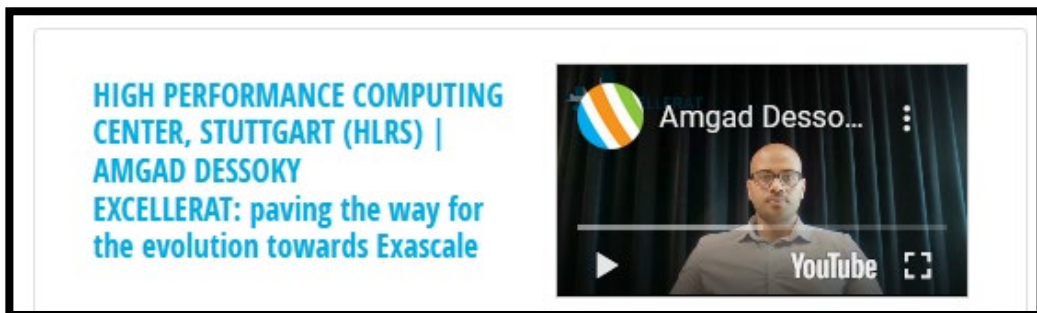


Figure 13: Short video to advertise EXCELLERAT talk at CAE2020

5.3 Thematic webinars additional information (agenda, speakers, links to the presentation or the slides)

- Webinar on “Opportunities and Challenges for Industrial Applications” in February 2021 with speakers from EoCoE and POP

Webinar Agenda

Guest Speakers from Various HPC Centers	
10:00 – 10:15	Introduction: Marta Chinnici (ENEA, Italy - FocusCoE)
10:15 – 10:35	EoCoE: the European Energy oriented Centre of Excellence in HPC Presenter: Massimo Celino (ENEA, Italy)
10:35 – 10:55	Parallel block low-rank sparse direct solvers with applications Presenter: Alfredo Buttari (CNRS, France)
11:15 – 11:35	Working with SME on the design of new energy materials Presenter: Alison Walker (University of Bath)
11:35 – 11:55	Discussion & Lessons Learned
11:55 – 12:00	Conclusion

Attendance: Total number of contacts: 64. Number of sustained participants: ca. 50

Recording: available on the FocusCoE internal project owncloud

- Webinar in May 2021 “Industrial Challenges of CoEs in Medical/Pharma sectors” with speakers from BioExcel, CompBioMed, PerMedCoE and also industrial speakers from Atos, Nostrum and ElemBio

Webinar Agenda

Introduction (HIPEAC Innovation Stimulation & FocusCoE)

CoEs:

- BioExcel
- CompBioMed
- PerMedCoE

Industrial Partners:

- Nostrum Biodiscovery
- ElemBio Tech
- Atos

Wrap up – Q&As

Event description and programme with available slides: [CSW Spring 2021 - HiPEAC](#)

Attendance: Total number of contacts: 96. Number of sustained participants: ca. 40-45

Recording: Yes, published on following

link:<https://www.youtube.com/watch?v=CNa2j7HAXmU&list=PLUU79oBORyMjEYQ-KSft5ep9seXC5uUCE&index=9>

Report on Webinar “Opportunities and Challenges for Industrial Applications”, 4th February, 2021

Foreword

The present document highlights the main feedback information on the Webinar: “Opportunities and Challenges for Industrial Applications”, organized by BSC in the framework of the activities of Project FocusCoE-WP3. Feedback was obtained through an online questionnaire sent out to all participants that had left their email contact in the webinar platform during the event.

Presentation

Introduction:

Centers of Excellence promote the use of upcoming exascale and extreme performance computing capabilities and scale up existing parallel codes towards exascale scaling performance. The Centres of Excellence cover tools and optimize HPC applications along multiple areas of knowledge. Furthermore, they address the skills gap in computational science in the targeted domains by specialized trainings for increased adoption of advanced HPC in industry and academia.

Main objectives:

Following session aims to bring together the Centers of Excellence in Medical / Bio / Pharma sectors and selected industrial partners to discuss about industrial challenges in the sector, how the Centers of Excellence can help to tackle them, opportunities are emerging from them. It is a good opportunity to get a common understanding of the ongoing activities within the different CoEs and foster collaboration opportunities.

Target Audience

We expect to bring together the computing systems specialists from the HiPEAC community, with the CoE partners application specialists and industrial contacts in the medical / Bio / Pharma vertical and hence potential end users of the centers of excellence.

About CoEs:

[Bioexcel](#): The Centre of Excellence for Computational Biomolecular Research (Bioexcel) is operating towards advancement and support of the HPC software ecosystem in the life science domain.

[PerMedCoE](#) is the HPC/Exascale Centre of Excellence for Personalised Medicine in Europe and aims to provide an efficient and sustainable entry point to the HPC/Exascale-upgraded methodology to translate omics information into actionable models of cellular functions of medical relevance.

[CompBioMed](#) is a user-driven Centre of Excellence in Computational Biomedicine, to nurture and promote the uptake and exploitation of high performance computing within the biomedical modelling community.

FocusCoE: is the concerted action for the European HPC CoEs bringing together the “ecosystem” of Centres of Excellence helping them to more effectively fulfil their role, which is to ensure that extreme scale applications result in tangible benefits for addressing scientific, industrial or societal challenges.

Webinar Agenda

Introduction (HIPEAC Innovation Stimulation & FocusCoE) – ([Slides](#))

CoEs

- BioExcel ([Slides](#))
- CompBioMed – ([Slides](#))
- PerMedCoE – ([Slides](#))

Industrial Partners

- Nostrum Biodiscovery – ([Slides](#))
- ElemBio Tech – (Slides)
- Atos - (Slides)

Wrap up – Q&As

Attendance: Total number of contacts: 96. Number of sustained participants: ca. 40-45

Recording: Yes, published on following link :
<https://www.youtube.com/watch?v=CNa2j7HAXmU&list=PLUU79oBORyMjEYQ-KSft5ep9seXC5uUCE&index=9>

Promotion: FocusCoE used all possible promotion channels including all previously collected industrial contacts (more than 200), all WP3 partners got involved sending to their own contacts (own mailing lists, CoEs website; mail list of previous webinars), it was widely promoted by WP5

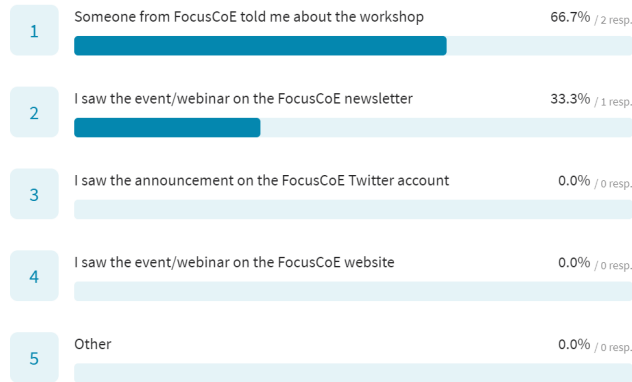
Evaluation questionnaire

Respondents: Total number of contacts: 22. Number of complete answers: 10

Big picture

All Devices	Desktop	Mobile	Tablet	Other
Views	Starts	Responses	Completion rate	Average time to complete
39	22	10	45.5%	02:50

1. How did you hear about the webinar "Opportunities and Challenges for Industrial Applications"?

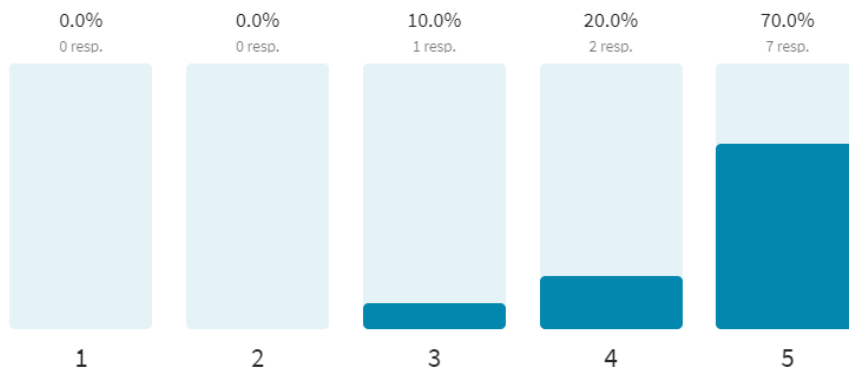


2. Please order from 1 to 5 a few event items

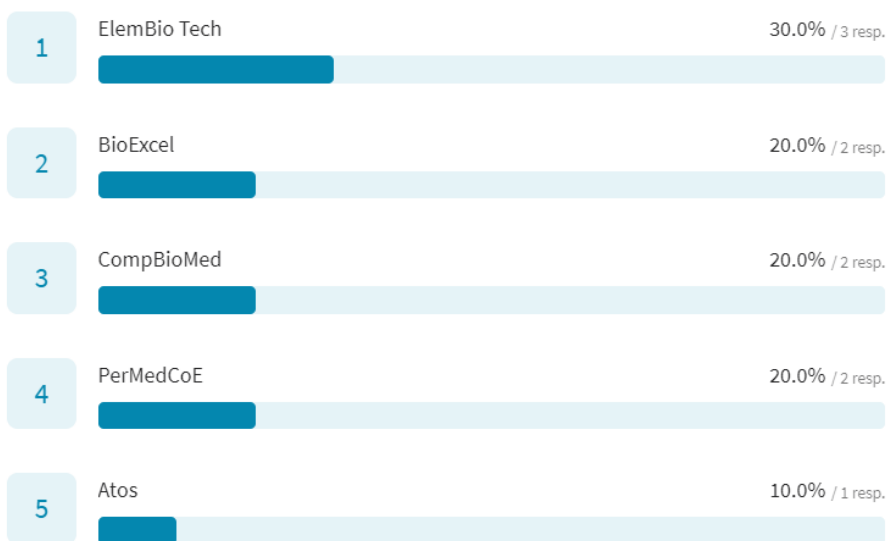


3. Please give a mark (1 to 5) to the quality of the programme

★ 4.6 Average rating



4. Please specify the presentation you were most interested in:



5. What did you dislike about the event? (e.g., the organization, the technical problems, the topics, the presentations, gender balance, etc.)

Answers collection

- Nothing
- Nothing really
- "It seemed that everyone simply presented their stuff irrespectively of what was presented before or after. I thought it was a good forum to make CoE engage with Industry, what was needed, what was expected"

6. Would you like to learn more about any specific technologies presented?

- "Update wrt the current status of the art"
- "I think what is needed is closer interaction between industry and CoEs"
- "No"
- "ELEM, GROMACS"
- "No, I would like to learn about career options in that area"
- "pyCOMPSs, dislib"
- "More examples, cost and revenues for society"

7. Which are the main challenges in your daily business that can be tackled by HPC?

- "Time to market"
- "None"
- "Medical and patient data management and innovation"
- "data analysis, management"
- "Molecular modelling"
- "Execution of massive applications"
- "Superintelligent"
- "Machine Learning for Biomedical robotics"

8. What are your major outcomes from attending the webinar?

Answers collection:

- "That there are different CoEs and different industry partners involved/interested"
- "Updated knowledge"
- "Knowledge about the CoEs and healthcare industry trends"

9. What other HPC topics/themes are of interest to you for future events?

- "CFD"
- "How to improve by bringing together the different partners"
-

10. Do you have in mind to take contact with CoEs?



Conclusions

There was a reasonably good number of attendees ca-40-45 sustained attendees from the 95 people that had pre-registered. Attendee rate was reasonably high when compared with usual no-shows' rates of free webinars – so it can be stated that event was genuinely interesting from scratch. While big number of attendees were coming from academia, there was as well reasonable number of industrial attendees. This is due to the choice of the umbrella – HipEAC community is very academic oriented, hence efforts for attracting industrial people were highly valued. On top of its session was recorded and put on YouTube (having at the time of writing this deliverable close to 100 views)

Ecosystem-wise it was an outstanding opportunity to bring many communities across the whole sectorial vertical from lower system levels, HPC domain application developers to upper health sector stakeholders



Content-wise there were very interesting outcomes on the discussions – following points summarized the session:

What are main industrial challenges in the sector ?

- Atos presentation on global Trends on the Health Industry / Technology Trends
- COVID-has shown the importance of how CoEs can help
- Real life examples shown by SMEs, it is not science fiction -real business is already done (& facilitated via CoEs)

How can Centers of Excellence help to tackle them ?

- CoEs are filling necessary GAPS
- Benefits of for SMEs being part of CoEs (presented by Nostrum BioDiscovery, ElemBio, etc)
- Trainings, webinars, codes available for download & use for anyone interested
- Models for engaging external bodies in place (BioExcel enterprises, SLA, OLA)

The rate of valid answers to the questionnaire was around 25% of the recipients. While the number of answers may not be statistically significant, response-rate of such questionnaires is usually lower. In general, there was high level of appreciation on the quality of the event, interest in the presentations, etc., and open-ended questions some ideas of potential further topics of interest and content that can be addressed in the future.

5.4 SIMAI2021: Agenda and speakers

Mini-symposium Agenda

Date: 3th September, 2021

Hybrid format (live and online)

Duration: 9:30-12:00 Room L (SIMAI-registration only)

Time: 20 min Talk + 5 min Question

<u>Time</u>	<u>Speakers</u>	<u>Talk Title</u>
<u>09.30-09.55</u>	Ignatio Pagonabarraga (CoE: E-CAM)	A path to extreme-scale computing for industry and academia
<u>09.55-10.20</u>	Alfredo Buttari (CoE: EoCoE)	Parallel block low-rank sparse direct solvers with applications
<u>10.20-10.45</u>	Francesco Buonocore (CoE: EoCoE)	HPC & BigData for Materials
<u>10.45-11.10</u>	Pasqua D'Ambra (CoEs: EoCoE. EUROHPC project:TEXTAROSSA)	Scalable AMG Preconditioners for Computational Science at Extreme Scale
<u>11.10-11.35</u>	Tomaso Esposti Ongaro (CoE: ChEESE)	The transition to Exascale in Solid Earth Sciences

Attendance: Number of sustained participants: ca. 25

Recording: Yes, available only for SIMAI participants

Industrial Session: “EoCoE Contribution”

Date: 1rd September, 2021

Hybrid format (live and online)

Duration: 17:50-18:15 Room Central (SIMAI-registration only)

<u>Time</u>	<u>Speaker</u>	<u>Talk Title</u>
<u>17.50-18:15</u>	Bruno Majone (EoCoE) Presenter: Andrea Galletti (EoCoE)	Detailed hydropower production modelling over large-scale domains: the HYPERstreamHS framework

Attendance: Number of sustained participants: ca. 70

Recording: Yes, available only for SIMAI participants

5.5 EUSEW2021: virtual booth and various areas' interfaces screenshots

Virtual Energy Talks took place on a dedicated online platform across 25-29 October 2021. Contributors delivered a presentation to stimulate interaction and discussions with the audience. Each Energy Talk session lasted a total of 20 minutes (10-minute presentation followed by 10 minutes of Q&A). It was in the Energy Talks sessions that HPC CoEs secured a 20-minute slot (see the visual of the programme in Figure 14).

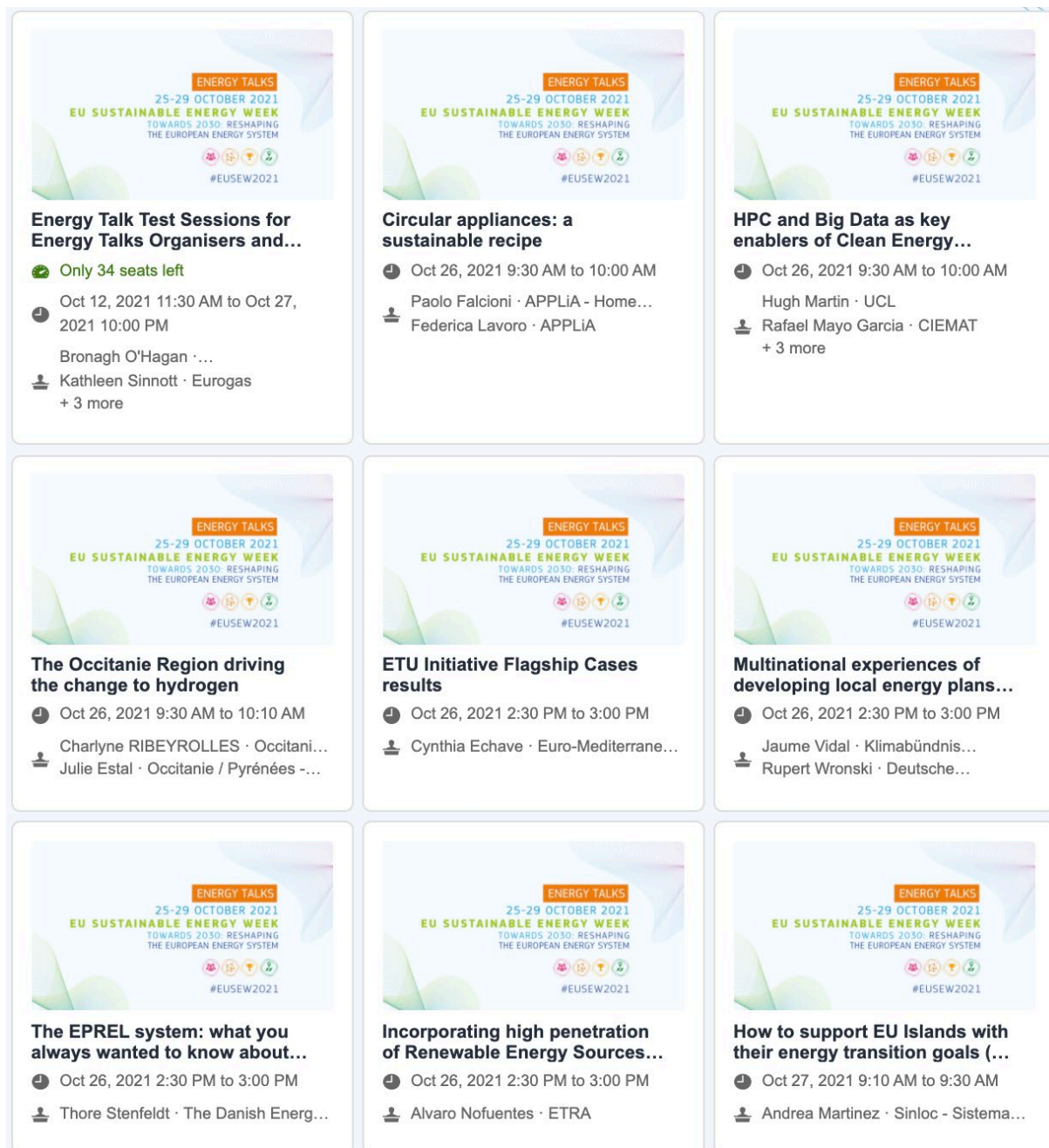


Figure 14: Section of programme containing the talk coordinated by FocusCoE WP3

The virtual EUSEW event proposed several parts or areas: a talk channel, a networking area and an Energy fair. The visuals are presented in Figure 15, Figure 16, Figure 17.

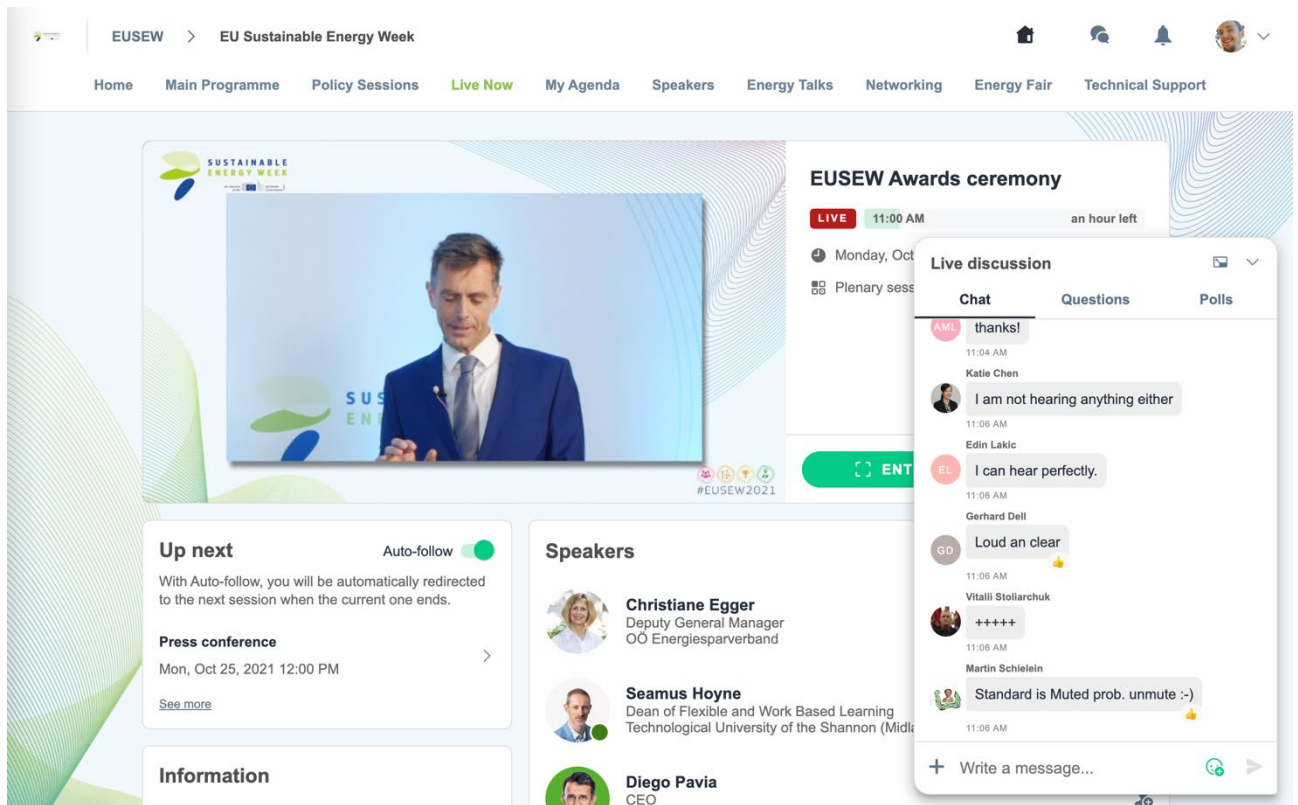


Figure 15: EUSEW full talk interface

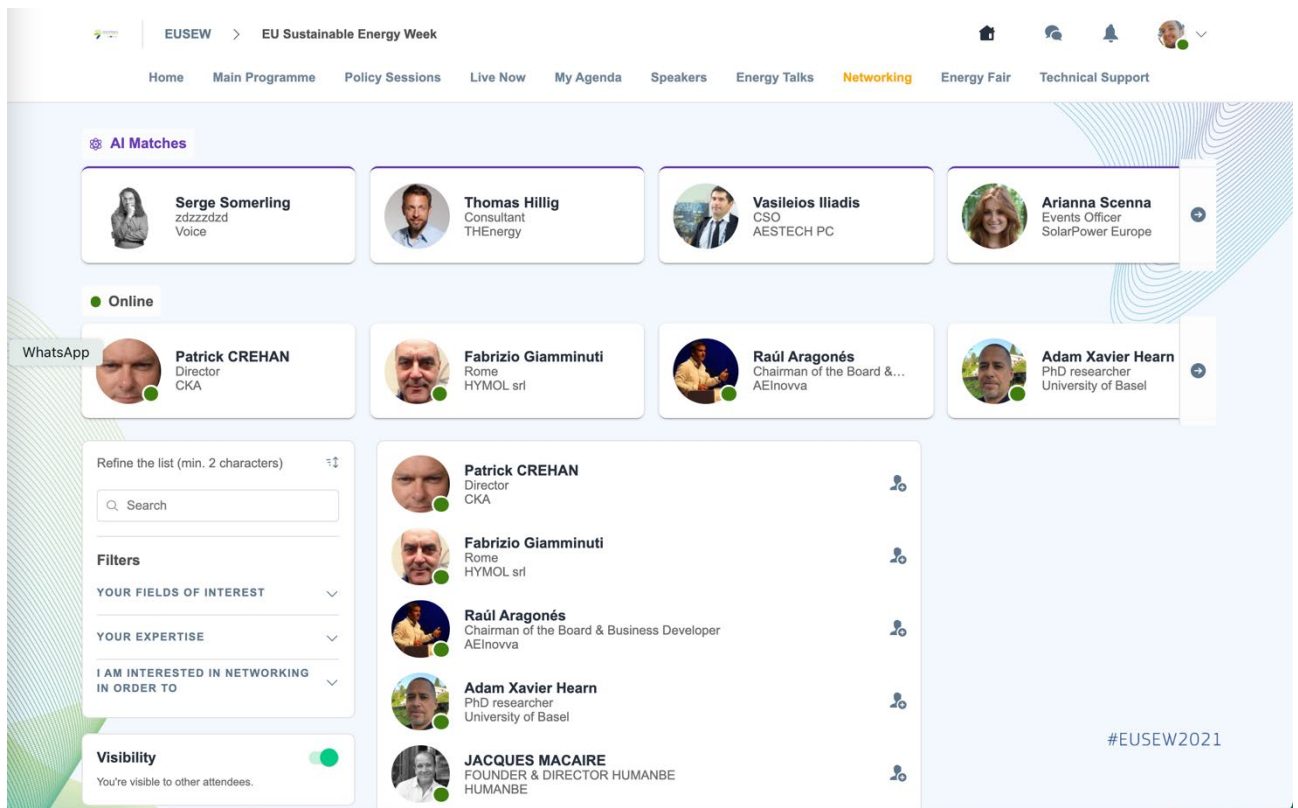


Figure 16: EUSEW networking area

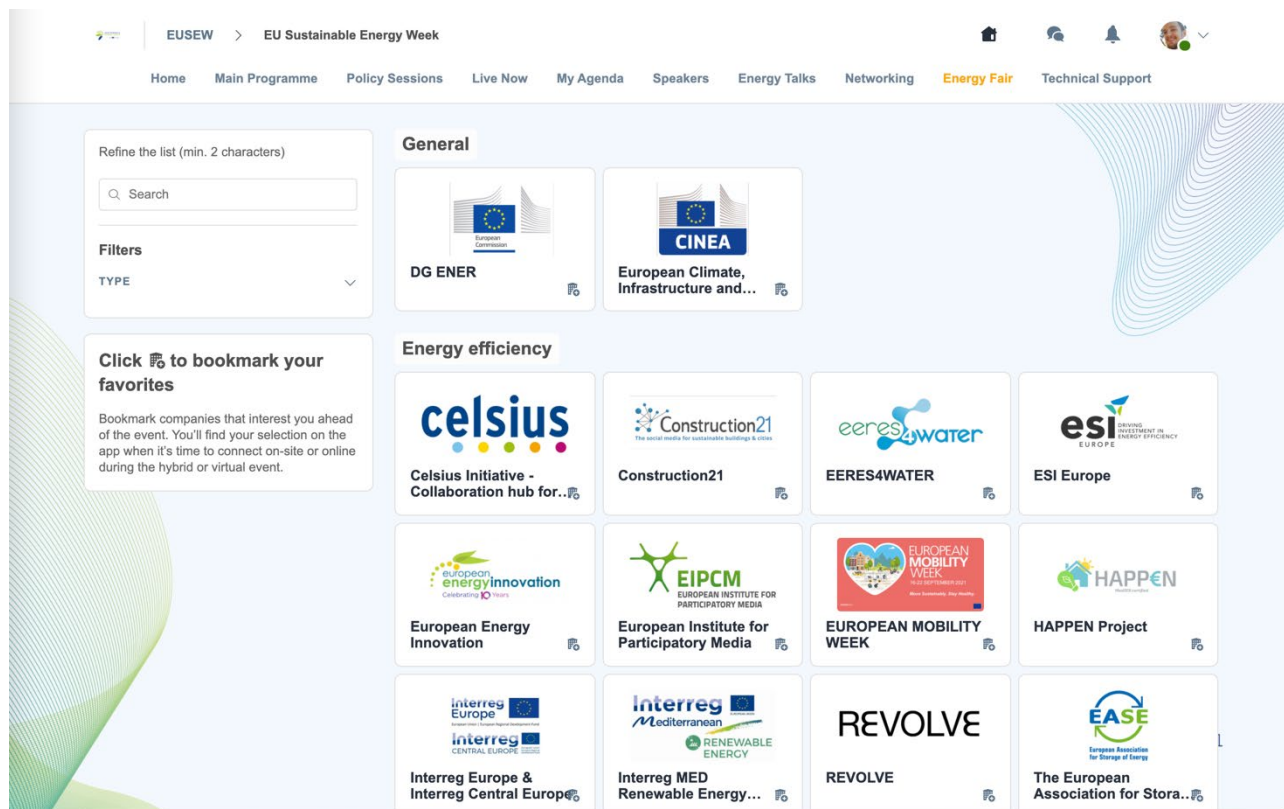


Figure 17: EUSEW Energy Fair

5.6 NAFEMS WC2021: talks and speakers' information

The aim of EXCELLERAT was to present the codes and tools created and optimized for Exascale such as Nek500, Alya, AVBP, TPLS, FeniCS and Coda and that can be used in automotive, aerospace, energy, and manufacturing industrial sectors.

- Ricard Borrell (Barcelona Supercomputing Center, ESP) on behalf of EXCELLERAT CoE presented “[Airplane Simulations on Heterogeneous Pre-Exascale Architecture](#)”, with used examples of Alya code as a tool for researchers to fully utilise the next generation of Exascale HPC systems and their heterogeneous hardware architecture.
- Christian Gscheidle (Fraunhofer SCAI, DEU) on behalf of EXCELLERAT CoE presented “[A flexible and efficient In-Situ Data Analysis Framework for CFD Simulations](#)”, as an EXCELLERAT tool that uses machine learning to perform in-situ analyses on data produced during large-scale simulations in real time. With the help of this tool, researchers can see intermediate results and early trends.
- Janik Schüssler (SSC-Services GmbH, DEU) on behalf of EXCELLERAT CoE presented “[Creating Connections: Enabling High performance Computing for Industry through a Data Exchange and Workflow Platform](#)”. As discussed in the talk, the tool addresses the needs and competencies of current and potential HPC users, albeit in a slightly different way, and enable them to remotely access clusters (currently both HLRS Hawk and Vulcan) from anywhere using an authorised device. Users would be also able to run simulations in the web front end without any command line interactions, which can have a steep learning curve for new users.
- On 26 October, EXCELLERAT’s technical manager Amgad Dessoky (High Performance Computer Centre Stuttgart, DEU) on behalf of EXCELLERAT CoE presented “[Paving the way for the evolution towards Exascale](#)” that gives a brief overview on EXCELLERAT

objectives, approaches, samples of the technical achievements, use-cases and services. Most of the attendees of this presentation/talk (around 12 attendees in total) were presenters with HPC background, mainly interested in EXCELLERAT approach.

The aim of POP2 was to present the POP methodology to participants and how it can be used by SMEs and corporate industries to improve the performance of their software and create a stronger connection between the HPC and engineering communities.

- POP2 analyst Federico Panichi (Numerical Algorithms Group Ltd, GBR) on behalf of POP2 CoE delivered a talk entitled “[Improving the Performance of Engineering Codes](#)” which presented the POP methodology, a set of case studies, and the approach they take to help their clients. The talk was performed during the “C9 HPC 2” session of the conference (see the [agenda](#)), with 3 talks in total, led by Lee Margetts, chair of the [HPC working group](#) at NAFEMS. The NAFEMS HPC working group and POP shared similar interests, such as creating a common ground to provide publications, seminars, and workshops on HPC topics as well as to share knowledge on next-generation of HPC applications.

5.7 Medica2021: agenda and panelists list

CompBioMed and PerMedCoE participated in the “Biomedical platforms” expert panel on Wednesday, November 17th, between 13:00 and 14:00. The panel was moderated by Prof. Dr. Christoph Brochhausen-Delius from the University of Regensburg, Faculty of Medicine, Institute for Pathology.

Panelists:

- Alexander van der Mey, CEO, Healex GmbH
- Pierre Cholet, Head of Business Development – Europe, Decentriq
- Dr. Philipp Mann, Senior Alliance Manager, Owkin
- Mariano Vazquez, Research Group Leader, Barcelona Supercomputing Center BSC-CNS
- Georges de Feu, CEO, LynxCare

The context of the event was that the MEDICA HEALTH IT FORUM was a platform for innovations. Top speakers and protagonists of the scene reflected on the latest developments in the field of digital health solutions in top-class expert panels, tech talks and deep dive sessions. As such, the event ensured that people within the technical, innovation and medical community were gathered, and we could disseminate to a very relevant set of people.

5.8 Enlit2021: Enlit365 web platform

In the context of Enlit community, we have had the opportunity to disseminate general information on CoE projects through the Enlit365 platform, an online community to interact with other projects, other exhibitors and Enlit community members and industry partners (see <https://www.enlit-europe.com/eu-projects-365>). The CoEs interested in this opportunity were: EoCoE-II, EXCELLERAT, CoEC.

The information submitted to be published on the platform included:

1. Logo
2. Project name
3. Brief description
4. Project beginning & end date
5. What are you seeking? (investment, knowledge exchange with, customers, sharing information about the project etc.)

6. Main contact details (Name, company and email address)
7. Country
8. Filled in classification sheet

5.9 AI4EU webcafe “AI WebCafe: How can HPC technologies help AI?” agenda, visuals and short summary

Agenda (90 min)

1. Introduction (FocusCoE) – 5 min
2. CoEs
 - CoE RAISE - AI in Scientific Workflows on High-Performance Computers (Andreas Linterman) - 15 min
Brief description: Overview of the challenges tackled by CoE RAISE and examples from two use cases with simulation and data-processing background.
 - CoEC - AI for future energy system (Temistocle Grenga) - 15 min
Brief description: Overview of CoEC and to show how AI is allowing to overcome problems from scientific applications that were not possible to attack with theoretical models
 - HiDALGO – Generating directed Social Network Graphs (Christoph Schweimer) - 15 min.
Brief Description: The Social Networks (SN) Use Case in the HiDALGO project simulates the spread of information in SN such as Facebook or Twitter. Since the user data in these networks is highly sensitive and must be carefully taken care of, we developed a method to synthesize social network graphs, replicating several topological and algorithmic graph features on which information dissemination can be simulated.
3. Panel Discussion – 30 min
4. Wrap up – Q&As – 10 min

Date: Thursday, 17th March, 2022. 15-16.30 AM

Event description and programme: <https://www.ai4media.eu/ai-cafes/>

Recording: <https://www.ai4media.eu/ai-cafes/>

Visuals:

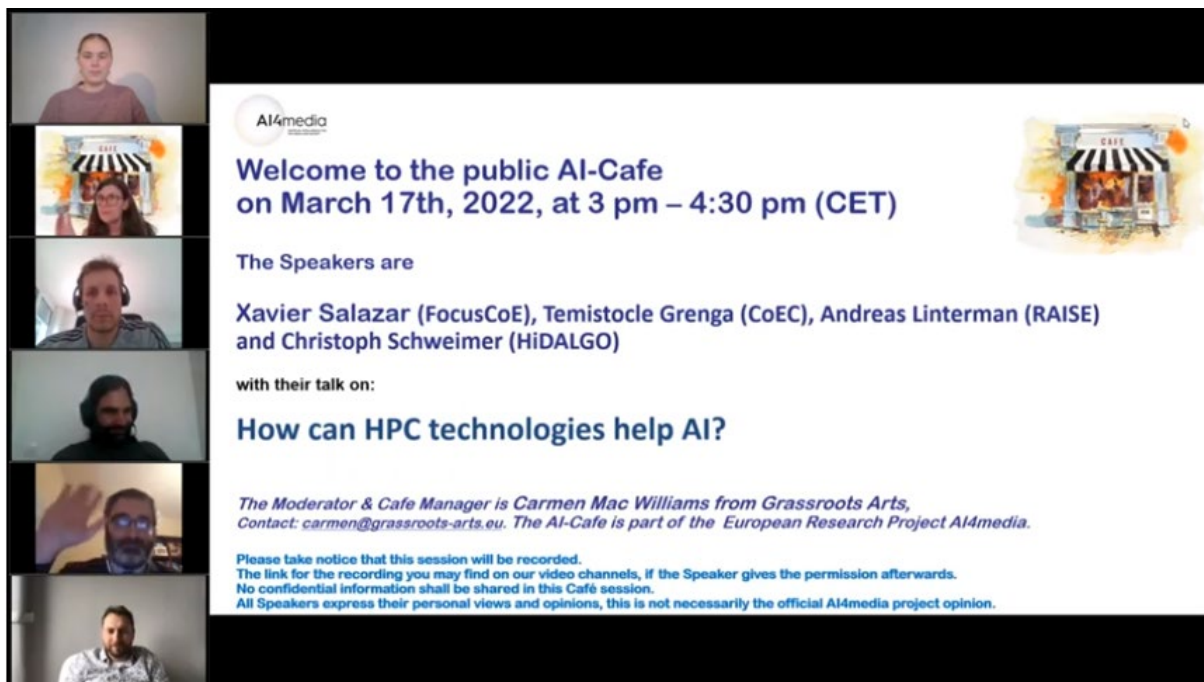


Figure 18: Screenshot - Welcome to the public AI-Cafe



Figure 19: Screenshot - AI4EU webcafe introduction

Webinar started with a brief introduction on FocusCoE and the resources available at the “one stop shop” of our website such as technological offerings, use cases, available codes and software packages, success stories, and link directly to the CoEs of interest. The CoEs presented several case studies on how they are using AI in combination with HPC technologies to solve real-life problems. Although each CoE’s application of AI differed, some common themes emerged in answer to the question, “How can HPC help AI?” Firstly, AI is now benefitting from the increasing availability of large and even “big” data sets but often can’t use them in their entirety due to excessive processing time. This is by far the clearest example of how HPC can help. In RAISE use case, a dataset that was

estimated to take over 300 hours to process using 4 GPUs was modified to run on HPC systems theoretically as large as 2000 GPUs in as little as 45 minutes. With the ability to more quickly train AI models using more data, it is also possible to increase the accuracy of the resulting models or surrogates. In turn, building more accurate surrogates speeds up the ability to run accurate simulations since one no longer needs to build the simulation models by hand. Using AI to build data model surrogates also has benefits for data privacy, as discussed in HiDALGO's use case. When modelling how messages spread across social media, researchers initially had to build social network graphs manually from data harvested from real social media users, whose privacy had to be strictly protected. However, with HPC computing resources, HiDALGO researchers were able to use those real graphs to train AI to build simulated social network graphs instead. These simulated graphs share the same characteristics of real graphs but require far less time to create and don't rely on any real-user data: thus, holding no privacy risks to users. The experience gained through these use cases has naturally brought several opportunities and challenges to light, which were also discussed over the course of the program. For instance, CoEC use case highlighted the existing bottleneck of moving data between different types of processors (CPU and GPU, as examples). Within the webinar the numerous resources in terms of services and training opportunities they provide to help AI experts learn to exploit the benefits of HPC

5.10 KPIs (monitored in conjunction with Task 3.1 of WP3)

WP3 KPIs			
KPIs	Attributes	Target (established at M18)	M42 results
Number of new industrial contacts for the CoEs	<ul style="list-style-type: none"> - Company - CoE - Sector of the company - Size of the company (SME or large company) - Level of contact (discussion, cooperation, common project, funding...) 	100	386
Number of industrial individuals having received information about CoEs	<ul style="list-style-type: none"> - Company - Sector of the company - Size of the company (SME or large company) 	5000	18 679

Regarding the M40 results:

- For the Number of new industrial contacts for the CoEs: we used the number of contacts reported in our internal monitoring spreadsheet presented in section 5.11
- For the Number of industrial individuals having received information about CoEs: we summed up either the number of participants to the whole event (provided by the organizers) or the number of participants to the webinar or at minimum the numbers of interactions reported for the event (when the organizer was not able to provide a total number of participants to the event).

5.11 Details from the WP3 online dashboard used to monitor the interaction with industry contacts (tasks 3.1 and 3.2)

DASHBOARD (at Date March 2022)

Number of new industrial contacts

Total number of contacts 386

Company type	
Number of SMEs	124
Number of Large companies	151
Number of Other	111

Sector	
# companies in Aeronautics industries	6
# companies in AI	12
# companies in Automotive industry	9
# companies in Biotechnology	54
# companies in Chemicals	0
# companies in Construction	11
# companies in Cosmetics	1
# companies in Defence industries	2
# companies in Electrical and electronic engineering industries	26
# companies in Food and drink industry	0
# companies in Healthcare industries	14
# companies in Maritime industries	2
# companies in Mechanical engineering	5
# companies in Medical devices	1
# companies in Raw materials, metals, minerals and forest-based industries	10
# companies in Space	3
# companies in Textiles, Fashion and creative industries	0
# companies in Public services / Civil protection	0
# companies in Bank/insurance	3
# companies in Energy utilities	94
# companies in HPC system, services and software providers	119

How contact was made	
Trade fair	43
Brokerage	0
Industrial conference	85
Personal contact	15
Other	243

Interaction types	
Emails	20
Telcos	25
Meetings	23
Other	346

CoEs involved	
BioExcel	47
ChEESE	3
CompBioMed	60
ECAM	7
EoCoE	48
Excellerat	50
ESiWACE	3
HiDALGO	4
MaX	37
POP	46
RAISE	4
CoEC	4

These numbers result from the online dashboard filled in by the WP3 partners during the project to monitor the new industrial contacts provided to the CoEs. The adopted methodology and the procedure to create and update this dashboard are documented in D3.2.