



CSA-Industry4.E

Grant agreement No 830845 – ECSEL-2018-3-CSA-Industry4E

Coordination & Support action for Lighthouse Initiative Industry4.E

Deliverable 2.3

Summary reports of the workshop on Lighthouse projects

Lead parties for Deliverable: VTT, IMR

Deliverable due date: 31st March 2021

Actual submission date: 31st March 2021

Dissemination level: Public

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Version history

D2.3 Summary reports of the workshop on Lighthouse projects	
Version - Date	Comments & Recommendations
V0.1 - 15.09.2020	D2.3 draft version created (IMR)
V0.2 - 23.09.2020	D2.3 proposal version made (VTT)
V0.3 - 24.03.2021	D2.3 updated with workshop contents (VTT)
V0.4 - 29.03.2021	D2.3 full top to bottom review (IMR)
V0.5 - 30.03.2021	D2.3 Proposal version updated to “ready for submission” (IMR)

Executive Summary

This deliverable *D2.3: Summary reports of the workshop on Lighthouse projects* has been prepared by VTT, with the support of IMR at M30.



Figure 1: Pillar 2 - project activities of the CSA-Industry4.E

Evidence suggests that live interaction remains the most effective tool of bringing projects together and facilitating dialogue and cooperation among all stakeholders within the Digital Industry domain. For this reason, the CSA-Industry4.E project has organised two dedicated workshops to facilitate interactions between Industry4.E Lighthouse stakeholders to support the strategy for engaging the different research communities in collaboration.

In response to project needs and the evolving landscape outside the project the scope of the two workshops were swapped to enable the following:

- *Workshop #1* was dedicated to bringing projects of the Industry4.E Lighthouse Initiative together, reported under D2.2 (M12) by VTT.
- *Workshop #2* went one step further to bring all projects together under the related domain of Digital Industry, reported under D2.3 (M30) by VTT.

Workshop #2 was divided into four parts, including:

- Part 1. Welcome & Context* that contained LIASE presentation and presentations on key digital technologies (KDT) and Horizon Europe;
- Part 2. Results & collaboration* with two results presentation from H2020 projects (Track & Know and ConnectedFactories2) and two from ECSEL projects (Productive 4.0 and Arrowhead Tools); and presentation of portals;
- Part 3. Proposal Development* brought together the Horizon Europe insights and proposal making supports. Details in relation to the Teams site, workshop video recording, and participant contact details were also shared;
- Part 4. Discussion & feedback* aimed at further connecting the participants and open discussion on relevant issues for participants. As a result, several collaboration opportunities were identified.

Through this effort the CSA-Industry4.E has managed to bring together representatives from different European partnerships, project coordinators and project participants to continue their collaboration

after the life of the CSA-Industry4.E. This has been achieved through the timing of the workshop in parallel with the build underway to take project results and bring them into the new Horizon Europe Framework Programme and KDT for added exploitation. The tools to enable this to happen (namely T2.2 the establishment of the ECSEL portal) have been introduced to the network of project collaborators and dedicated resources have been put in place to further aid their innovation and collaboration. This has been enabled by successful workshop execution, demonstrated through positive participant testimonials and further collaboration outside of the CSA-Industry4.E facilitation.

CSA-Industry4.E had several plans for the second workshop during the year 2020 but due to unforeseen events – i.e., COVID19 rapid advance in Europe 2020 - it was not possible to have a second live workshop as originally anticipated. Between M12 and M30 additional opportunities to bring projects together were identified and capitalised upon as described in section 4.

Team involved in deliverable writing: Lise-Ann Sheahan IMR, Matias Vierimaa VTT; Antti Rantala VTT, Riikka Virkkunen VTT; & Leire Exteberria MGEP.

1 Introduction

D2.3: Summary reports of the workshop on Lighthouse projects has been prepared by VTT, with the support of IMR and MGEP at M30. Please read in conjunction with *D2.2 Summary reports of the workshop on bringing projects together* prepared by VTT, with support of S2i and AQUATT at M12.

[From project plan task description T2.2:](#)

Bringing projects together (VTT) M03-M30. “Live interaction remains the most effective tool of bringing projects together and facilitating dialogue and cooperation among all stakeholders. For that reason, the CSA-Industry4.E project will organise two dedicated workshops to facilitate interactions between Industry4.E Lighthouse stakeholders. Where appropriate, in order to save resources and to attract more participants, these workshops might be organised as side-events of relevant well-established conferences/events in Europe. Both workshops will involve a selection of the following elements:

- Keynote by an EC representative
- Highlight presentations of (Industry4.E) projects
- Relevant results from WP1 and task 2.1
- Interactive sessions on technical topics (4 major challenges and cross-cutting issues)
- Interactive sessions (share and learn e.g. on exploitation, communication, dissemination)
- Brokerage (synergies, speed dating)
- SME related session/presentation (experiences, barriers, successes in EU projects)
- Panel discussion
- Networking
- Interaction with the audience through the slido app

One report will be developed after each workshop, summarising the results (D2.2 and D2.3). “

Milestone 7: Links to related initiatives established. This milestone was supported through both “bringing project together” workshops by reinforcing the links to other related initiatives (see participants list [section 2.2](#)) namely: I4MS, DT-ICT, Smart EUREKA, FoF, and other European and National Initiatives.

Risk 5: The I4.E projects do not engage with the CSA supports. There was a low probability that risk 5 would occur at the time of describing the CSA-Industry4.E action. Due to the covid-19 pandemic travel restrictions across the globe, options to deliver a workshop as a side event to a relevant well-established conference/event in Europe diminished throughout 2020. Risk 5 mitigation planning was put in place. During risk mitigation task leader (VTT) and task contributors (IMR) capitalised on the widespread use of remote tools and ability to come together seamlessly in a virtual environment that emerged between M20-M30. M30 presented itself as the best opportunity to discuss topical opportunities and challenges faced by the projects as the new framework programme 9, Horizon Europe, was being launched and brokerage opportunities for the new upcoming calls related to the twin transition of Digital Industry were starting to emerge. The timing and agenda of workshop #2 proved advantageous attested to in the commentary and testimonials of participants, increasing the impact of the investment in the CSA-Industry4.E.

“Bringing Projects Together” Workshop | re-design phase

The CSA-Industry has shown a great capacity to be flexible and agile when it came to capitalising on opportunities outside the project, even when this required additional effort from the partners. Demonstrating the partnerships dedication to the community and stakeholders.

Workshop #1: The workshop was originally supposed to bring projects within and from outside the lighthouse together as described in the action. As the event was dedicated to ECSEL-JU symposium activities the CSA-Industry4.E and ECSEL-JU PO agreed that this workshop should be dedicated to the projects of the lighthouse only and the second workshop be dedicated to the larger set of projects. The final agreement was to hold the workshop in Bucharest, Romania on 19th June 2019 (M09) as a side-event of ECSEL-JU Symposium 2019, which proved to be a great success due to the convenient co-location. Results of this workshop have been reported in D2.2.

Workshop #2: The workshop took considerable preparation and planning due to the pressures placed on the organisers adjusting to the evolving COVID-19 situation. Increase in national lockdowns, travel restrictions and delays or cancelled major EU events with side event possibilities began to impact project delivery. In spring 2020 and summer 2020 preparations for live events were on-going. Later, it became apparent that virtual meeting was the only realistic option for the second workshop.

The CSA-Industry re-designed a workshop agenda that would stand out as a unique event opportunity to encourage participation and full attendance as well as having lively and constructive interactions to enable the further exploitation of key project results into Horizon Europe.

“Bringing Projects Together” Workshop | final description

Workshop #1: CSA-Industry4.E Lighthouse Projects | Workshop

- Date: 19 June 2019 (M9)
- Time: 08:30-15:30 (CET) including lunchbreak with participants
- Location: ECSEL-JU Symposium 2019, Bucharest, Romania
- Participants: ECSEL-JU Lighthouse Industry4.E project coordinators, ECSEL-JU office, LIASE members
- Description: Industry4.E Lighthouse stakeholder engagement workshop to present exploitable results and collaboration from the Lighthouse projects, EC vision and to identify exploitation needs and gain feedback for WP1 roadmapping work.

Workshop #2: Industry4.E | Bringing Projects Together | Workshop

- Date: 11 March 2021 (M30)
- Time: 12:00-14:00 (CET)
- Location: Virtual online event on Microsoft Teams with dedicated resources
- Participants: ECSEL JU Lighthouse project coordinators, ECSEL JU office, Horizon Europe national contact point(s), LIASE members, H2020 project coordinators
- Description: Come together with this exclusive group of experienced research and innovation project partners to get first-hand insight into the key exploitable results from projects including ECSEL Industry4.E and Horizon 2020 as we prepare for the Horizon Europe, Cluster 4, Digital Industry and Space, sept call deadlines and future R&I collaboration opportunities together.

Both workshops involved a selection of the following elements:

Scope:	Workshop #1 (M12)	Workshop #2 (M30)
Side event to major EU event	ECSEL brokerage event	Horizon Europe (HE)
Keynote by an EC representative	PO ECSEL-JU	HE National Contact Point
Highlight presentations of (I4.E) projects	9 I4.E projects presented	2 I4.E projects presented
Relevant results from WP1 and task 2.1	Roadmapping session	LIASE presented results
Interactive sessions on technical topics	Exploitable results discussion	Q&A and MS Teams
Interactive sessions (share and learn)	Enhancing impact discussion	Q&A and MS Teams
Brokerage (synergies, speed dating)	ECSEL-JU Symposium	Dedicated MS Teams site
SME related session/presentation	SME issues presented	SME relevant results
Panel discussion	Not included	Q&A and MS Teams
Networking	Discussion	Discussion and MS Teams
Interaction with the audience	Live event	Q&A and MS Teams

Key:

As described	
Adjusted	
Not selected	

Workshop #1 and #2 aim: To support the LIASE in developing the strategy for engaging different research communities in collaboration by: facilitating interaction between projects and between stakeholders, promoting best practice in addressing cross-cutting issues; stimulating cooperation on technical and operational levels; & elaborating the added value of Industry4.E and stimulate the participation of SMEs.

“Bringing Projects Together” Workshop | supporting the action:

Both workshops directly contributed to the following project goals and objectives:

CSA-Industry4.E project reaching 2 (of 4) overall goals:

- Goal 2:* To coordinate the relevant stakeholders, project consortia and policy makers along the Electronic Components and Systems value chain in Europe, in full collaboration with the Industry4.E Lighthouse Initiative Advisory Service (LIASE); &
- Goal 4:* To support the Industry4.E LIASE in facilitating the collaboration of different research communities, in promoting Industry4.E Visibility and in their reporting obligations to the ECSEL JU Governing Board.

The following specific CSA-Industry4.E objectives:

- Obj.4:* To facilitate interaction both within and between projects and stakeholders, from varying research communities, and promoting best practices in addressing cross-cutting issues and stimulating cooperation and collaboration on technical and operational levels;
- Obj.4:* To elaborate the added value of Industry4.E and stimulate the participation of SMEs;
- Obj.7:* To support projects in developing sustainability strategies and sustain partnerships and collaboration beyond funded duration; &
- Obj.8:* To reinforce links to other initiatives at transnational, national and regional level.

END OF SECTION 1

2 Bringing projects together | Workshop #2

2.1 Agenda

Workshop #2 at M30 had the following agenda:



Industry4.E
INITIATIVE FOR EXCELLENCE IN DIGITAL INDUSTRY

Industry4.E

Bringing Projects Together

Workshop

Description: Come together with this exclusive group of experienced research and innovation project partners to get first-hand insight into the key exploitable results from projects including ECSEL Industry4.E and Horizon 2020 as we prepare for the Horizon Europe, Cluster 4, Digital Industry and Space, September call deadlines and future R&I collaboration opportunities together.

Time: 1200 – 1400 CET

Date: Thursday 11th of March 2021

Location: Microsoft Teams

Agenda

12:00-12:05	<p>Part 1 Welcome & agenda (CSA-Industry4.E & VTT) Key Digital Technologies (KDT) (ECSEL) ECSEL Industry4.E Lighthouse - Key exploitable results (LIASE) Horizon Europe, Cluster 4, Digital Industry and Space (NCP)</p>
12:05-12:10	
12:10-12:20	
12:20-12:30	
<p>1230-12:35 Break</p>	
12:35-12:40	<p>Part 2 Results & Collaboration Key exploitable results examples EFFRA INTRASOFT INFINEON Luleå University of Technology Tools for collaboration user experience with the ECSEL portal (IMR)</p>
12:40-13:10	
12:40-12:45	
12:45-12:50	
12:50-12:55	
12:55-13:00	
13:00-13:30	
<p>13:30-13:35 Break</p>	
13:35-13:40	<p>Part 3 Proposal Development Horizon Europe (HE) early insight</p>
13:40-14:00	<p>Part 4 Discussion & Feedback Interactive session</p>

2.2 Participants and attendance

Participants:

The tables listed below demonstrate the calibre of the participants to the workshop, the main project associated to them, their pedigree and reach to additional projects (bringing projects together) and key exploitable results to take into the new framework programme, specifically targeted at the cluster 4 digital industry and space, twin transition calls (due to their appropriateness) were used as a selection criterion for their involvement at the online event. It should be noted that participants have a long-time background in research and innovation and thus current project presents only snapshot of their expertise.

ECSEL projects

Action Type	Company	Country	Invitations	Project Name	Topic
RIA, IA	Infineon	Germany	5	Productive4.0, SemI40, iDev40, AI4DI, iRel40	ECSEL-2016-2 - (IA) , ECSEL-14-2015 - Smart production , ECSEL-2017-1 - IA , ECSEL-2019-1-IA - ECSEL-2019-1-IA
RIA	Mondragon	Spain	1	MANTIS	ECSEL-01-2014 (RIA)
RIA	UPM	Spain	2	SWARMs, AFarCloud	ECSEL-01-2014 - (RIA) , ECSEL-2017-2 - RIA
IA	Signify	Netherlands	1	Delphi4LED	ECSEL-07-2015 - Design Technology
RIA	Sioux	Netherlands	1	I-MECH	ECSEL-2016-1 - (RIA)
IA	V2C2	Austria	1	SCOTT	ECSEL-2016-2 - (IA)
IA	MADEIn4	Israel	1	MADEIn4	ECSEL-2018-1-IA - ECSEL-2018-1-IA
IA	LTU	Sweden	1	Arrowhead Tools	ECSEL-2018-1-IA - ECSEL-2018-1-IA
IA	Valeo	France	1	CPS4EU	ECSEL-2018-1-IA - ECSEL-2018-1-IA
IA	Valmet	Finland	1	CHARM	ECSEL-2019-1-IA - ECSEL-2019-1-IA

Other projects related to Digital Industry.

Action Type	Company	Country	Invitations	Project Name	Topic
CSA, IA	VTT	Finland	2	ConnectedFactories2, DIH ²	DT-ICT-07-2018-2019, DT-ICT-02-2018 (DIH)
IA	Intract	Turkey	1	ENERMAN	DT-FOF-09-2020 - (IA)
RIA	Ichec	Ireland	1	REDAP	era-learn.eu/ 2018
RIA	Intrasoft	Luxemburg	1	Track&Know	ICT-16-2017 - Big data PPP:
RIA	The-mtc	UK	1	ENCOMPASS	FOF-13-2016 and DRAMA
IA	Innovalia	Spain	1	Boost4.0	ICT-15-2016-2017 - Big Data PPP:
RIA	Thales	France	1	AI4EU	ICT-26-2018-2020 - Artificial Intelligence
IA	In.tum	Germany	1	SHOP4CF	DT-ICT-07-2018-2019
IA	ATOS	Spain	1	QU4LITY	DT-ICT-07-2018-2019
IA	Day-one	Spain	1	STREAM-OD	FOF-03-2016 -
IA	Cetri	Greece	1	Z-Fact0r	FOF-03-2016 -
IA	EIT Digital	Belgium	1	MIDIH	FOF-12-2017 - (I4MS)
IA	Cloudsme	Germany	1	CloudiFacturing	FOF-12-2017 - (I4MS)
IA	Tyndall	Ireland	1	PIXAPP	ICT-29-2016 - Photonics and Photonics Manufacturing Pilot Line

In addition to above, two non-project affiliated speakers and six members of CSA-Industry4.E were invited to the meeting.

Attendance:

Meeting Summary	
Total Number of Participants	38
Meeting Title	Industry4.E Bringing Projects Together Workshop
Meeting Start Time	3/11/2021, 10:28:13 AM
Meeting End Time	3/11/2021, 1:06:08 PM

In addition to invited participants, several attendees joined that were affiliated to the ECSEL or other projects. Due to privacy issues we can't make the list available in this deliverable.

2.3 Presentations – Part 1 Welcome & context

The first part of the workshop presented the overall structure and the workshop etiquette.



The workshop adopted the following etiquette to support collaboration and discussion. The MS Teams chat function was used for collaboration purposes, to keep schedule and to track all questions and answers either during the workshop or after the meeting and report the answers and questions back to the audience.

Workshop etiquette

- Participants, please turn off your cameras and mute your microphones until Part 4 of the workshop;
- If you have any questions to the presenters, please type them in the chat;
- At the end of each presentation one question will be selected for answering;
- Remaining questions will be answered in the chat and posted on our [workshop teams page](#) after the event;
- When presenting please turn your camera and microphone on, the [slidedeck](#) will be controlled for you;
- All cameras can be turned on during the discussion and feedback session during Part 4; &
- The workshop will be recorded, please inform the [organisers](#) (in the chat) if you wish to be removed from the recording or group picture during Part 4.



ECSEL Joint Undertaking

European Commission and European Union



This project has received funding from the ECSEL Joint Undertaking (JU) under grant agreement No. 830845. The JU receives support from the European Union's Horizon 2020 research and innovation programme and Ireland, Finland, Spain, Germany. The output reflects the views only of the author(s), and neither ECSEL-JU nor the European Union can be held responsible for any use which may be made of the information contained therein.

The project speakers spoke about the context (LIASE) and forthcoming key research calls (Horizon Europe and KDT) and the demonstrate results from several projects such as: Track&know; Productive4.0; ArrowheadTools; & ConnectedFactories2. Facilitators: Lise Ann Sheahan (IMR) and Matias Vierimaa (VTT).

Workshop presenters

 Berta Ferrer Llosa Programme Officer at ECSEL Joint Undertaking (BE)	 Marios Logothetis, PhD H2020: Track&Know INTRASOFT International S.A (LU)	 Ms. Lise-Ann Sheahan Coordinator CSA-Industry4.E Irish Manufacturing Research (IE)
 Dr. Andrew Lynch Chair Lighthouse Industry4.E LIASE Irish Manufacturing Research (IE)	 Thomas Gutt ECSEL: Productive4.0 Infineon (DE)	
 Stephen O'Reilly National Delegate & Contact Point for H2020 – ICT & FET & ECSEL Enterprise Ireland (IE)	 Prof. Jerker Delsing ECSEL: ArrowheadTools Lulea University of Technology (SE)	 Matias Vierimaa Partner CSA-Industry4.E VTT (FI)
	 Chris Decubber H2020: ConnectedFactories European Factories of the Future Research Association (BE)	



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The first presentation was given by Berta Ferrer Llosa (ECSEL-JU Office and PO of CSA-Industry4.E) and it introduced information on ECSEL-JU, including the high-level project statistics for 2020.



Berta Ferrer Llosa explained that ECSEL JU will continue in Horizon Europe as a new partnership Key Digital Technologies joint undertaking with a focus on twin transition – towards green and digital Europe.



ECSEL-JU programme continuation under Horizon Europe: Key Digital Technologies – Joint Undertaking (KDT-JU)

1. New partnership to help **speed up transition** to green and digital Europe:
(<https://ec.europa.eu/digital-single-market/en/industry4-e-joint-undertaking-new-partnership-help-speed-transition-green-and-digital-europe>)
2. The EC proposes a financial contribution of **€1.8bn between 2021-2027**, similarly to the participating Member States.
3. Financial contribution from Industry, research organisations, academia roughly **€2.5bn between 2021-2027**.
4. Legislative proposal: the single basic act:
(<https://ec.europa.eu/digital-single-market/en/industry4-e-joint-undertaking-new-partnership-help-speed-transition-green-and-digital-europe>)

ECSEL Joint Undertaking
Electronic Components and Systems for European Leadership

The second presentation set the context for the Industry 4.E Lighthouse, by Dr. Andrew Lynch. The LIASE Chairperson presented I4.E objectives, LIASE extension, and Lighthouse growth.



I4.E Lighthouse Objectives

- 01 Promote cooperation & collaboration
- 02 Foster continuous dialogue
- 03 Provide domain-specific guidance towards twin-transition
- 04 Platform for communication & innovation
- 05 Advisory services to guide the way
- 06 Share results for accelerated impact

I4.E Lighthouse LIASE

2019



Dr. Andrew Lynch
Irish
Manufacturing
Research (IE)

LIASE Chair



Dr. Olli Ventä
VTT Technical
Research
Centre Finland
(FI)



Mr. Chris Decubber
European
Factories
of the Future
Research
Association (BE)



Mr. Knut Hufeld
Infineon
Technologies
AG (DE)



Mr. Eduardo Beltrán de Nanclares
Mondragon
Corporation
(ES)

2020



Prof. Jerker Desling
Lulea
University of
Technology
(SE)



Dr. Oscar Lazaro
Innovalia
Association
(ES)



Mr. Sandro D'Elia
Technologies &
Systems for
Digitising Industries
(EC)

Industry4.E Projects



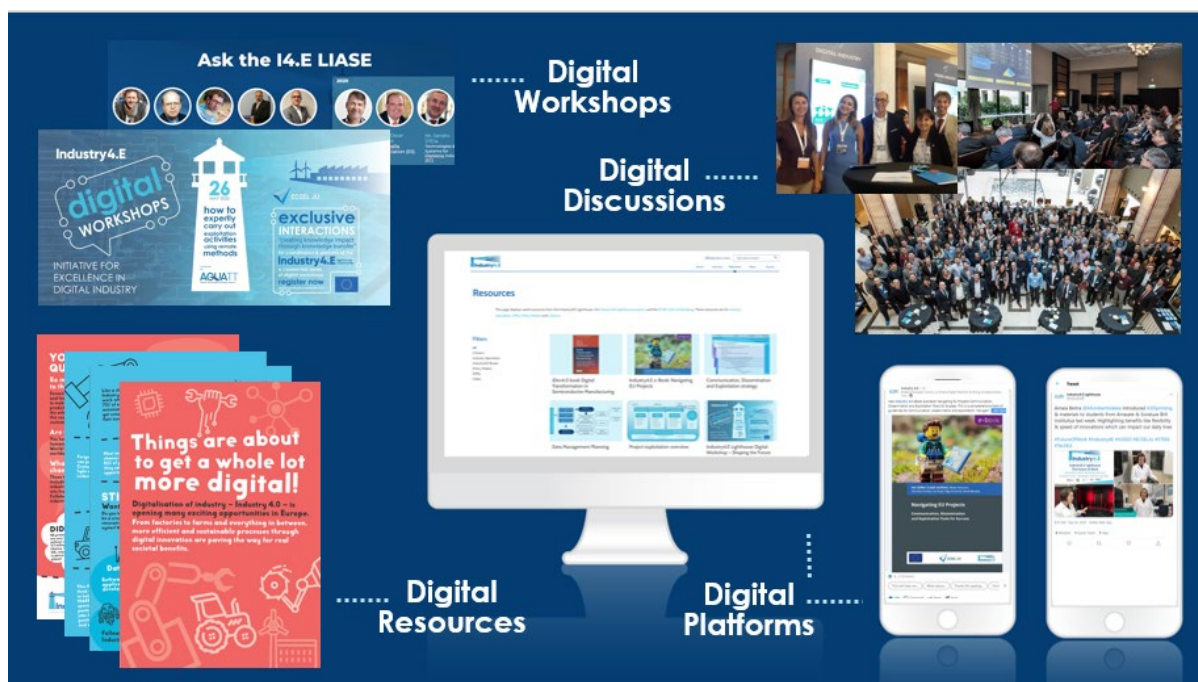
CONFIRMED IN 2019

- Productive4.0 www.productive40.eu
- MANTIS www.mantis-project.eu
- SWARMS www.swarms.eu
- Semi40 www.semi40.eu
- Delphi4LED www.delphi4led.org
- I-MECH www.i-mech.eu
- SCOTT www.scottproject.eu
- iDev40 www.iddev40.eu
- AFarCloud www.afarcloud.eu
- MADEin4 www.semi.org/eu/MADEin4
- Arrowhead Tools www.arrowhead.eu

NEW IN 2020

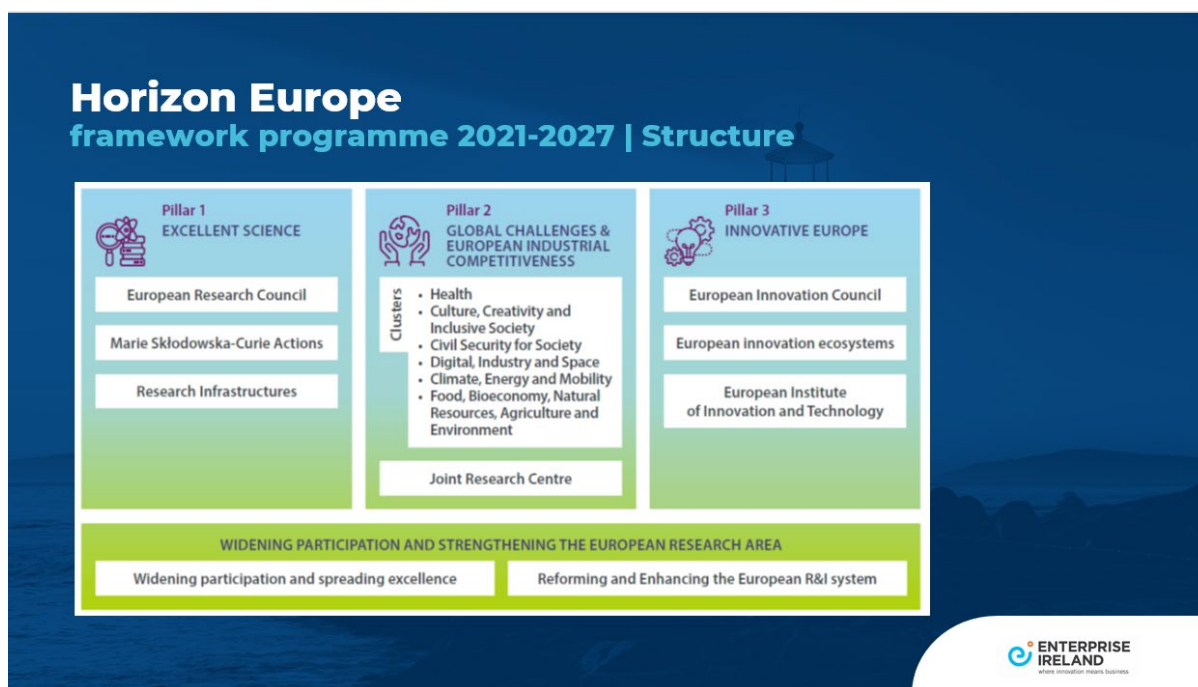
- CPS4EU www.cps4eu.eu
- AI4DI ai4di.automotive.gfh-aw.de
- CHARM www.charm-ecsel.eu
- iRel4.0 www.irel40.eu

Some of the highlights of I4.E current activities include: LIASE online meeting arranged regularly and LIASE have participated to digital workshops; ECSEL portal offers means to access results & demos and further collaborate; Altogether 700+ partners involved; Position paper has been created for I4.E; Digital network for LIASE has more than 700 followers; 1000+ participants in digital workshops; & E-Book for communication, exploitation, and dissemination activities.



Questions in relation to lighthouse activities continuation were asked. LIASE is impressed with the successful strategy delivery for engaging the different research communities in collaboration not just to KDT but other communities, the task on KDT-JU support to continue the efforts of the CSA-Industry4.E and LIASE is still on-going.

The third presentation was from Stephen O'Reilly National Contact Point (NCP) for ECSEL and ICT in H2020. Stephen focused on the second pillar of Horizon Europe and Cluster 4 Digital Industry, and Space.



Cluster 4 Digital, Industry & Space Destinations

- **Destination 1** - Climate neutral, circular and digitised production
- **Destination 2** - Increased autonomy in key strategic value chains for resilient industry
- **Destination 3** - World leading data and computing technologies
- **Destination 4** - Digital and emerging technologies for competitiveness and fit for the green deal
- **Destination 5** - Open strategic autonomy in developing, deploying and using global space-based infrastructures, services and data
- **Destination 6** - A human-centred and ethical development of digital and industrial technologies

To support the projects and participants of the workshop Stephen O'Reilly provided valuable insight into the upcoming calls to further support exploitation of project results and added impact.

Cluster 4 Digital, Industry & Space Tentative deadlines

Destination	2021 deadline	2022 deadline	Budget
1. Industry	September	tbc	~€724M
2. Materials	September	tbc	~€758M
3. Data	8 September	5 April	~€346M
4. Digital & emerging	8 September	5 April	~€733M
5. Space	7 September	6 September	~€290M
6. Human centred & ethical	8 September	5 April	~€327M

Finally, Stephen O'Reilly pointed out that funding and tender's portal is a good source of information to see all projects already funded in H2020, including organisations involved.

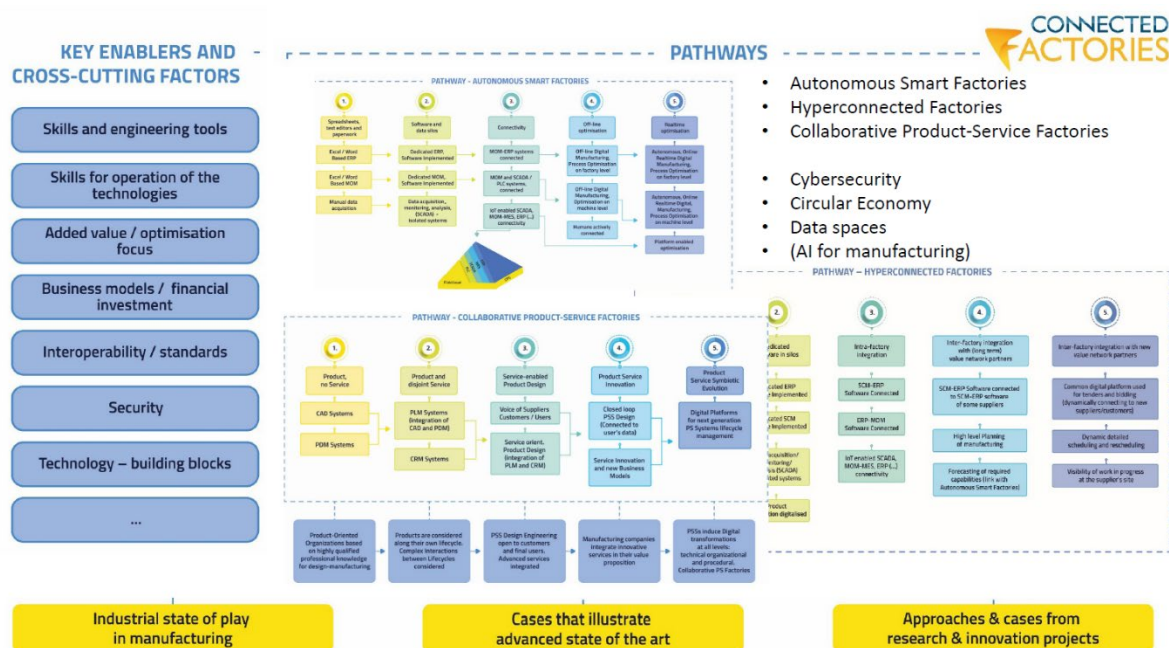
The question was raised in relation to the synergies between Digital Europe and Horizon Europe.

2.4 Presentations – Part 2 Results & collaboration

ConnectedFactories2 results and collaboration

The first presentation was from Chris Decubber from EFFRA, ConnectedFactories2 CSA concentrating on digitalisation of manufacturing and deployment of digital platforms and specifically where the project investigates pathways for digital transformation considering standardization as a major topic as well as the key enablers and cross cutting factors for project participants. Link:

<https://www.connectedfactories.eu/>




The project discussed further opportunities for research and innovation collaboration amongst participants at upcoming events and via the EFFRA tools for collaboration specifically through the EFFRA innovation portal: <https://portal.effra.eu>.


Question to presenter: Can the number of SMEs that have engaged with the pathways be quantified? Complementary actions specifically through standardisation of KPIs of the Digital Innovation Hubs and the Digital Europe Programme 2021-2027 European DIH Initiative will help to bring together collective figures at the European level.


Track & Know results and collaboration

The Track & Know project was presented by Marios Logothetis of INTRASOFT. The objective of the project was to increase the efficiency of Big Data applications in the transport, mobility, insurance, and health sectors. The Streamhandler platform was the result chosen to take forward to the group for further exploitation which could be used in other use cases, such as monitoring, messaging, analytics, and distributed applications. Link: <https://trackandknowproject.eu/>




Streamhandler
A big data streaming and analytics platform





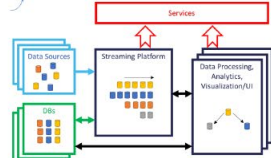
Track & Know

H2020 Track & Know "Big Data for Mobility Tracking Knowledge Extraction in Urban Areas" (ICT-16-2017 - Big data PPP: research addressing main technology challenges of the data economy), has been researching, developing and exploiting a new software framework that aims to increase the efficiency of Big Data applications in the transport, mobility, insurance and health sectors.




A data streaming and analytics platform, offering


- Real-time monitoring and event-processing
- Distributed messaging system
- High fault-tolerance
- Elasticity - High scalability




"Decoupling the complexity of Data Sources and DBs from Data Processing/Analytics"




This project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under grant agreement No 780754.






Streamhandler
A big data streaming and analytics platform




The platform can also be used for supporting other use cases:


Monitoring




- ✓ Real-time monitoring
- ✓ Collecting metrics, alerts, etc.

NETFLIX 


Messaging






- ✓ Message queues in content feeds
- ✓ Publish-subscribe system




Analytics





- ✓ Real-time processing
- ✓ Real-time analytics/event ingestion pipelines


  

Distributed Applications




- ✓ Distributed data centers
- ✓ Distributed log systems



This project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under grant agreement No 780754.



Question to presenter: Do you see the platform to go forward as a commercial platform or does it need to remain in a research space? The platform is mature enough for commercial use, but there are some opportunities to be developed with the twin transition calls of Horizon Europe in mind.

Productive4.0 results & collaboration

Productive4.0 project was presented by Thomas Gutt of Infineon. Productive4.0 has 105 videos published on YouTube, 164 scientific publications, 139 conferences and workshops and 12 TV spots achieved during the project. The project had 18 different use cases in total. Link to results: <https://productive40.eu>.



Productive 4.0

Introduction to Productive4.0

Industry4.E | Bringing Projects Together | Workshop
11.03.2021
Thomas Gutt
IFAG

109 Partners
19 countries
Budget: 106 Mio €
More than 560 persons involved
1017 Person Years

The project receives grants from the European H2020 research and innovation programme, ECSEL Joint Undertaking, and National Funding Authorities from 19 involved countries under grant agreement no. GAP-737459 - 999978918.



Publications total: 164

33 open Aire, 132 open Access

Conference/workshop
Contributions: 139

Press releases,
TV spots : 12

Productive 4.0	About	Stakeholders	Press	News	Publications	Contact
A Framework for Measuring the Costs of Security at Runtime	The 10th International Conference on Cloud Computing and Services Science	SCN	2019		Download	
Dynamic and Flexible Data Acquisition and Data Analytics System Software Architecture	IFFF Sensors	DP	2019		Download	
Towards Skills-Based Easy Programming of Dual-Arm Robot Applications	SCITEPRESS Digital Library Ethics of Publication	DP	2019		Download	
Topic Modelling for Summarizing Industrial Log Data	European Conference on Data Analysis	DP	2019		Visit	
On the Cost of Security Compliance in Information Systems	The 10th International Multi-Conference on Complexity, Informatics and Cybernetics (IMCIC 2019)	DP	2019		Download	
Evolutionary Construction of Convolutional Neural Networks	Springer International Publishing	DP	2019		Visit	
Importance of Standard Compliance in Cyber Physical Systems	20th International Conference on Production Research Manufacturing Innovation: Cyber Physical Manufacturing	SCN	2019		Visit	
Interoperability in Industrial SeCPS	Luleå University of Technology, FISLAR	SCN	2019		Download	
Intelligent industrial processes, Strategic Research and Innovation Area at LTU	Luleå University of Technology, FISLAR	SCN	2019		Download	
Arrowhead Tools	Luleå University of Technology, FISLAR	SCN	2019		Download	
INDUSTRY4.0 AND ZERO DEFECT MANUFACTURING	Luleå University of Technology, FISLAR	SCN	2019		Download	
Efficient Device-to-Device Service Invocation Using Arrowhead Orchestration	IEEE	SCN	2019		Download	
Reengineering the Lifecycle of Arrowhead applications: from skeletons to the client library	IECON 2019	SCN	2019		Download	
Arrowhead framework services for condition monitoring and maintenance	CoDET 2019	SCN	2019		Download	

Question to presenter: Do you see the use cases you mentioned go further in Horizon Europe projects or more in companies? The use cases will be further exploited in projects underway and in the future framework programme.

Arrowhead Tools results & collaboration

Arrowhead Tools was presented by Jerker Delsing from Luleå University of Technology. The grand challenges of the project are engineering cost reduction for wide range of Internet of Things (IoT) and System of Systems (SoS) solutions, tools chains for IoT and SoS digitalisation/automation engineering and management, and efficient training of engineers. Project technologies are tested in over 25 use cases, validating new engineering technologies and accelerating uptake of all the new technologies. Link: https://www.youtube.com/playlist?list=PLr0AcmG4OI00JYuemYSHbfA189b_ErnZ

Engineering tools for creating solution

- Examples
- SysML v1.6 - profile and library
- SysML v2 - domain specific language
 - Subject to standardisation within OMG

Arrowhead Tools is automating SoS engineering

Engineering efficiency improvements Validation and verification in 25+ advanced use cases

- Automated Formal Verification
- Engineering processes and tool chains development of a digitalized and networked diagnostic imaging
- Integration of electronic design automation tools with product lifecycle tools
- Interoperability between (modelling) tools for cost effective lithography process integration
- Support quick and reliable decision making in the semiconductor front- end manufacturing process
- Production preparation tool chain integration
- CNC machine automation
- SoS engineering of IoT edge devices
- Machine operation optimisation
- Rapid HW development, prototyping, testing and evaluation
- Configuration tool for autonomous provisioning of local clouds
- Communications Validation & Operational Monitoring



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- Digital twins and structural monitoring
- Deployment engine for production related sensor data
- Smart Diagnostic Environment for Contactless Module Testers
- Virtual Commissioning of a Cyber-Physical System for increased flexibility
- Production Support, Energy Efficiency, Task Management, Data Analytics and Smart Maintenance
- Linking Building Simulation to a Physical Building in Real-Time
- Secure sharing of IoT generated data with partner ecosystem
- Deployment and configuration
- Smart maintenance for industrial devices monitoring

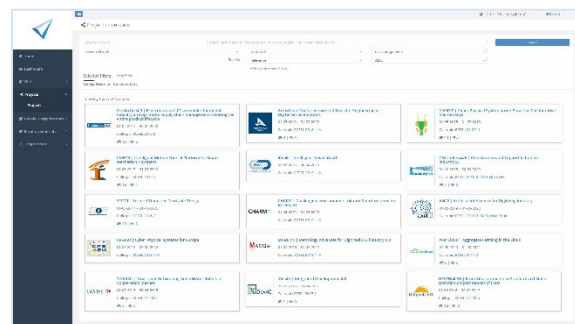
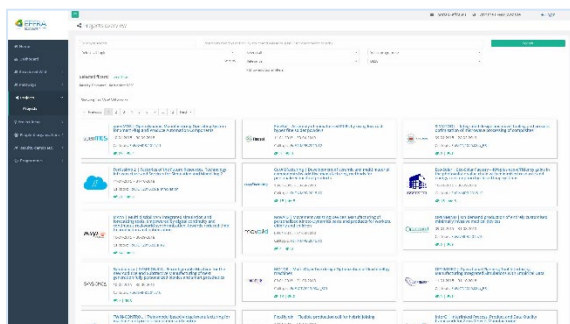
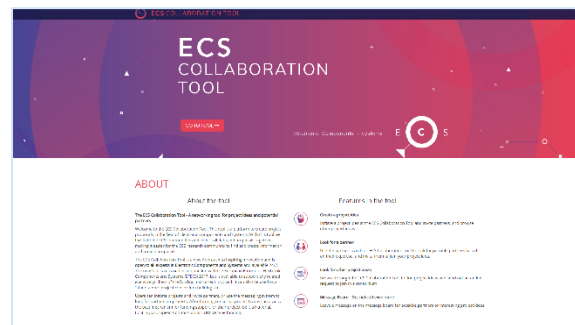
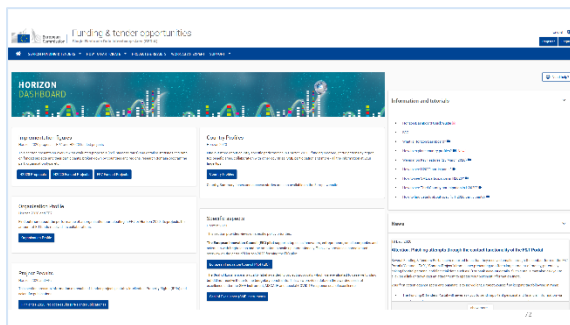
- Elastic Data Acquisition System
- Smart testing
- Data based digital twin for electrical machine condition

Question to presenter: Do you intend on taking some of these early findings forward into the upcoming calls that are happening? Plans are ongoing. It is very important that industrial ecosystems start to work. Arrowhead Tools have several already involved partners in Europe.

Results and collaboration portals

In this session Lise-Ann Sheahan (IMR) presented the tools for collaboration, to aid the further exploitation of results as we transition to the new HORIZON EUROPE. Links as follows:

1. <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/horizon-dashboard>
2. <https://ecscollaborationtool.eu/>
3. <https://portal.effra.eu/projects>
4. <https://www.ecsel-portal.eu/projects>



The new ECSEL-JU Communication platform is the online resource for stimulating the sharing of information about research and innovation projects and the results and demonstrators that these projects generate. The ECSEL portal was demonstrated to the participants to encourage its further use, this included a video made of the demonstration to enable further dissemination and exploitation of the CSA-Industry4.E asset. The portal supports community building and enhances the synergy of future activities. Extra video tutorials have also been made to aid this effort:

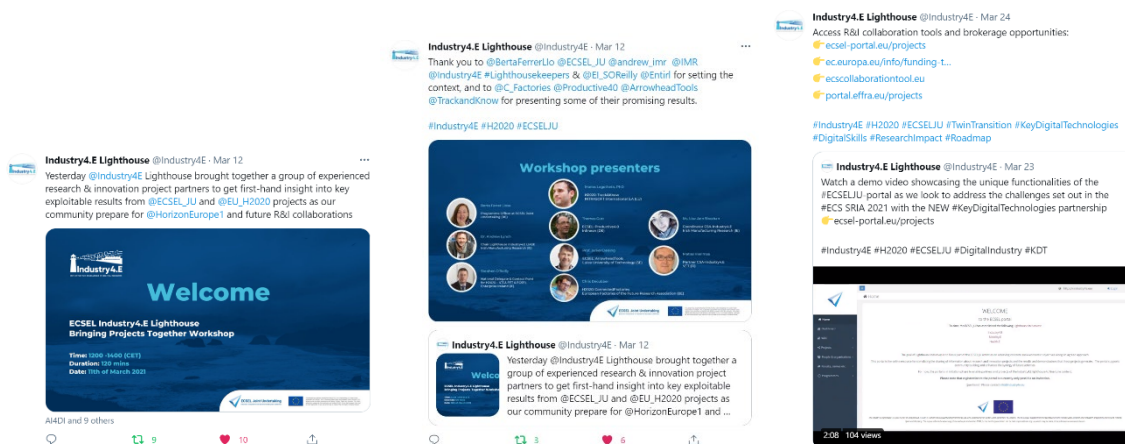
- ECSEL Portal Basics – Edit Projects and Results. Youtube video: [here](#)
- ECSEL Portal – Imports from the EU Open Data Portal. Youtube video: [here](#)

2.5 Presentation – Part 3 Proposal development

To further aid collaboration and innovation amongst project participants in relation to project results presented and those listed in the tools for collaboration and in demonstrate the added value of involvement in the workshop, Lise-Ann Sheahan IMR presented *Part 3 Proposal development*. This brought together the Horizon Europe insights and proposal making supports. Details in relation to the Teams site, workshop video recording, and participant contact details were also shared to ensure a complete repository for the projects which have come together. Participants of the workshop have access to the *Industry4.E | Bringing Projects Together | Workshop* Teams site and uniquely curated resources contained within.



All workshop information was shared with the wider stakeholder community via the Industry4.E social media channels, ECSEL portal and project website. Example of the tweets (which are hyper linked):



2.6 Presentations – Part 4 Discussion & feedback

Collaboration through conversation: The final part of the workshop aimed to further connect the participants and open discussion on relevant issues for those in attendance. The discussion and feedback involved almost 30 project managers. All participants had their cameras on, and a free form discussion was facilitated between all parties. Several project managers expressed their interest to present their on-going activities and actively involve other projects. As a result, several opportunities for further innovation and collaboration were identified:

- **MADEIn4 project** has created four surveys in their website, including “Industry 4.0 and standards survey” and encouraged other projects to participate to the [online survey](#).
- **IMECH-project** is continuing in a new form, taking results and new partners forward to the **IMOCO4.E project**. A workshop was proposed with other projects to further discuss architecture solutions. It was noted that in general, there are many reference architectures that could provide added value. There will be an event on 22nd April [Digitalisation of manufacturing: pathways, key enablers and skills](#) by EFFRA – that also discusses this topic.
- **AI4DI project** results were presented – artificial intelligence for digitalising industry. Discussion emerged in relation to the combination of AI and Industry4.0 to address twin transition. AI4DI has arranged a [survey on exploitation mapping](#) and how to apply AI in different domains. AI4DI will hold its 2nd Webinar titled “AI for Semiconductor and Industrial Machinery Industries” on March 26th and encouraged other projects to participate.

Supporting Project Managers: This was a unique opportunity to have an open conversation with the ECSEL-JU, a H2020 (and now Horizon Europe) National Contact Point as well as the Industry4.E LIASE, allowing the experience and newcomer project managers to actively participate or relax into a conversation on the challenges faced by Digital Industry. Resilience and the impact of COVID-19 was soon a topic of discussion, as well as the overwhelming need for more personal interaction now needed as a counterbalance to the remote virtual working environment which has been in place in many jurisdictions for over 12 months. The added stress for newcomers to research and innovation was commented on, due to the lack of opportunities to create the types of bonds afforded to participants of face-to-face events and workshops. The hybrid - both physical and virtual - solutions being experienced currently do hold out hope.

Reassuring feedback: The positive testimonials from participants in relation to the ECSEL-JU Industry4.E Bringing Projects Together workshop was noted in the discussion, the facilitators were pleased to receive several post-event email communications in relation to a successfully executed workshop with resources the attendees have found to be very beneficial as they prepare to transition with their project results to the next framework programme.

END OF SECTION 2

3 Sustainability of the network

The participants have been brought together to discuss a topic (#TwinTransition open call for proposals) that will remain on trend for some months beyond the life of the project. Providing this bridge (reason to stay in contact) has ensured the need for further interaction of stakeholders now and over the coming months as results are taken forward into the new framework programme. Without prompting, or CSA-Industry4.E intervention, the workshop participants are already instigating discussions amongst themselves, using workshop resources to further the discussion started at the event at M30. The Teams site and tools for collaboration demonstrated to the group are and will continue to receive active use in the coming months due to their appropriateness and relevance for actors in the R&I community needing new knowledge and attempting to build synergies and complement the existing European Commission data hub offering.

Participants of the workshop have access to the [Industry4.E | Bringing Projects Together | Workshop Teams](#) site and uniquely curated resources contained within:

1. Horizon Europe insights;
2. Proposal making supports;
3. Workshop video recording; &
4. Participant contact details

Resources also include links to tools for collaboration:

5. <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/horizon-dashboard>
6. <https://ecscollaborationtool.eu/>
7. <https://portal.effra.eu/projects>
8. <https://www.ecsel-portal.eu/projects>

Of note is the demonstration video created to highlight the effort in [Task 2.1: Establishing a communication platform for all stakeholders \(IMR\)](#).

The CSA-Industry coordination team (IMR) who played an active role supporting VTT in the design and delivery off the workshop have and will continue to manage the coordination behind the LIASE (IMR chair) as demonstrated in the [D5.2 Report about secretariat support provided to the LIASE](#) (M30) and [D5.5 Report about the bridging provided to the Industry 4.E Lighthouse Initiative](#) (M30) supporting the network beyond the life of the project.

END OF SECTION 3

4 Added impact from effort

The workshop took considerable preparation and planning due to the pressures placed on the organisers adjusting to the evolving COVID-19 situation. Increased in national lockdowns, travel restrictions and delays or cancelled major EU events with side event possibilities began to impact project delivery. In Spring 2020 and Summer 2020 preparations for face-to-face major EU live events were in the process of being reorganised or cancelled in some cases. This made alignment to these opportunities a major challenge. It became apparent that a virtual meeting was the only realistic option for the second workshop and bringing projects together. The CSA-Industry4.E re-designed the workshop agenda to enable it to stand out as a unique event opportunity, which resulted in active participation and full attendance as well as lively and constructive interaction to enable the further exploitation of key project results into HORIZON EUROPE.

This challenge presented two concrete opportunities for the project:

1. The consortium had the opportunity to prepare a new methodology for how online virtual workshops to support activities of the type should be carried out in a 100% virtual working environment, as demonstrated by the second workshop. This methodology has received praise from the participants and includes the following elements:
 - Standalone meeting with a *uniquely curated list of invitees based on project results* of merit from regional, national, and European projects including ECSEL Industry4.E and related major Horizon 2020 projects;
 - Dedicated *Microsoft Teams* site to act as a private repository of workshop resources, with the complimentary chat function to provide opportunities for discussion before, during and after the workshop between project managers and facilitators; &
 - *Timing of the workshop* to allow for alignment with the proposal development opportunities and challenges currently being faced by the project managers proved to be beneficial to the engagement and overall success.
2. The virtual working environment allowed for the opportunistic involvement of the CSA-Industry4.E to bring projects together at a considerable number of related events as summarised in the pages that follow.

4.1 Webinar on Digitalisation and digital platforms for manufacturing

About: This webinar focused on the projects associated to the call topic DT-ICT-07-2018-2019 (Digital Manufacturing Platforms for Connected Smart Factories), complemented by other key projects in this area.

CSA-Industry4.E role:

Presentation focused on the rationale, position, main focus and collaboration opportunities offered by CSA-Industry4.E.

Agenda: See Figure 2.

Date: 11 March 2020

Location: Online

Organised by: ConnectedFactories2

Projects brought together:

- DT-ICT-07-2018: ZDMP, QU4LITY and eFactory;
- DT-ICT-07-2019: SHOP4CF, DigiPrime and KYKLOS 4.0; &
- ECSEL-JU: Productive4.0, CSA-Industry4.E

Digitalisation and digital platforms for manufacturing webinar	
11 March 2020 Live Webinar from 09:15	
DRAFT AGENDA	
09:15 – 09:30	• Participants connecting to the webinar
09:30 – 09:45	• From ConnectedFactories 1 to ConnectedFactories 2 by VTT and EFFRA
DT-ICT-07-2018 projects	
09:45 – 10:00	• ZDMP - Zero Defect Manufacturing Platform + Industry 4 factory Solutions (i4FS) , Joao Sarraipa, Uninova
10:00 – 10:15	• QU4LITY - Digital Reality in Zero Defect Manufacturing - Jorge Rodriguez Edroso, ATOS
10:15 – 10:30	• eFactory - European Connected Factory Platform for Agile Manufacturing + eFactory Foundation, Stuart Campbell, Usman Waijid, Information Catalyst
10:30 – 10:35	• Update on clustering activities, Joao Sarraipa, Uninova
DT-ICT-07-2019 projects	
10:35 – 10:45	• SHOP4CF - Smart Human Oriented Platform for Connected Factories – Pieter Becue, Imec
10:45 – 10:55	• DigiPrime - Digital Platform For Circular Economy In Cross-Sectorial Sustainable Value Networks, Marcello Colledani, Politecnico Milano
10:55 – 11:05	• KYKLOS 4.0 - An Advanced Circular and Agile Manufacturing Ecosystem based on rapid reconfigurable manufacturing process and individualized consumer preferences, Jason Mansell, Tecnalia
11:05 – 11:15	• SeCoIIA (Adrien Becue, Airbus Security)
11:15 – 11:35	• Pathways: <ul style="list-style-type: none"> • Presentation with examples from Sergio Gusmeroli, FPM (Data spaces) and Katri Valkokari, VTT (Circular economy and digital manufacturing) • Example of Security pathway, Ulrich Seldeslachts, LSEC
11:35 – 11:45	• Productive 4.0 – Lise Ann Sheahan, Thomas Gutt
11:45 – 11:50	Conclusion

Figure 2: DMP webinar by ConnectedFactories2

4.2 Workshop / Shaping the Future Roadmap in Digital Industry

About:

“Shaping the Future Roadmap in Digital Industry” workshop was facilitated by the CSA Industry 4.E. This interactive workshop’s goal was to discuss the recommendations on the future of the Industrial digitalisation roadmap and shape next ECSEL/KDT research agenda.

CSA-Industry4.E role:

The workshop was organized in the context of the “Work Package 1: Enabling the execution of the Industrial digitalisation roadmap”. The gathered comments and feedback have been used as input to finalise: *D1.3 Report with recommendations on the future of the Industrial digitalisation roadmap* of the CSA-Industry 4.E project.

Date: 25th June 2020

Location: Online, ECSEL JU Symposium 2020

Organised by: CSA Industry 4.E

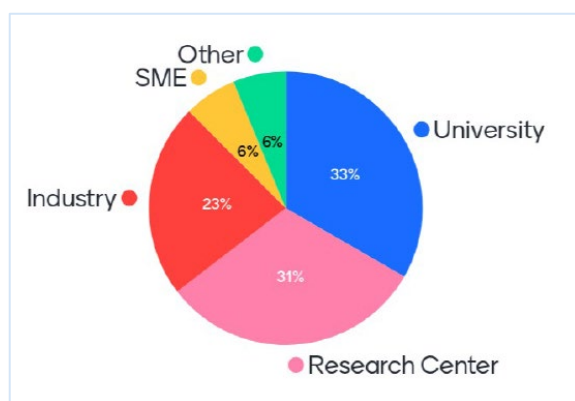


Figure 3: Type of organization of the participants

Agenda:

10:00-10:25 - Introduction and presentation of work done in CSA-Industry 4.E regarding roadmapping and the recommendations drawn.
Speaker: Leire Etxeberria (MGEP)

10:25-11:25 - Breakout sessions to discuss recommendations around specific topics:

- Key Digital Technologies for Green Deal. 20 minutes
- Artificial Intelligence in Digital Industry. 20 minutes
- Resilience in crisis time (COVID-19, etc.). 20 minutes

11:25-11:45 - Presentation of Digital Industry Chapter of Strategic Research Agenda (SRA) 2020.
Speaker: Olli Venta (VTT)

11:45-12:00 - Wrap up and conclusions.



Figure 4: The country of origin of the participants

Projects brought together:

51 people attended the workshop and they were distributed in 7 different breakout groups to discuss the topics. The attendees represented: 31% from research centers, 33% from universities, 23% from industry, 6% from SMEs and 6% from other kind of organizations (see figure 3). The attendees connected from all over Europe and they were from different countries (see 4).

4.3 Productive 4.0 - Final Event

About: This event was designed to showcase the results of the Productive4.0, the flagship project of the Industry4.E Lighthouse initiative of ECSEL-JU. Originally Productive4.0 was planned to be live event, in June 2020, as it became apparent (due to COVID-19 situation) that physical meeting was no longer possible, it was later transferred into online event in October 2020.

Agenda:

Date: 28th October 2020

Location: Online

Organised by: Productive4.0

CSA-Industry4.E role:

During the Productive 4.0 online event the CSA-Industry4.E organised a Industry4.E Lighthouse Initiative interactive session in a panel format.



The Digital Industry discussion was hosted by the LIASE chairperson Andrew Lynch and panelists included LIASE members: Chris Decubber (EFFRA); Knut Hefeld (Infineon); Olli Ventä (VTT); Sandro D'Elia (EC DigIndEU); Thomas Gutt (Productive4.0); and Oscar Lazaro (Innovalia).

Projects brought together:

Productive4.0 final event with project partners and supporters.



Figure 5:Productive4.0 Final Event Agenda

4.4 European Forum for Electronic Components and Systems (EFECS) 2020

About: EFECS is the international forum along the Electronic Components and Systems value chains in Europe. EFECS 2020 providing the means to meet online, learn, discover and shape Our Digital Future together, providing a parallel session for the three Lighthouses (Mobility4.E, Health4.E and Industry4.E) of ECSEL-JU. Presentations here: <https://efecs.eu/programme.html#day2>

Agenda: See figure 5

Date: 26th November 2020

Location: Online

Organised by: Aeneas, Artemis-IA, EpoSS, ECSEL

CSA-Industry4.E role:

The presentation focused an introduction to the LIASE, I4.E whitepaper and portal, demonstrating results from WP1 and the review of industrial digitalisation roadmaps and to present ECS SRIA 2021. In addition, the CSA-Industry4.E brought projects together at the virtual booth, facilitating questions.

Research priorities for digitalisation of industries

The Industry4.E Lighthouse has a special focus on all means of microelectronics and ICT for Digital Industry. Operating across project, funding, and national boundaries, Industry4.E is expected to bring together relevant RDI projects funded across various funding programmes helping them to connect with each other and the end-user/stakeholder community. This workshop is an exciting opportunity to learn about the work the LIASE and related parties are doing on Industry4.E Lighthouse.

Programme

- 11.30 Welcome & Introducing the Industry4.E lighthouse, - LIASE, CSA & I4.E Whitepaper
Andrew Lynch, IMR
[Download presentation](#)
- 11.50 Reviewing Industrial Digitalisation Roadmaps
Leire Etxebarria, Mondragon Unibertsitatea
[Download presentation](#)
- 12.15 ECS SRIA 2021 - Digital Industry
Olli Ventä, VTT
[Download presentation](#)
- 12.43 Discussion and Q & A
Andrew Lynch, IMR

Projects brought together:

All digital Industry related projects.



END OF SECTION 4

5 Conclusions

The CSA-Industry4.E has successfully delivered two workshops the first held on the 19th June 2019 (M09) in Bucharest, Romania and second held as an online event on the 11th March 2021 (M30).

As the possibility to organise the second workshop as a live meeting diminished, the CSA-Industry4.E created a new way to bring the projects together to afford the participants the best return on their time investment. This logistical challenge presented two concrete opportunities for the project:

1. The consortium had the opportunity to prepare *a new and impactful methodology* for how online virtual workshops to support activities of the type should be carried out in a 100% virtual working environment, as demonstrated by the second workshop. This methodology has received praise from the participants and includes the following elements:
 - Standalone meeting with a *uniquely curated list of invitees based on project results* of merit from regional, national, and European projects including ECSEL Industry4.E and related major Horizon 2020 projects;
 - Dedicated *Microsoft Teams* site to act as a private repository of workshop resources, with the complimentary chat function to provide opportunities for discussion before, during and after the workshop between project managers and facilitators; &
 - *Virtuous timing of the workshop* to allow for alignment with the proposal development opportunities and challenges currently being faced by the project managers proved to be beneficial to the engagement and overall success.
2. The virtual working environment allowed for the opportunistic involvement of the CSA-Industry4.E to bring projects together at a considerable number of related events. Despite the COVID-19 global pandemic and the associated challenges, the consortium has demonstrated *immense flexibility and opportunism, actively participating in several additional online* events held in 2020, as demonstrated in this deliverable.

The workshop introduced new collaboration opportunities between the projects and has served as a starting point for the future collaboration, utilising workshop resources to further continue discussion. The Teams site and tools for collaboration demonstrated to the group are and will continue to receive active use in the coming months due to their appropriateness and relevance for actors in the research and innovation community needing new knowledge and attempting to build synergies and complement the existing European Commission data hub offering.

END OF SECTION 5