European Initiative

Smart Anything Everywhere

Horizon 2020 Programme

SAE Collaboration Meeting July, 8th 2020

Meike Reimann, Steinbeis2i

Smart4Europe2 has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 872111.

Agenda 08.07.2020 10am - 1pm

Time	Session	Moderator (S4E2) Inputs
10:00	Intro and Agenda	Meike Reimann
	Lessons learnt Focus on open calls and covid19	Meike Reimann All
10:30	Dissemination – joint activities and tools	Julia Koch / Nikos Voros (Smart4All) /All
11:00	Sustainability	Olivia Uguen Rainer Leupers (Tetramax) / All
11:30	Common Reference for Collaboration	Isabelle & Jerome All
12:00	Discussion	Meike Reimann All
12:15	Future SAE Technologies	Haydn Thompson Morten Rasmussen, Technopolis

- **This meeting will be recorded, any objections?**

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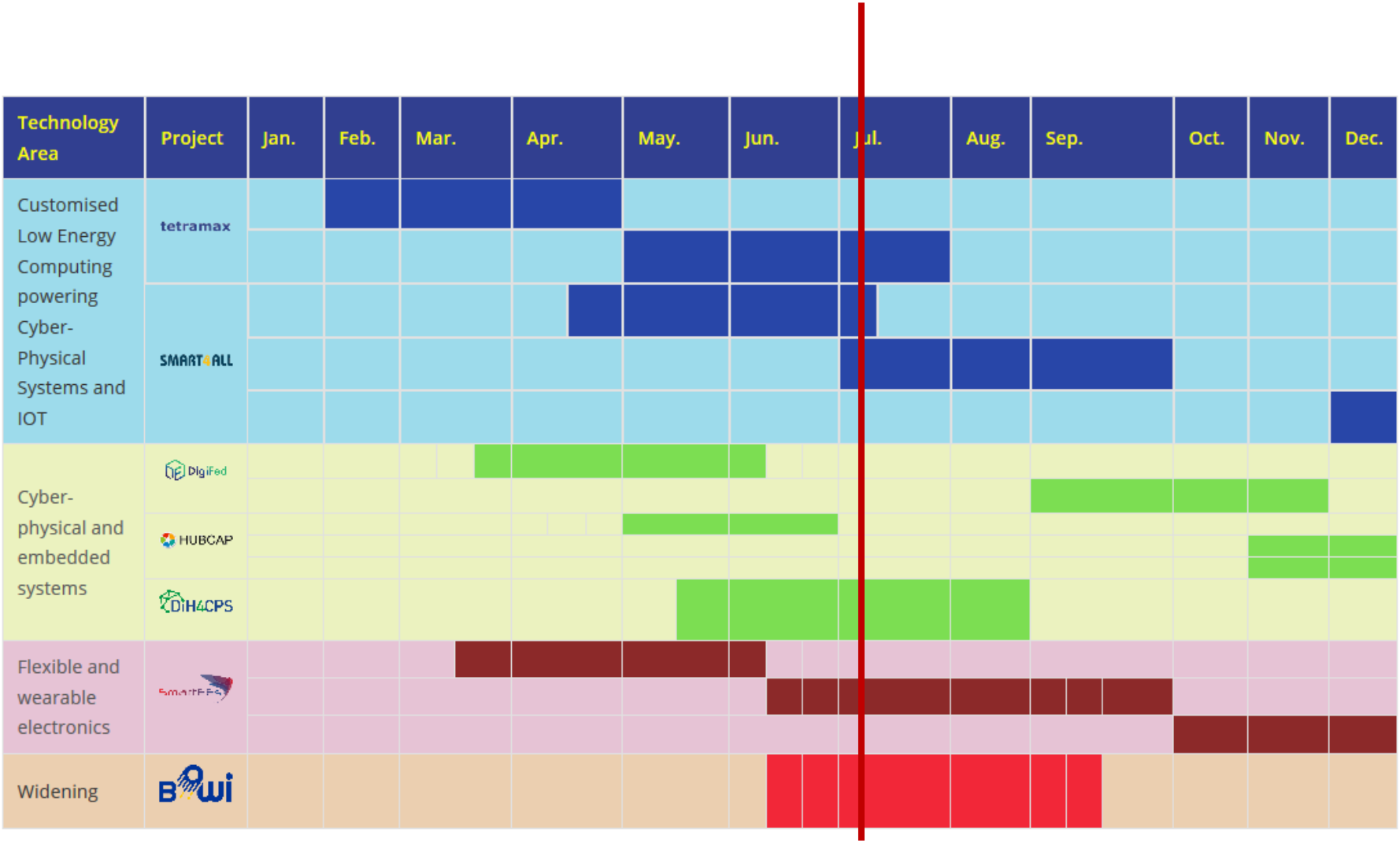
SAE Open Call Deadlines

SmartAnythingEverywhere



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Impacts of covid19

- Effect on Proposals (number and quality)
  Has the number of proposals
  - Increased
  - Stayed the same
  - Decreased

- Effects on Meetings and Events
  - Could you turn events on-line
  - Where they effective
  - Lessons learnt
  - Planned events

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Dissemination – Joint Planning

Proposed joint activities (or cross-promotion)

- (Online) Events, Conferences, Meetings, Workshops
- Webinars, Trainings

Mentimeter link:
https://www.menti.com/
Code: **27 42 89**

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Joint Dissemination Activities

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Innovation Portal

- Currently **redesigned** for better usability with focus on
  → SAE community (IAs/ DIHs)
  → SMEs (funding/ success stories)

- What we learned from the last CSA
  → SAE website is first/ second or third ranked referral to IA websites
  → Peaks of visitors after S4E activities

WE NEED YOUR INPUT!

Pls send your news, events, webinar recordings, trainings etc. for dissemination

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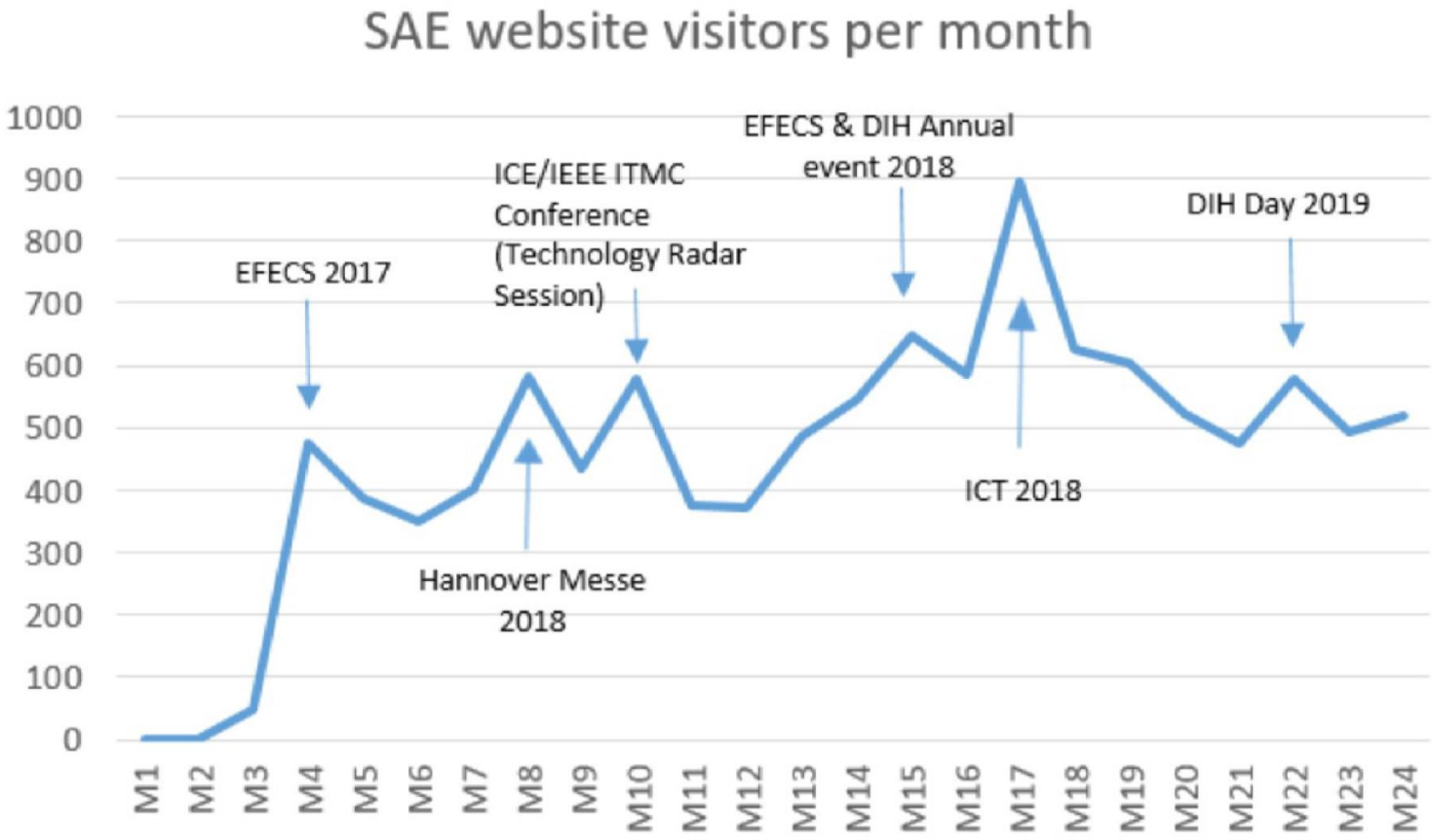
Website visitors



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Dissemination Activities 1/3

- Quaterly Newsletter
  - Currently around 200 subscribers
  - Next issue in July 2020
  - input needed
  - Pls share/ send out to project partners
  - Encourage IA partners to subscribe to & promote newsletter

- Social media
  - Active on Twitter (+700), LinkedIN (<100), Facebook
  - Pls re-/ post using #smartanythingeverywhere
  - Encourage IA partners to follow our channels & re-post

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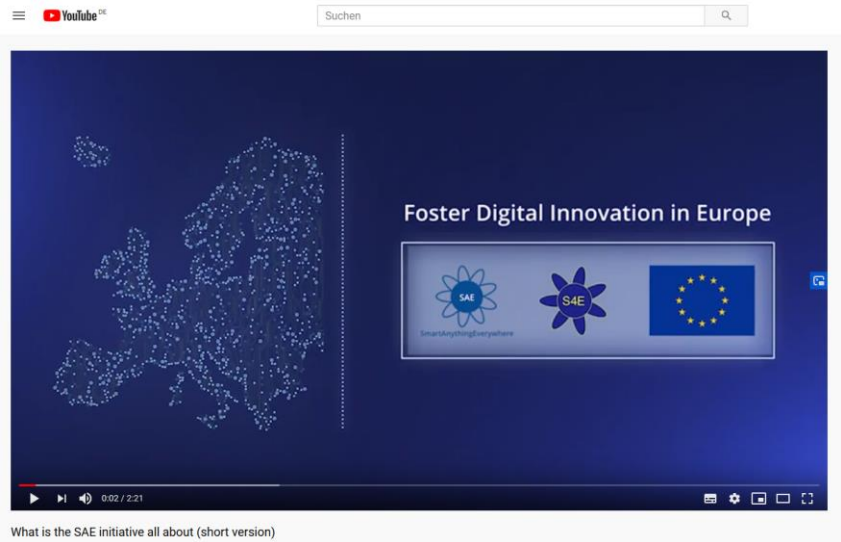
Dissemination Activities 2/3

- Whats next?
  - Next issue newsletter
  - Update video
  - Update SAE Brochure



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S4E: Highlights of events, fairs and conferences 2017-2019

Booth & session at ICT 2018

Presentation on funding possibilities at DIH Annual Event 2018

European Week for Regions and Cities 2018

SAE booth, speakers corner & impact presentation at EFECS 2018

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Dissemination Activities 3/3

Planned for 2020:

- Cancelled: Sensor & Test, DATE, start-up Europe summit, …
- Likely to be held digitally:
  - PRO-VE 2020 (conference around collaborative networks, September)
  - HiPEAC (14-16 October)
  - EDIH event (November)
  - EFECS (November)
  - ICT2020 (December)
- Continued close collaborations with SAE aligned sister initiative I4MS/ DIHNET etc.
- Events you plan to organize or attend?

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Dissemination Activities

Mentimeter Results

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SAE Market Place

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SAE Market Place

- What features would you like to see in a SAE Market Place (Ranking)
  - SAE DIH Catalogue (offers, services, link to contact)
  - SAE funding opportunities
  - Links to investors
  - SAE trainings, up-skilling, webinars
  - Collaboration space
  - Matchmaking
  - Success stories (of Application Experiments)
  - Calendar of events
  - Other (please put in chat)

Mentimeter link:

https://www.menti.com/

Code: **27 42 89**

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Discussion

Mentimeter Results

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SELFSUSTAINED CROSS-BORDER CUSTOMIZED
CYBERPHYSICAL SYSTEM EXPERIMENTS
FOR CAPACITY BUILDING AMONG EUROPEAN STAKEHOLDERS

SMART4ALL

1st Webinar
MarketPlace & Services

Assistant Prof. Christos Antonopoulos
University of Peloponnese
SMART4ALL Technical Manager

Co-funded by the Horizon 2020 programme of the European Union

DT-ICT-01-2019
Smart Anything Everywhere Area 2

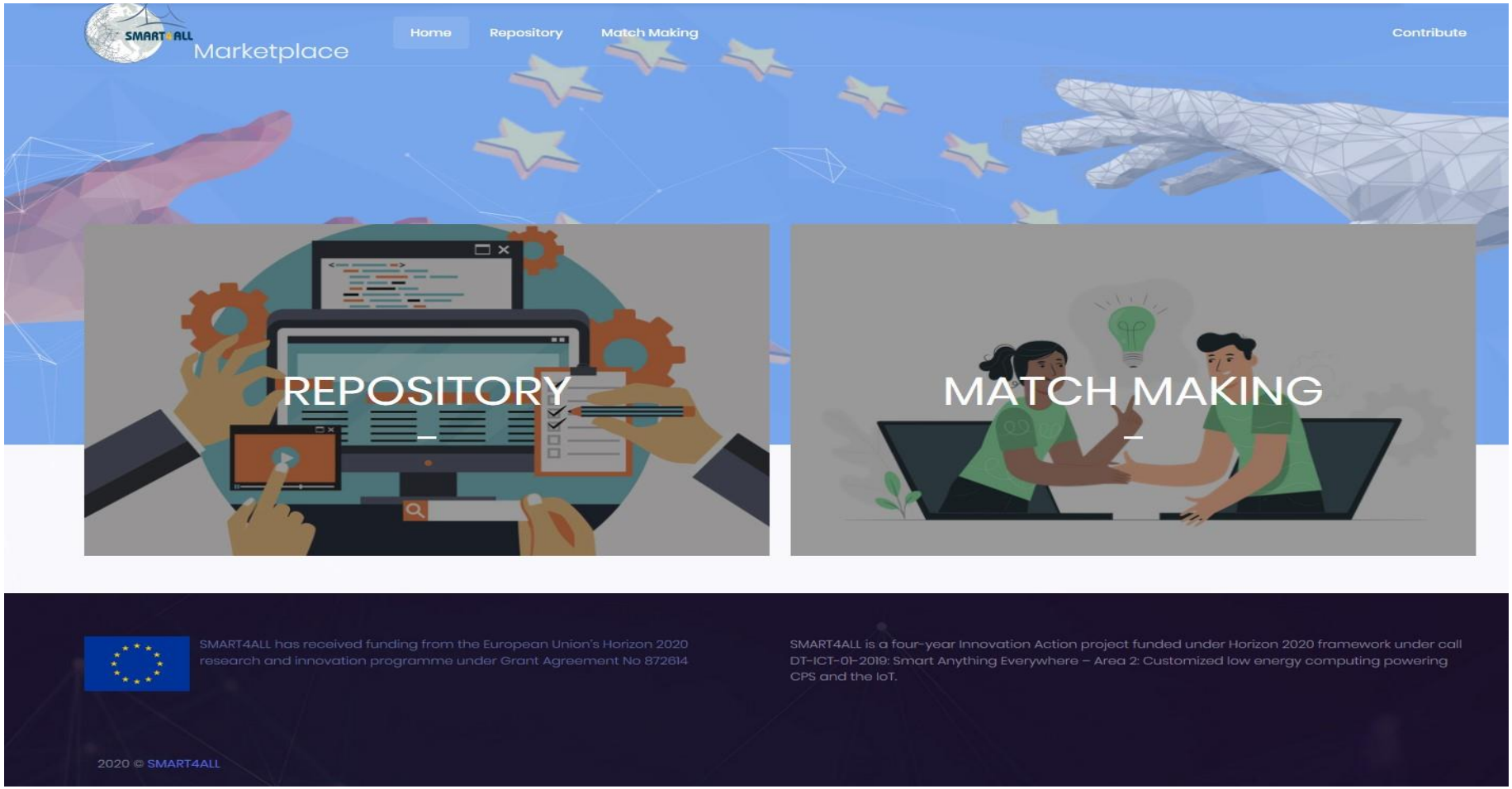
www.smart4all-project.eu
Grant Agreement:

SMART4ALL Marketplace

Marketplace as a Service Concept is one the cornerstones/flagships of Smart4ALL

- **Critical Difference ?** Useful for experts and non-expert a like
- **What is its main target ?** reduce the development time of an startup /SME/mid-cap that is doing business
- **Unique selling point:**
  - Multifaceted matchmaking
  - AI based matchmaking
  - Access to added value services (funding opportunities, coaching, brokerage)

The MarketPlace SW infrastructure



The MarketPlace SW infrastructure

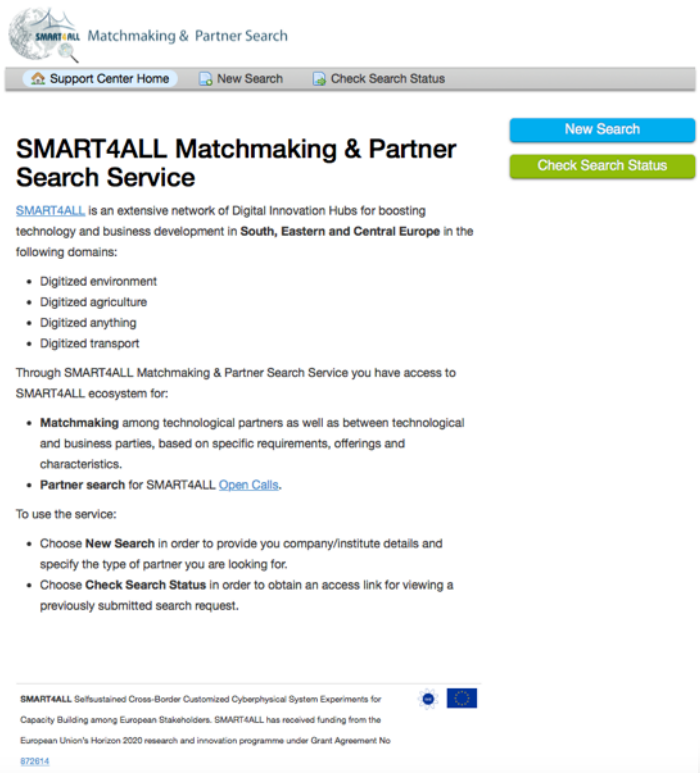
- Enhanced Repository of functionality
  - Tools (VMs, Dockers, SW, IPs etc.)
  - Educational material (tutorials, courses, training, how-to etc.)
  - Events (funding opportunities)
- Novel matchmaking approach
  - Matchmaking not only between partners but between organization and
    - Tools, Educational material, Events
- Showcase the golden examples as roadmaps
- Facilitate contributions
  - Access to a wide audience

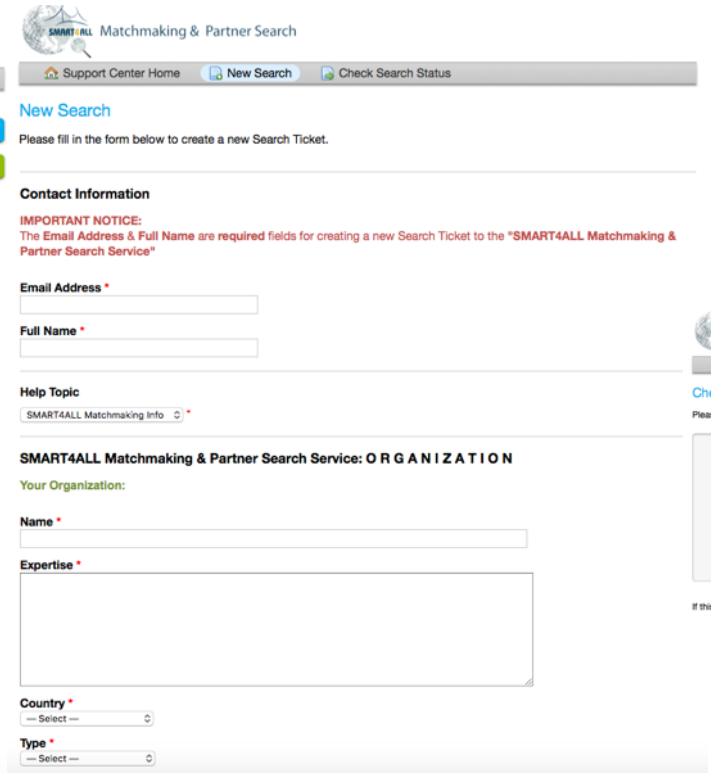
The MarketPlace SW infrastructure

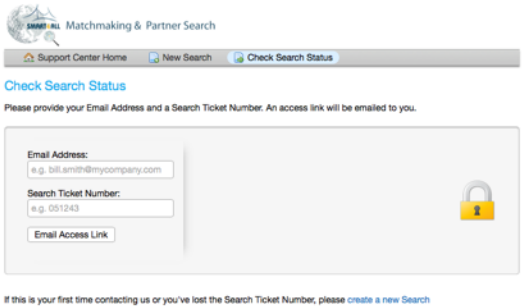
Critical Requirement: Flexible Extendible artefact Data model

SMART4ALL Tools – Matchmaking Service

https://matchmaking.smart4all-project.eu

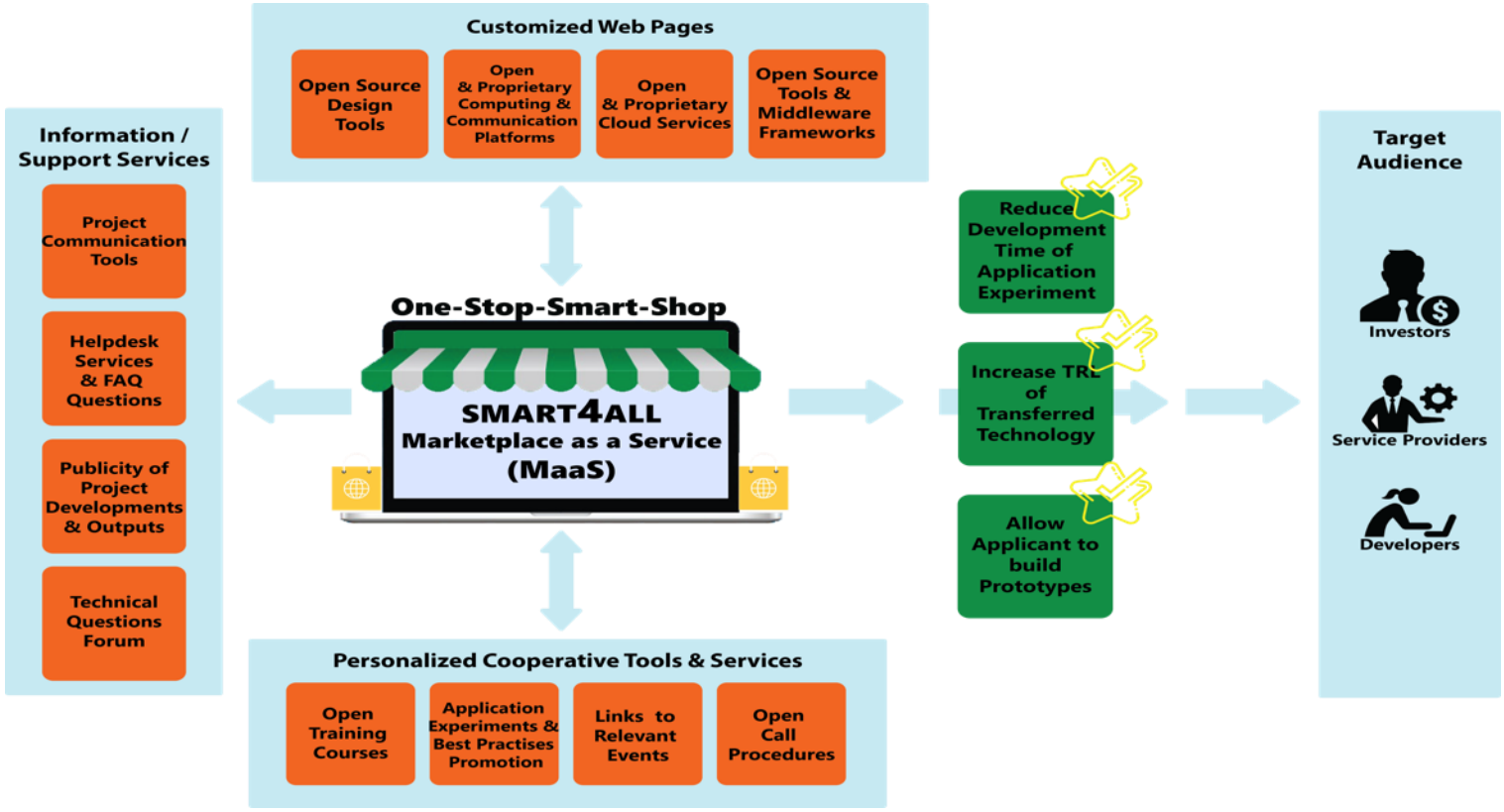






Thank you for your attention – Questions?

SMART4ALL Marketplace (backup)



Discussion

Mentimeter Results

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Discussion

- Digital Maturity Check
- Gender – how to promote female participation in Application Experiments and SAE

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Sustainability

Different levels of Sustainability

- SMEs after SAE Application Experiments
- Individual DIHs
- Innovation Actions (or networks of such)
- SAE Initiative Sustainability

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European Initiative

Smart Anything Everywhere

Horizon 2020 Programme

SAE Collaboration Meeting
July 8th 2020

Olivia UGUEN, BLUMORPHO

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Reminder : Smart4Europe missions

- **Strengthen the SAE community**
- **Support to SAE community members**
  - Organize the discussion on specific challenges faced in their activities
  - Address them in a collective way.

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Support to SAE community members

- **Sustainability is one of this challenges**

- **It has to be addressed at various level:**
  - SMEs & Midcaps benefiting from the SAE initiative community support
  - Each IA
  - The SAE community

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Support to SAE community members

- **What we did/have to do to tackle those challenges ?**

  - Exchange on your development status to prepare your project sustainability
  - The main challenges you are facing
  - The issues you would expect the SAE group dynamic to support each and every IA.

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Support to SAE community members

- **What we did/have to do to tackle those challenges ?**

- In Smart4Europe (ended in 2019):

  - Collaborative workshops
    - 2.6 Benchmarking and sustainability plan
    - 5.5 Recommendations on implementation of sustainability of DIH

  - Support in access to private investors

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Support to SAE community members

- **What we did/have to do to tackle those challenges ?**

- In Smart4Europe2 (started January 2020):
  - Brokerage activities

  - Support in access to private investors:
    - 2020 SAE contest award
    - 2021 DEI Showcase event for investor

  - Development of sustainable business to foster IAs pan-European collaboration

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Sustainability of IAs

&

Smart Anything Everywhere network

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How to position SAE ecosystem in the European Innovation ecosystem?

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How to position SAE ecosystem in the European Innovation ecosystem?

EU Innovation policies

European Commission

European Investment Bank

EUROPEAN INVESTMENT FUND

Industrials and Corporate investors at European level

SAE

Smart Anything Everywhere

FED4SAE

tetramax

diatomic

SmartEEs

DigiFed

SMART4ALL

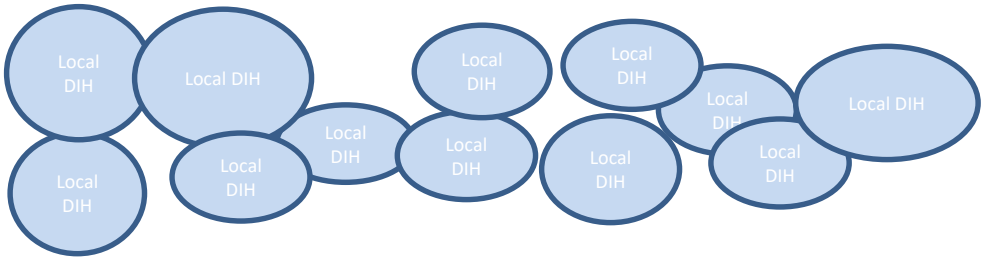
DiH4CPS

HUBCAP

BWI

SmartEEs

Regional Innovation activities



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ACTION TO REINFORCE
ACCESS TO PRIVATE INVESTMENT
For companies supported by IAs part of SAE

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Support to SAE community members

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Horizon 2020 Programme

Smart Anything Everywhere Contest Award 2020

This contest aims to award the most promising companies among the Smart Anything Everywhere community.

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Smart Anything Everywhere Contest Award

Why?

Give visibility to the most promising innovative companies having benefited from the SAE Innovation actions' technical & business support.

What?

- Invitation at INPHO Venture Summit for high visibility towards private investors
- Invited to pitch at INPHO Venture Forum
- Communication at European level / press release

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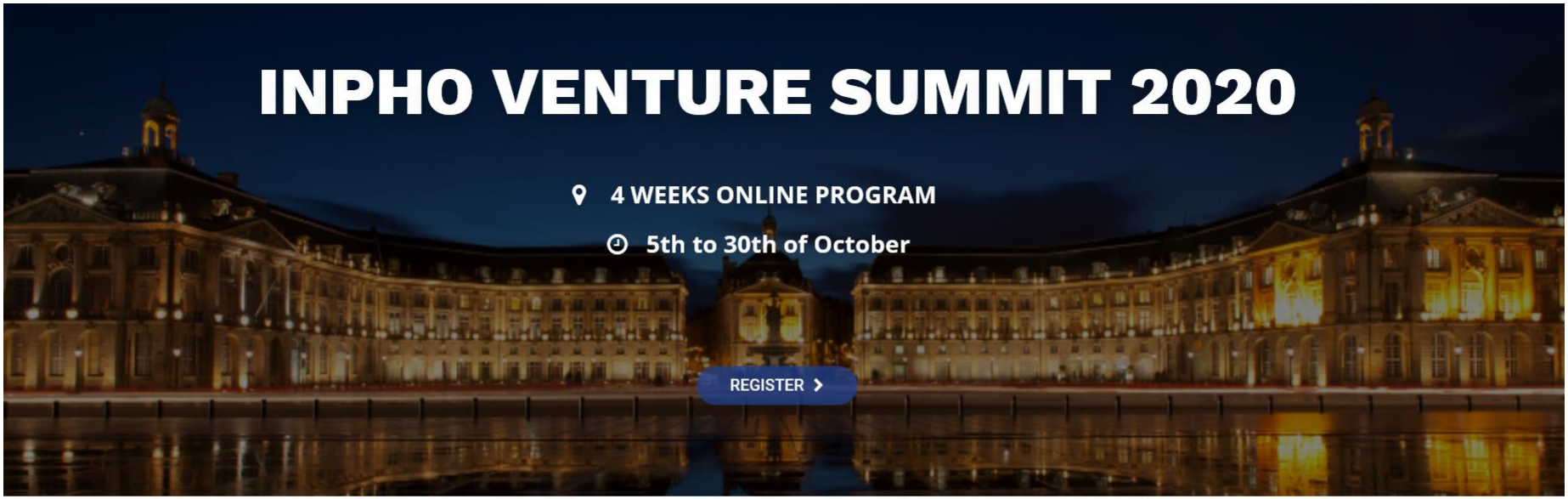

Where investors and corporates meet to invest and shape the future

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Smart Anything Everywhere Contest Award

Who can participate?

All companies having benefited from the SAE Innovation Actions' technical & business support.

How?

- Promotion of the contest on S4E website

- An application form is available on the SAE contest award webpage:

https://www.blumorpho.com/smart-anything-everywhere-contest-award-2020.html

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Smart Anything Everywhere Contest Award

Who will evaluate? Investors, VC & business Angel panels

Aymeric Renard
General Partner
Hardware Club

Eric Benhamou
Founder
Benhamou Global Ventures

François Tison
General Partner
360 Capital Partners

Christian Reitberger
General Partner
BtoV

Klaus Kummermerh
Board member
Go Beyond Investing

Heribert Uhl
Senior Investment Director
Bosch Venture

Jean Gabriel Boinot Tramoni
Associate
Quantonation

Dieter Kraft
Managing Director
Trumpf Venture

Paul Thurk
Managing Director
Arch Ventures

George Ugras
Managing Director
AV8 Ventures

Daniel Häring
Board member
Go Beyond Investing

Nicolas Leterrier
Customer Innovation & OE
Labs global VP
Schneider Electric

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What are the evaluation criteria?

The key success factors to attract private investors interest:

- Market attractiveness
- Value proposition
- Business models
- Technical Differentiation
- Strength of the team

When?

The winner of the SAE Contest Award will be announced during the 7th edition of the INPHO Venture Forum and will be invited to enter into discussion with investors.

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Offer this opportunity to your beneficiaries:

- Share the information and invitation to join to all supported third parties

https://www.blumorpho.com/smart-anything-everywhere-contest-award-2020.html

- Application till 28th August 2020
- All applicants will be evaluated by investors and will receive feedback by investors

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Is it ok for everybody?

Any questions?

Thank you for your attention!

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Contact Details

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Innovation Ecosystem & European community building

BLUMORPHO

uguen@blumorpho.com

www.blumorpho.com

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Sustainability

SAE SUSTAINABILITY

Rainer Leupers (RWTH Aachen / Tetramax)

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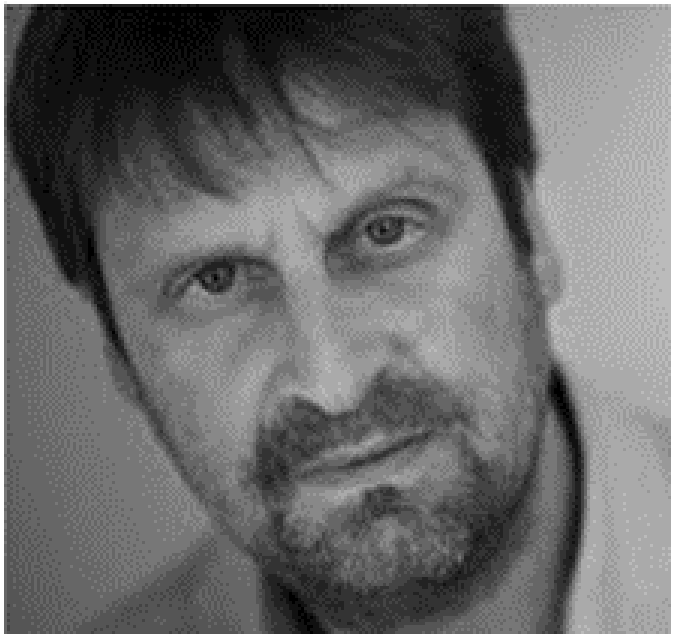
Common Reference for Collaboration

SmartAnythingEverywhere

Isabelle & Jerome (CEA / Smart4Europe2)

- Outcomes of the Survey



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European Initiative

Smart Anything Everywhere

Horizon 2020 Programme

WP2 - Collaboration within the SAE Initiative

Common Reference for collaboration

08/07/2020

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Key Digital Technologies

SmartAnythingEverywhere

	PHASE 1				PHASE 2				PHASE 3						
	Gateone	Smarter-SI	EuroCPS	CPSE-Labs	DIATOMIC	FED4SAE	TETRAMAx	SmartEEs	BOWI	DIGIFED	DIH4CPS	HUBCAP	SMART4ALL	SmartEEs-2	
Cyber-physical and embedded systems	x		x	x		x	x		x	x		x	x		9
Customised low energy computing powering CPS						x	x		x	x			x		5
IoT	x		x	x	x	x	x		x	x			x		9
Organic and Large Area Electronics (OLAE)								x	x						2
Flexible and Wearable Electronics (FWE)									x					x	2
Advanced micro-electronics components	x	x	x		x	x			x				x		7
Smart System Integration	x	x	x		x	x				x					6
Other	x			Software and Systems Engineering					modelling and simulation, advanced high performance computing			Software and Systems engineering (model-based)	Ambient assisted living		5

- Can be displayed on S4E website as a KDT technology radar
- Can help structuring topic-centric collaboration

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DIHs network cohesion (1/3)

	PHASE 1			PHASE 2				PHASE 3							
	Gateone	Smarter-SI	EuroCPS	CPSE-Labs	DIATOMIC	FED4SAE	TETRAMAX	SmartEEs	BOWI	DIGIFED	DIH4CPS	HUBCAP	SMART4ALL	SmartEEs2	
Gateone		H/H	H/L	H/H	No/No	H/H	No/L	H/H	No/L	H/L	No/	No/No	No/No	H/H	Gateone
Smarter-SI			H/L	H/L	H/No	H/H	H/L	H/H	H/No	H/No	H/	H/No	H/No	H/L	Smarter-SI
EuroCPS				H/H	No/No	H/H	No/L	L/H	No/No	L/L	No/	No/L	No/L	No/L	EuroCPS
CPSE-Labs					No/No	H/H	No/L	L/L	No/No	H/No	No/	H/H	No/No	L/L	CPSE-Labs
DIATOMIC						L/L	L/H	L/L	No/L	No/No	No/	H/No	L/L	L/L	DIATOMIC
FED4SAE							L/H	H/H	L/No	H/H	L/	L/L	L/L	H/H	FED4SAE
TETRAMAX								H/L	L/H	L/No	L/	L/No	L/H	L/L	TETRAMAX
SmartEEs									L/H	H/H	No/	No/No	No/No	H/H	SmartEEs
BOWI										L/No	No/	L/No	H/No	H/L	BOWI
DIGIFED											No/	L/No	No/No	H/H	DIGIFED
DIH4CPS												/No	/No	/L	DIH4CPS
HUBCAP													No/No	No/No	HUBCAP
SMART4ALL														No/No	SMART4ALL
SmartEEs2															SmartEEs2

PHASE 1: Gateone, Smarter-SI, EuroCPS, CPSE-Labs
PHASE 2: DIATOMIC, FED4SAE, TETRAMAX, SmartEEs
PHASE 3: BOWI, DIGIFED, DIH4CPS, HUBCAP, SMART4ALL, SmartEEs2

COHESION (H/H; H/L; L/H)
LOW COHESION (L/L)
NO COHESION (L/No; No/L; No/No)
UNCLEAR (Mismatch)

Clarify the blue boxes

- Low cohesion within Phase 3 and more IAs, including a cross-cutting IA
- One IA not connected

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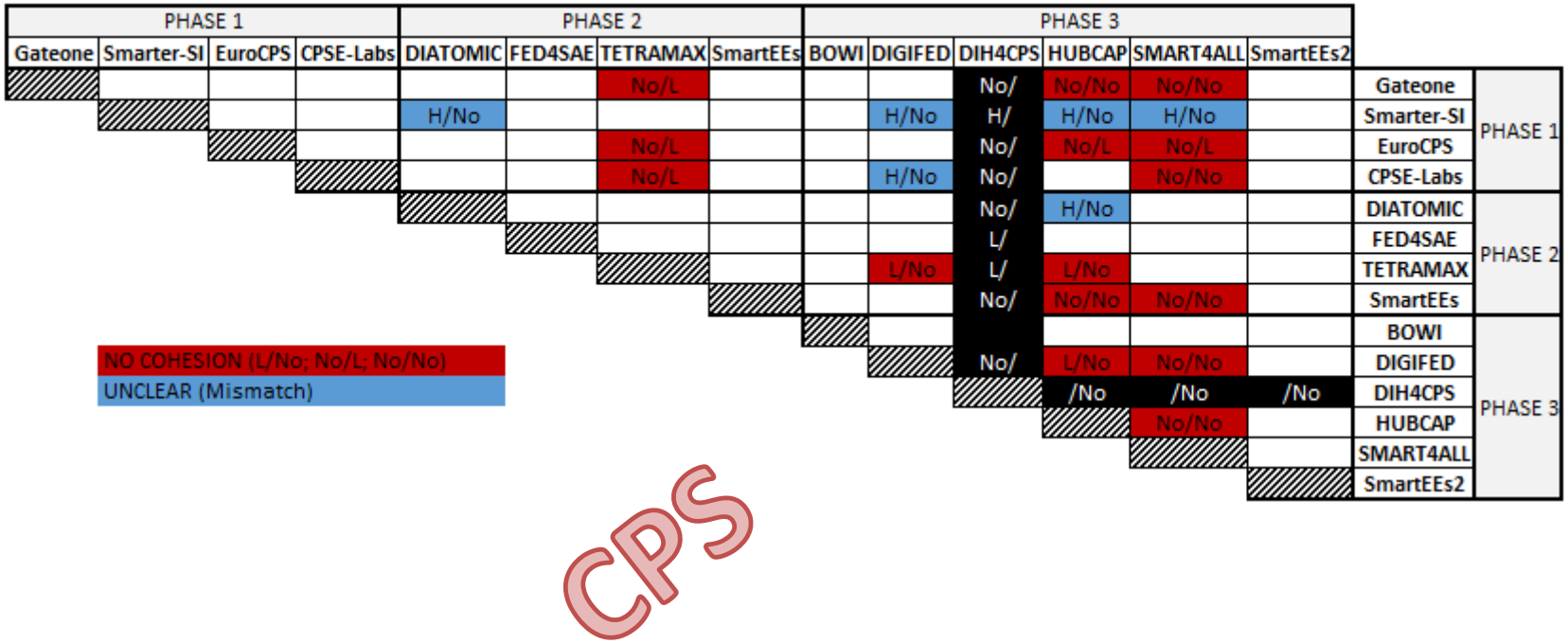
DIHs network cohesion (2/3)

Increase cohesion by KDT topic (e.g. 6 IAs on CPS)



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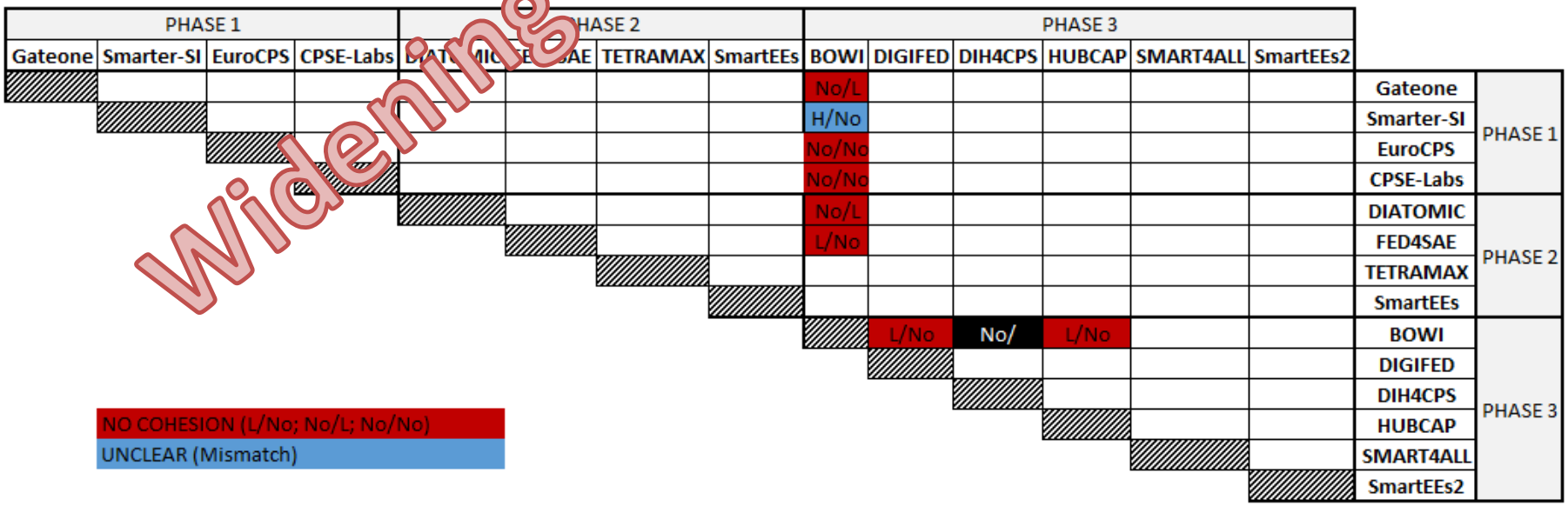
DIHs network cohesion (2/3)

SmartAnythingEverywhere

Widening all KDT topics to EU28/EU13



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DIH Stakeholders

		PHASE 1				PHASE 2				PHASE 3						High	No
		Gateon	marter-	uroCP	PSE-La	IATOMI	ED4SA	ETRAMA	martEE	BOV	IGIFE	IH4CP	UBCA	MART4A	martEEs		
AUTHORITIES	EC	H	H	H	H	H	H	H	H	H	H		L	No	H	11	1
	Reg/Nat	No	H	x	L	H	L	L	No	H	H		H	No	H	6	3
	Other	x	x	x	x	x	x	x	x	x			x	x	x	0	0
RESEARCH	RTO	H	H	H	H	H	H	H	H	H	H		H	H	H	13	0
	Universities	H	H	H	H	H	H	H	No	H	H		H	H	L	11	1
	Private labs	No	L	L	L	H	L	H	No	H	No		L	No	L	3	4
	Other	x	x	x	x	x	x	x	x	x			x	x	x	0	0
EDUCATION	Universities	No	H	x	H	L	H	H	No	No	L		H	H	No	6	4
	Academics of applied sciences	No	H	x	H	L	H	No	No	No	L		H	H	L	5	4
	Vocational training	No	L	x	L	L	H	No	No	No	L		L	H	H	3	4
	Private training	No	L	L	No	L	L	No	No	No	No		No	No	L	0	8
	Other	x	x	x	x	x	x	x	x	x			H	x	x	1	0
INVESTORS	Public	L	H	L	H	L	H	L	H	L	H		H	H	H	8	0
	Private	H	H	H	L	H	H	H	H	L	H		L	H	H	10	0
	Other	x	x	x	x	x	x	x	x	x	x		x	x	x	0	0
LARGE COMPANIES	Tech provider	L	H	H	H	H	H	L	No	L	H		H	No	H	8	2
	Services provider	No	L	No	H	H	No	H	No	L	No		L	No	H	4	6
	Other	x	x	x	ems integ	x	x	x	x	x		System integrators			x	0	0
SERVICES ORGANIZATI	Incubators/Accelerators	No	H	No	L	H	L	L	No	No	L		L	H	L	3	4
	Clusters and industry associations	No	H	L	H	H	H	L	L	H	H		H	L	H	8	1
	DIH	No	H	L	H	H	H	H	L	H	H		H	H	H	10	1
	Other	x	x	x	x	x	x	x	x	x			x	x	x	0	0
SMES (incl. start-ups) &	Tech provider	No	H	L	H	H	H	L	No	L	H		H	H	H	8	2
	Services provider	No	H	No	H	H	L	H	No	L	L		H	H	H	7	3
	Innovative company	H	H	H	H	H	H	H	H		H		H	L	H	11	0
	Other		x	x	x	x	x	x	x				x	x	x		

High relevancy
Low relevancy
No relevancy
No response

- **Main SAE stakeholders** (score≥8) = EC / RTOs / Universities / Private investors / Clusters & industry associations / DIH / Tech providers / Services provider / Innovative companies
- Make a common repository? Implement this repository on S4E2 marketplace?

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Sectors of Applications

	PHASE 1				PHASE 2				PHASE 3						High	No
	Gateone	Smarter-SI	EuroCPS	CPSE-Labs	DIATOMIC	FED4SAE	TETRAMAX	SmartEEs	BOWI	DIGIFED	DIH4CPS	HUBCAP	SMART4ALL	SmartEEs2		
(AERO)SPACE	L	L	L	L	x	L	No	L	Focus is on manufacturing SMEs and midcaps, not application driven	L		L	H	L	1	1
BUILDING / CONSTRUCTION	H	H	H	L	x	H	H	H		H		H	No	H	9	1
CONSUMER ELECTRONICS	H	L	H	No	x	H	H	H		H		No	L	H	7	2
DIGITAL MANUFACTURING	H	H	L	H	H	H	H	L		H		H	L	L	8	0
ENERGY	H	L	H	H	x	H	H	H		H		L	L	H	8	0
ENVIRONMENT	H	H	H	L	x	H	H	L		H		L	H	L	7	0
FOOD & AGRICULTURE	H	H	H	H	H	H	H	H		H		H	H	H	12	0
IOT/SMART CONNECTED OBJECTS	H	H	H	H	H	H	H	H		H		H	H	H	12	0
MEDICAL / PHARMACEUTICAL / LIFE SCIENCE / HEALTH	H	H	H	No	H	H	H	H		H		L	L	H	9	1
NATURAL RESOURCES	No	H	No	L	x	No	L	No		No		No	L	No	1	7
PACKAGING / LOGISTICS	H	H	No	No	x	No	No	H		No		No	No	H	4	7
SAFETY / SECURITY	H	H	L	H	x	L	H	L		H		H	L	L	6	0
TRANSPORT / MOBILITY / AUTOMOTIVE	H	H	H	H	x	H	H	H		H		H	H	H	11	0
OTHER(S)	?	x	x	Smart City/urban environments	x	x	x	x				x	x	x		

High relevancy
Low relevancy
No relevancy
No response

- Can be displayed on S4E website as a sectorial radar
- Map all *Application Experiments* across sectors to set the overall **SAE sectorial window**

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Products functionality enabled by KDTs

SmartAnythingEverywhere

	PHASE 1				PHASE 2				PHASE 3						High	No
	Gateone	Smarter-SI	EuroCPS	CPSE-Labs	DIATOMIC	FED4SAE	TETRAMAX	SmartEEs	BOWI	DGIFED	DIH4CPS	HUBCAP	SMART4ALL	SmartEEs2		
ACTUATING	H		H	H	H	H	L	H	BOWI is focused on widening DIHs active in SAE/I4MS, not technology push, development, etc.	H		No	H	H	9	1
COMMUNICATING	H		H	H	H	H	L	H		H		H	L	H	9	0
COMPUTING / PROCESSING / DATA STORAGE	H		H	H	H	H	H	L		H		H	H	L	9	0
ENERGY HARVESTING / CONVERSION / STORAGE	H		L	L	H	L	H	H		L		No	No	H	5	2
SENSING	H		H	H	H	H	H	H		H		H	H	H	11	0
SIGNALLING (OPTICAL IMAGING, LIGHTING)	H		H	No	L	H	H	L		H		No	L	L	5	2
OTHER(S)	x		x		x	x	x	x					x	x		

High relevancy
Low relevancy
No relevancy
No response

- Can be displayed on S4E website as a KDT technology radar
- Map all *Application Experiments* across functionalities to set the overall **SAE product capability window**

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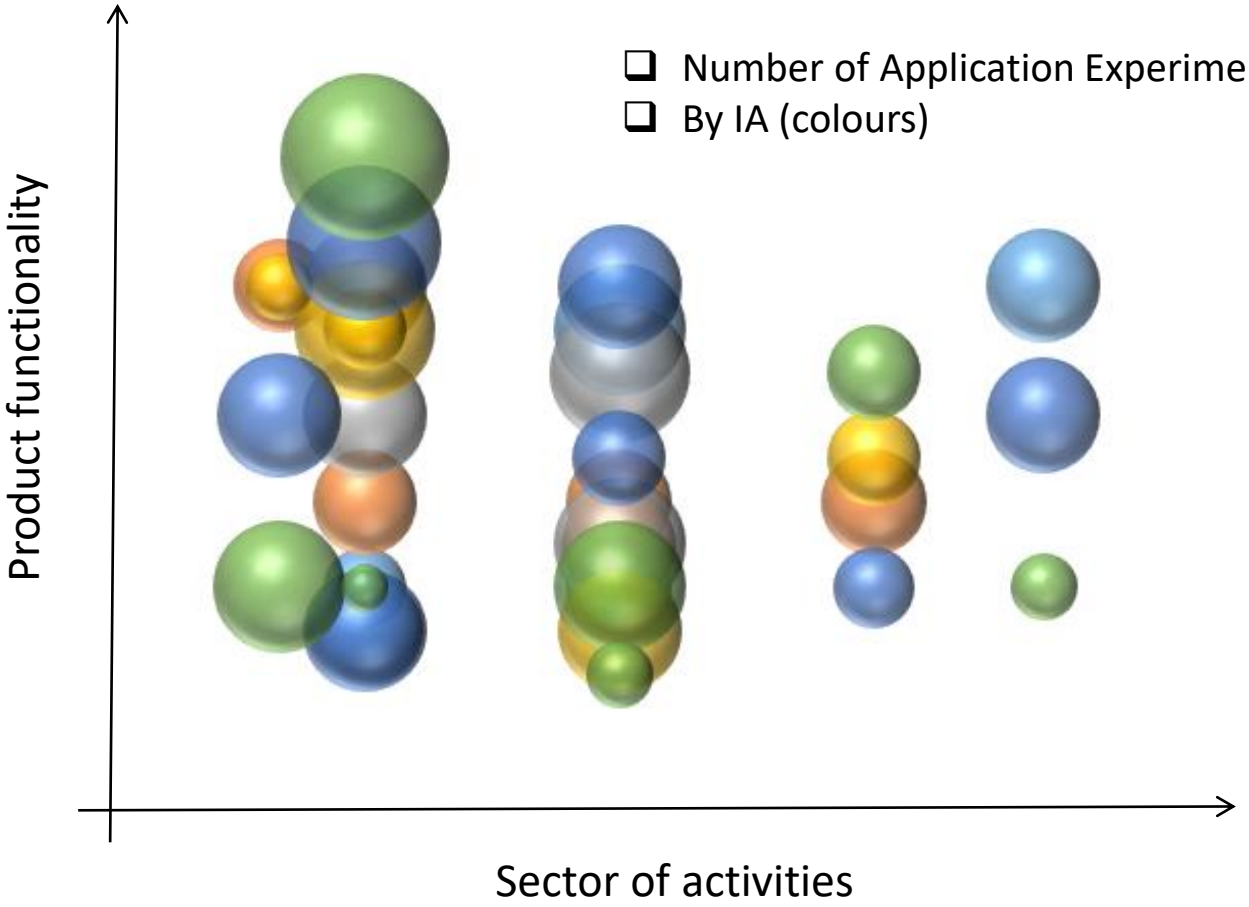
Crossing sectors and product functionality



- Number of Application Experiments (size)
- By IA (colours)

- Guiding SMEs to find the right IA door

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DIH Operation models

	PHASE 1				PHASE 2				PHASE 3						
	Gateone	Smarter-SI	EuroCPS	CPSE-Labs	DIATOMIC	FED4SAE	TETRAMAx	SmartEEs	BOWI	DIGIFED	DIH4CPS	HUBCAP	SMART4ALL	SmartEEs2	
Outreach strategy	x	x	x		x	x	x	x	x	x		x	x	x	12
Open Call	x		x	x	x	x	x	x	x	x		x	x	x	12
Market Place	x	x			x		x					x	x	x	7
Other: training and skills development				x						x		x	x	x	5
Other: experimentation				x				x				x	x	x	5

- Collaborate on EU28/EU13 outreach strategy with BOWI (linked to lessons learnt)
- Collaborate on Open Call (linked to lessons learnt)

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Lessons learnt

	PHASE 1				PHASE 2				PHASE 3						High	No
	Gateone	Smarter-SI	EuroCPS	CPSE-Labs	DIATOMIC	FED4SAE	TETRAMAX	SmartEEs	BOWI	DIGIFED	DIH4CPS	HUBCAP	SMART4ALL	SmartEEs2		
[DIH] COMMUNICATION & DISSEMINATION	No	H	H	H	H	H	H	L	H	H		H	H	L	10	1
[DIH] SERVICES	No	H	H	H	H	H	H	H	H	H		H	L	H	11	1
[DIH] ECOSYSTEM	No	H	L	H	H	H	H	H	H	H		H	H	H	11	1
[DIH] MARKETPLACE	No	H	No	H	H	L	H	L	No	No		H	H	L	6	4
[DIH] EXPLOITATION & SUSTAINABILITY	No	H	H	H	H	H	H	H	H	H		H	H	H	12	1
[OPEN CALL] SME/MIDCAP OUTREACH	No	L	L	H	H	L	H	H	H	H		H	H	H	9	1
[OPEN CALL] EVALUATION & SELECTION	No	L	H	H	H	H	H	H	L	H		H	L	H	9	1
[APPLICATION EXPERIMENTS] CONTRACTING	No	L	H	H	H	H	H	H	L	H		H	H	H	10	1
[APPLICATION EXPERIMENTS] EXECUTION	No	H	H	H	H	H	H	H	L	H		H	H	H	11	1
[APPLICATION EXPERIMENTS] FOLLOW-UP	No	H	L	H	H	H	H	H	L	H		H	H	H	10	1
OTHER(S)	x	x	x	x	x	x	x	x	x			x	x	x		

High relevancy
Low relevancy
No relevancy
No response

- ❑ Start compiling lessons learnt from Phases 1 & 2 DIHs
- ❑ Dedicate a workshop to this topic / Sharing lessons & recommendations

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Outreach & open calls

- To share a board of evaluators
- To map DIH stakeholder companies (open calls)
  - (Innovative) companies
    Start-up / SME (<10, 10-50, < 250) / Mid-cap (250-3000)
  - Countries
  - Digital maturity level
- To share open call good practices (open call promotion)
  - DIH networking
  - Social media
  - Website
  - SAE innovation portal
  - IA market place
  - Gender equality

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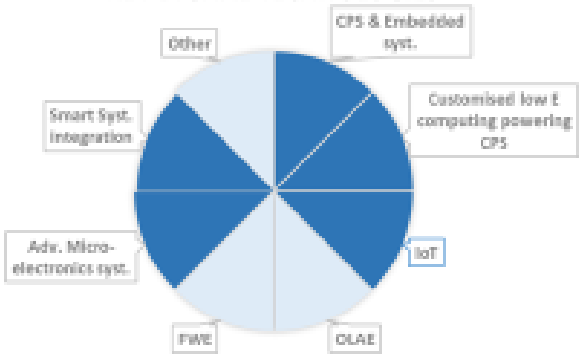
Project fact file

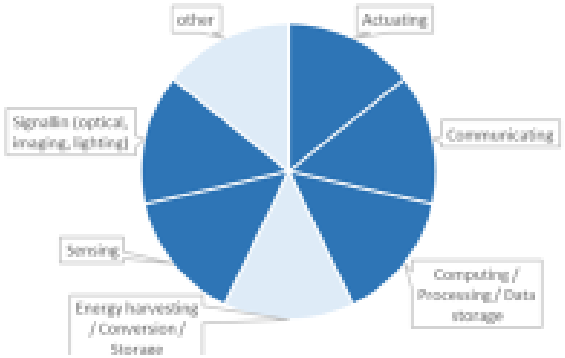
FED4SAE (2017-2021)

Accelerating EUROPEAN CPS Solutions to Market

KEY DIGITAL TECHNOLOGIES

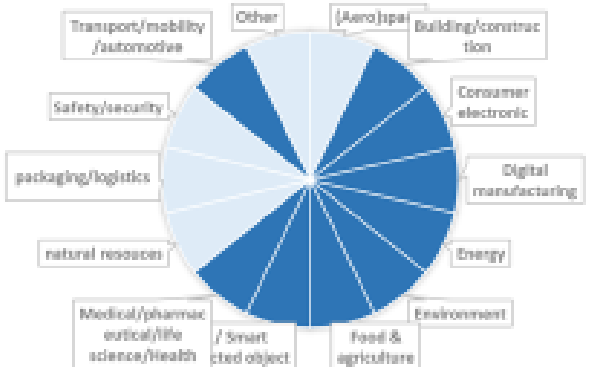


PRODUCTS FUNCTIONALITY enabled by KDTs



- 3 open calls
- 32 granted AEs with FED4SAE partners
- Cascade funding, technology & Innovation management support
- https://fed4sae.eu/

SECTORS OF APPLICATIONS



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Collaboration tasks proposals

- HIPEAC CSW week
  - Tampere, 14-16 Octobre 2020
  - SAE session
  - Already planned for the CSW week, April 2020 – 90’ session, preliminary agenda:
    - Policy background / DEI Initiative / DIH /DIH network / DIH in HE (short)
    - Introduction SAE Initiative (how to participate - what's in for SMEs, what's in for DIH / criteria and projects to become a DIH)
    - Smart4Europe2 - how the CSA supports the network
    - DigiFed / Fed4SAE (ID), Smart4All (Nikos), Tetramax? (Koen?) (from RTO and SME side - incl success stories presented by IAs)
    - Cross-cutting themes
  - Proposal for Fall event
    - Based on Spring preliminary agenda
    - Possibility of have two 90’ sessions with additional inputs from new IAs and their open calls

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Future SAE Technologies

Mentimeter Question

Which are the new technologies relevant for SAE

Mentimeter link:
https://www.menti.com/
Code: **27 42 89**

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INTRODUCTION

Haydn Thompson (Thhink / Smart4Europe2)

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Future Technologies

'Advanced Technologies for Industry - novel insights into the electronics industry

Morten Rasmussen (Technopolis)

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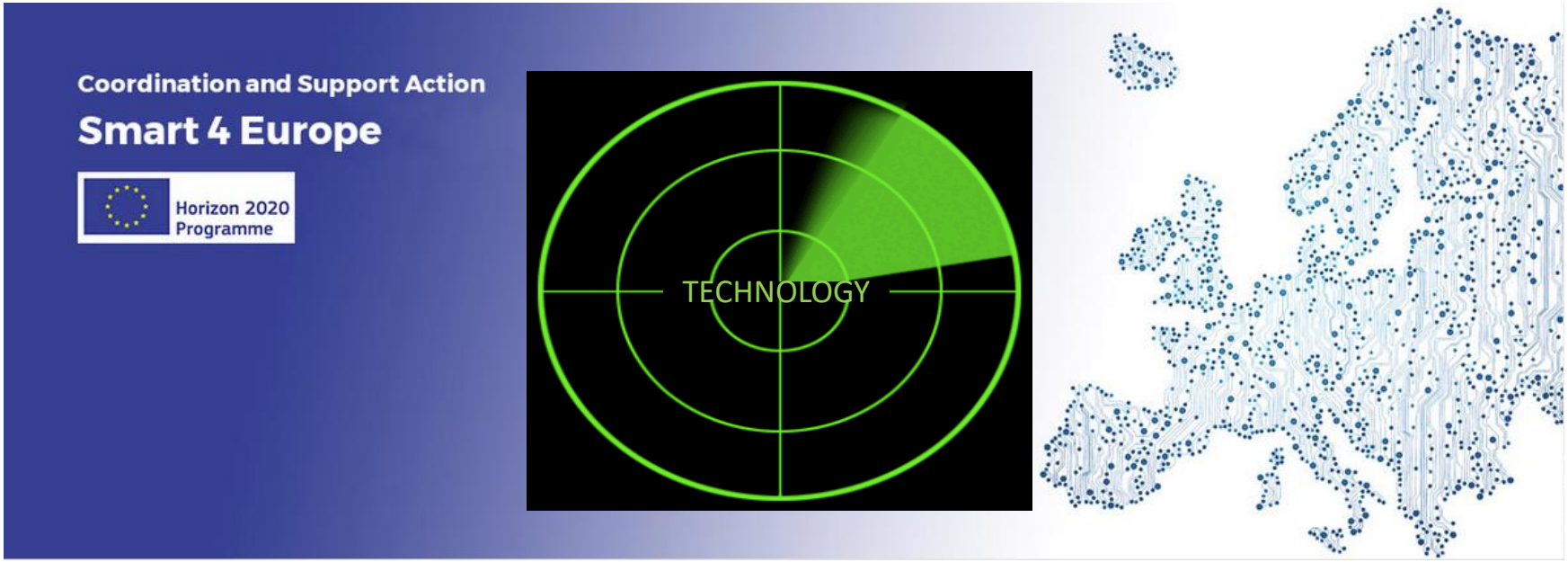
Technology and Innovation Radar



Haydn Thompson
THHINK

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Why?

- SMEs and Mid-Caps struggle to keep track of new technologies that may be important to their business in the short, medium and long term
- Aim to provide a useful reference for the SAE community highlighting up and coming technologies that SMEs and Mid-Caps can exploit, as well as the current maturity of these technologies
- The radar has evolved over three years with input from desk research, questionnaires and workshops

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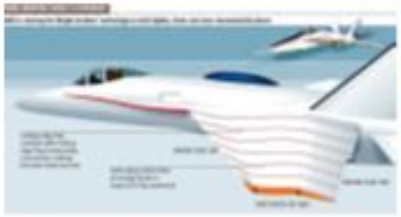
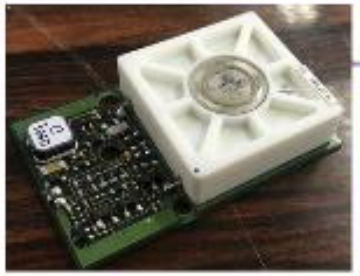
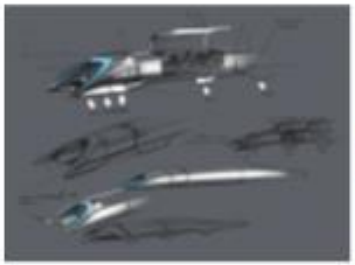
Future Technologies (Examples)



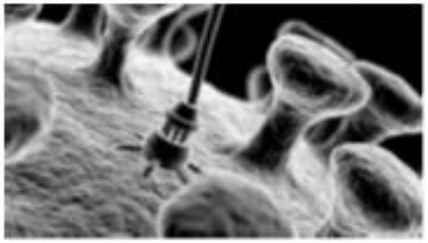


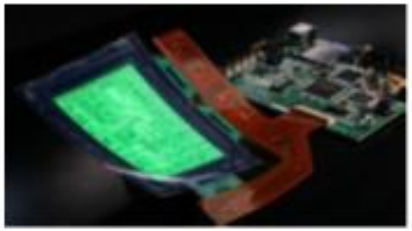










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Technologies and Innovations (139)

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Robotics
Additive Manufacturing S
Adaptive manufacturing combining 3D printing, machine learning and robotics M
Exoskeletons M
Assistive Robots M
Cobots M
Self-reconfiguring robotic systems M
Industry X.0 M
UAVs S*
Autonomous Seagoing Platforms S
Remotely Operated Vehicles, Autonomous Submersibles and Underwater Gliders S
Autonomous Driving L
Mobility Solutions L
Hyperloop - 760mph trains M
Hoverbike M
Flying car L
Autonomous Ships L

Artificial Intelligence
Machine Learning M
Convolution Neural Networks for Image Recognition S
Deep Data Mining M
Reinforcement Learning S*
Precision Medicine Exploiting AI and Biometrics M
Self-Diagnostic Medicine M
Ambient Intelligence (AmI) M
Natural Language Processing M
Neuromorphic Computing L

Energy Harvesting
Solar Harvesting S
Solar Roof Tiles S
Supercapacitor Technology S
Thermal Energy Harvesting S
Energy-Harvesting Floors S
Vibration Energy Harvesting M
Flywheel Energy Storage (FES) M
Hot Solar Cells M
Electricity Generating Fabric M
Wireless Energy Transfer S
Artificial Photosynthesis L
Mini and Micro Wind Turbines S
Tidal Power L

HMIs
Voice Assistants S
Chatbots S
Virtual Assistants S
Smart Mirror S
Face Recognition S
Emotion Recognition from Imaging S
Emotional Recognition using Facial M and Verbal Expressions
Personalised Recommendations S
Augmented Reality S
Virtual Reality S*
Wireless Display Technology S
Paying With Your Face M
2D to 3D Converting Device M
3D Displays M
3D Gaming M
Eye Tracking M
Non-Touch/Gesture Screens M
Social Television M
Brain Print as a Password L
Neural Interfaces L
Personalities for Robots L

Tools, Platforms and Standards
OneM2M S
RAMI S
SAREF S
OPC-UA S
Design, Modelling and Simulation M-L
Safety Analysis M-L
Software Integration M-L
Testing M-L
Inspection M-L
Dependability M-L
Certification M-L

Data Analytics
Big Data/Analytics S
Digital Twins S
Block Chain S
Bit Coin S
Smart Contracts using NLP and Blockchain M
Cybersecurity S
Secure Processor M
Remote Health Service Provision M
Smart Agriculture M
Hyperspectral Imaging S
LIDAR S
Elderly Monitoring S*
Remote Maintenance S
Smart Surveillance S
Smart Tracking Bar Codes S
RFID S
Long Range RFID S
GPS Tracking S
Wellness Monitoring M
Activity Monitoring S
Sports Monitoring S
FinTech S
Cloud Computing S
5G M
Li-Fi M
Internet for Everyone M
Exascale Computing M
Faster Wireless Connectivity – MIMO Connectivity M
DNA Digital Data Storage L
Quantum Computing L
Quantum Teleportation L

Smart Systems Integration (SSI)
Combinational Sensing S
Micro-actuators S
Nanotechnology S
Micro-Electro-Mechanical Systems (MEMS) S
Microfluidics S
Microsensors S
Quantum Sensing S
Micro-Nano-Bio Systems (MNBS) S*
Micro-Opto-Electro-Mechanical Systems (MOEMS) M
Moulded Interconnect Devices M
Structural Electronics M
More-than-Moore Technologies M
Nanoelectromechanical systems (NEMS) M
Molecular nanotechnology (MNT) L
Flexible Wings L
Embedding Bare Dies into PCBs M
Molecular electronics L

Organic and Large Area Electronics (OLAE)
Plastic Electronics S
Organic Electronic Components L
Integrated Smart Systems S
OLED Lighting S
MicroLED Displays S
OLED Displays S
Reel-to-Reel Processing S
Flexible and OLED Displays M
Organic Photovoltaic (OPV) S*
Aerogels for Insulation M
Solid-State Battery Cells M
Wearable Technologies M
Implantable Technologies M
Artificial Organs L
Organs on a Chip L
Organic Electronics and Components L
Bio Nano Sensor M
Lab on a Chip M
Disposable Paper-Based Transistor L
Graphene L
Atomtronics L

Short introduction for each technology produced so easy to access

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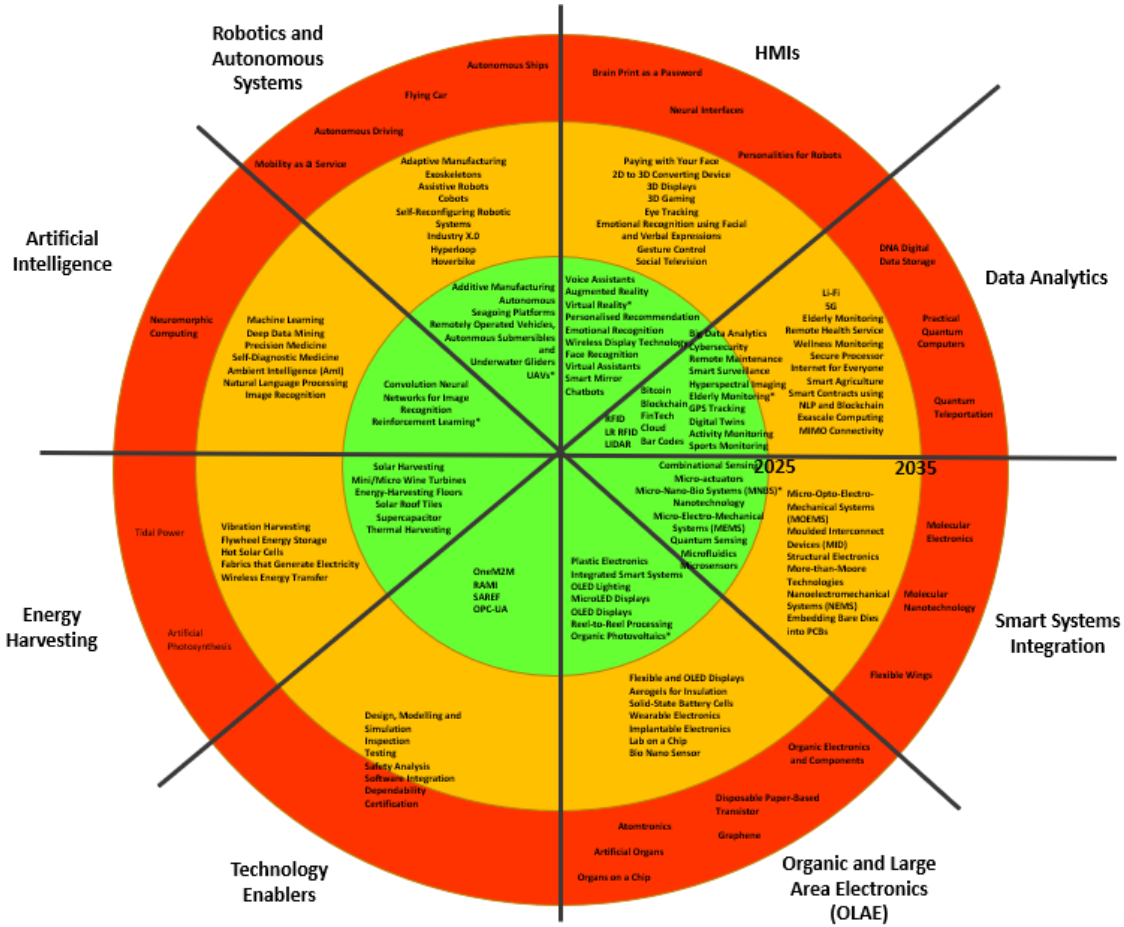
Technology and Innovation Radar

SmartAnythingEverywhere



Green – technologies that SMEs and midcaps can consider to be mature in the short term

Amber - technologies that are coming in the 2025-2035 timescale that SMEs/mid-caps should be aware of for the future and may have an interest in that they may wish to monitor

Red – technologies that are still very immature and should not be considered at this time

Developed as a document but not ideal for online access

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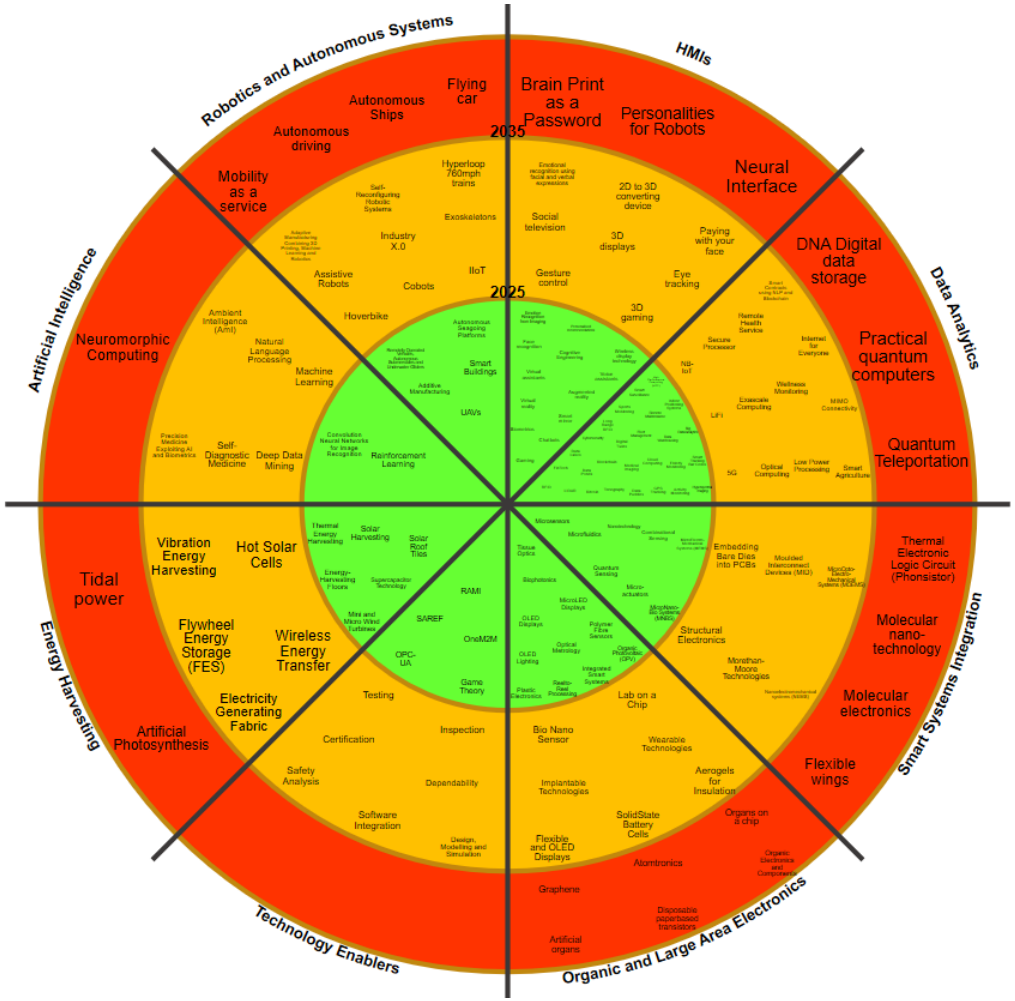
Online Clickable Radar



http://www.thhinkbv.com/

- Developed from original radar
- More technologies added (currently 162 technologies covered).
- Text auto-scaled to fit into wedges
- Can zoom in and out on tablets, mobiles, android devices, etc.
- Clicking on technology brings up short description
- Lot of work to provide compatibility on different devices

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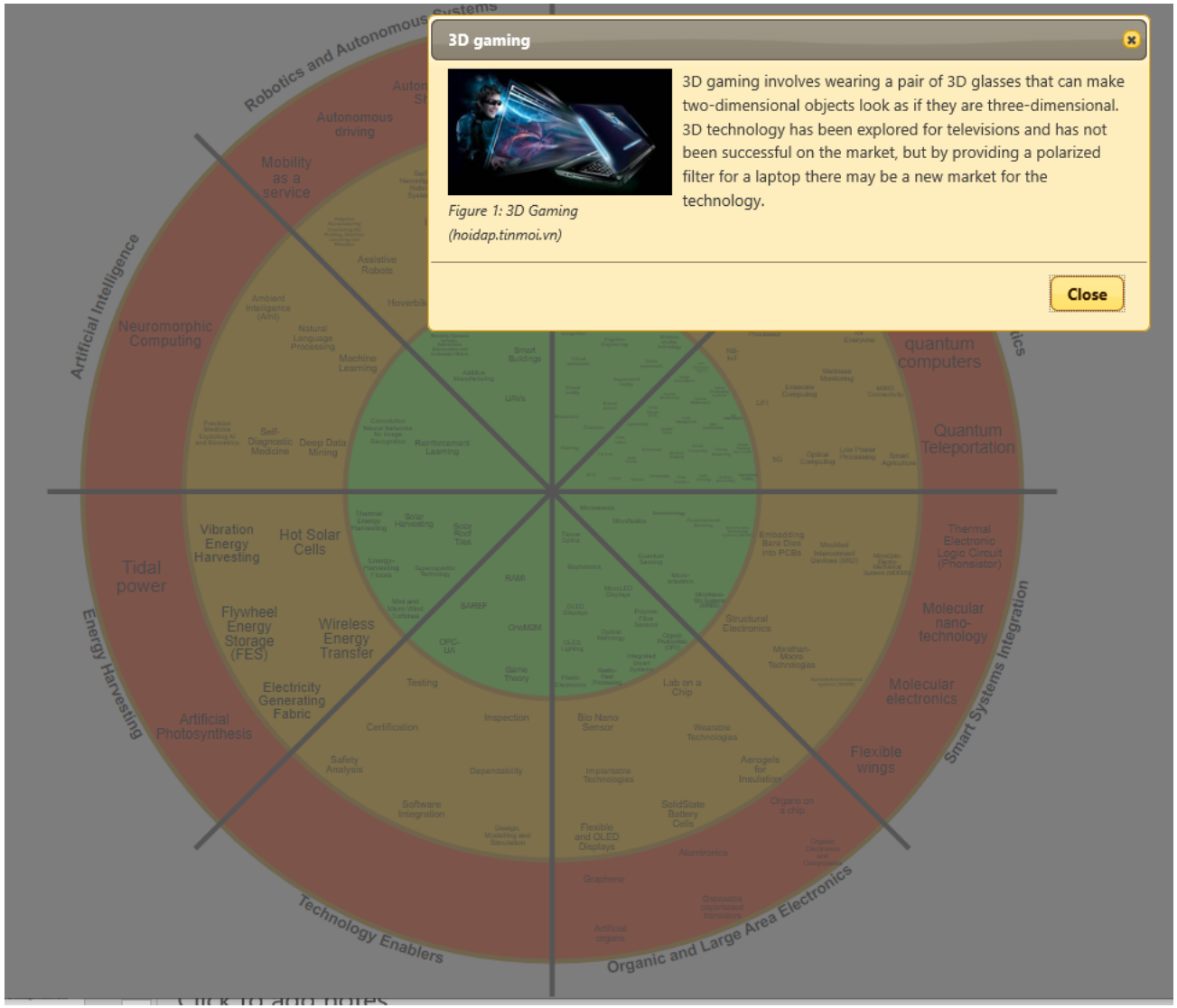
Technology Descriptions



Clicking on topics brings up description window

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New applications in traditional and non-traditional ICT sectors

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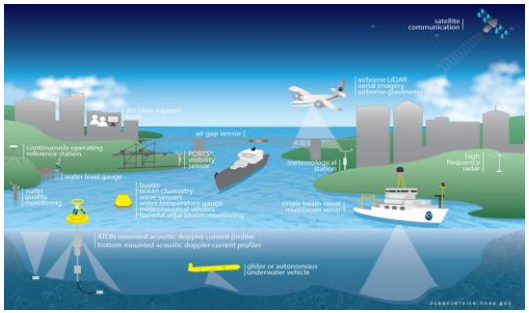

- Of particular interest is the potential application of SAE technologies in sectors that are traditionally non-ICT sectors.
- Desk research, talking with projects, visiting exhibitions and brainstorm meetings.
- An aim has been to identify applications that could be of interest to SMEs in all member states based on the universal need and interest for the applications by society in general.
- Overall a large number of potential applications have been identified for which SMEs could develop new concepts.

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Added Application Domains

- **Home Automation** – This affects us all and increasingly buildings and homes are being equipped with efficient energy management systems, security systems, entertainment systems and also HMIs such as Alexa to allow interaction with devices.

- **Smart Clothing and Wearables** – People are utilising smart devices for health and well-being, for sports and increasingly in the medical sector. The applications of smart clothing go beyond this leading to new ideas for identity, fashion and interaction.

- **Smart Agriculture** - Food is a universal need and agriculture is a major business across Europe in both the developed and less developed countries. Here increased information is revolutionising farming removing risk for farmers, making life easier though automation and monitoring the supply chain from field to fork.

- **Ocean Monitoring** - The oceans drive our weather systems and there are many issues as a result of pollution, not only of oil but also from plastics which is currently become a key concern for the society. Here there are many interesting applications predicting weather, identifying, tracking pollution and cleaning up pollution and also in monitoring sea life in all its forms.

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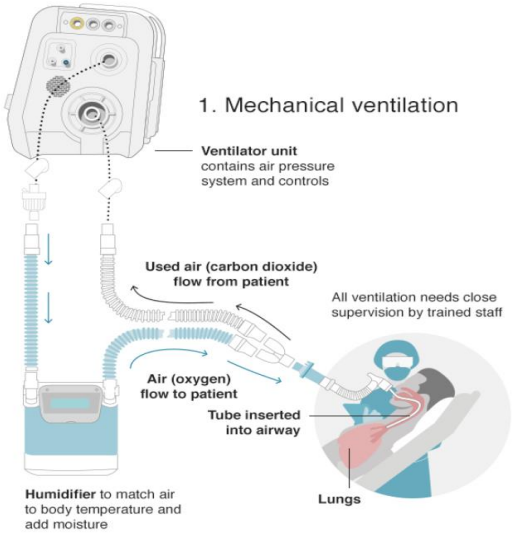
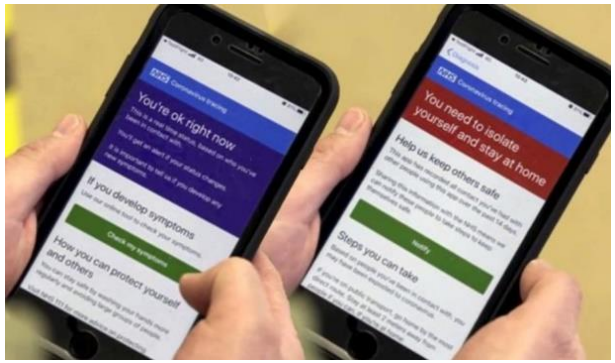
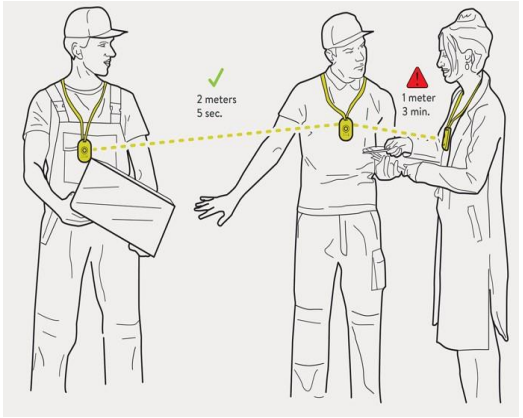
Technologies to Combat COVID-19







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Hot off the Press - Food and Beverage!

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Art, Entertainment, Music and Literature

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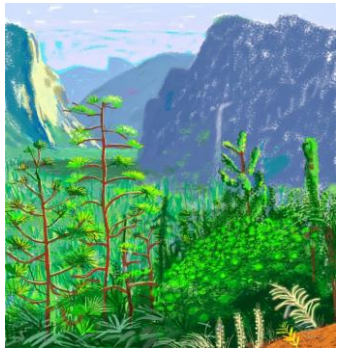
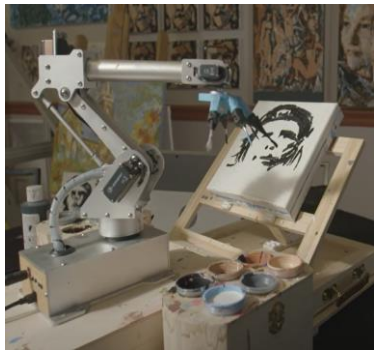
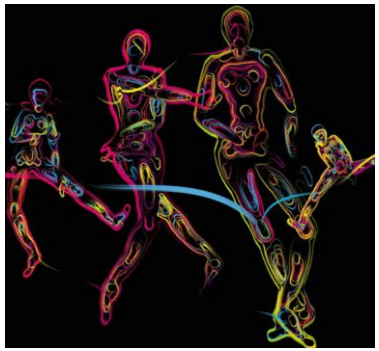











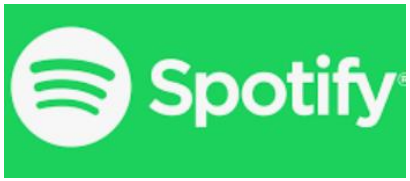


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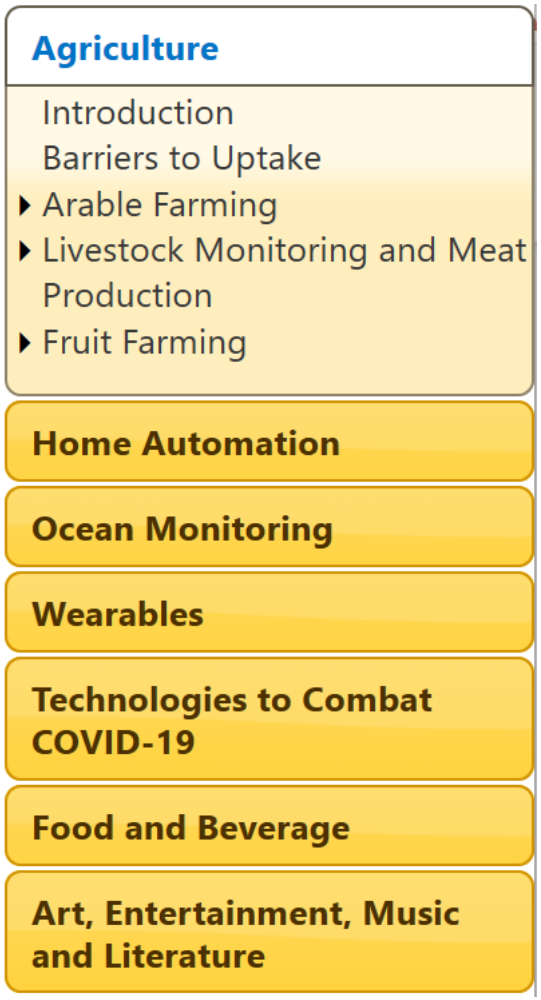
Application “Accordion”



Application domains represented as accordions that open up with content

http://www.askew.nl/radar/

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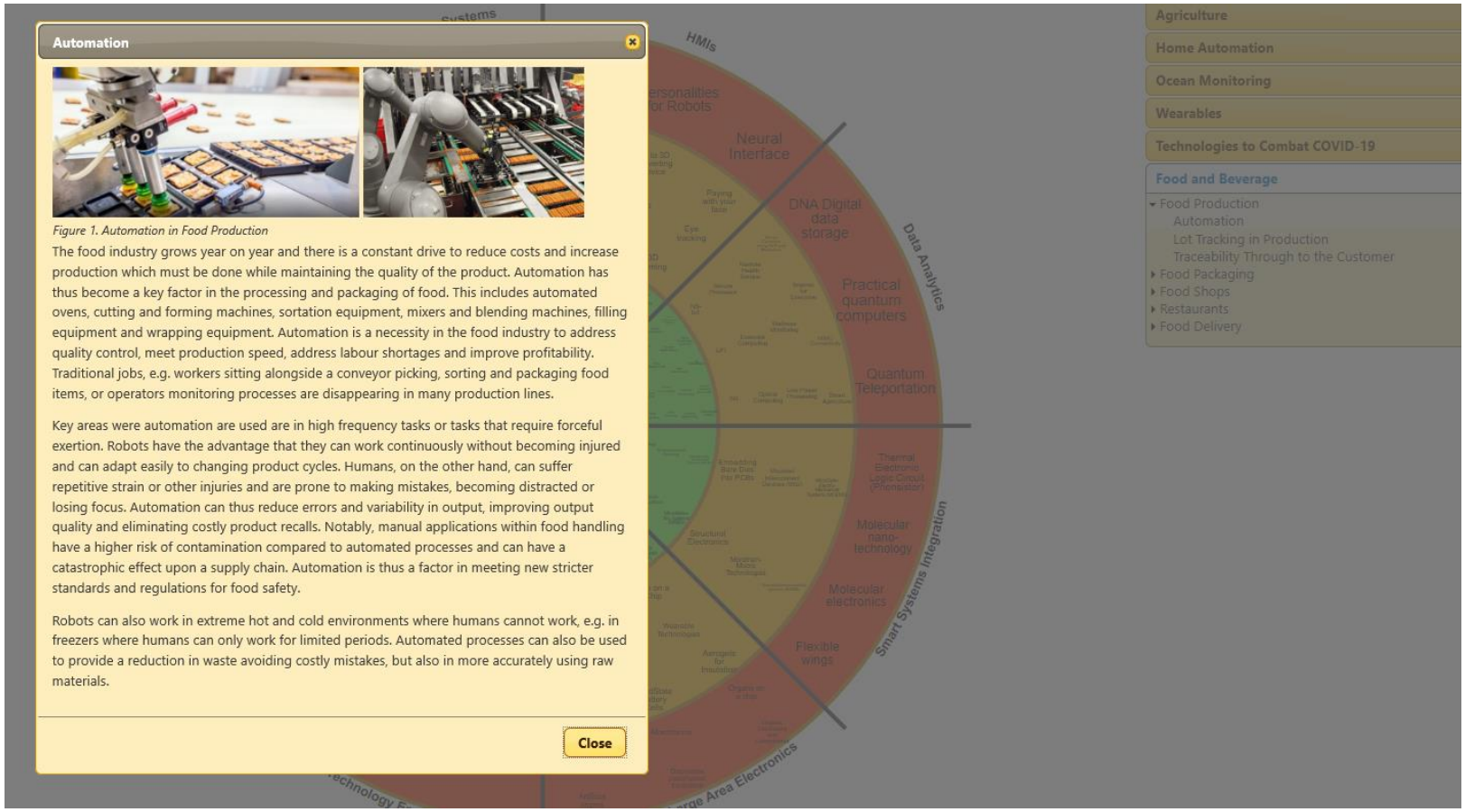
Sublevels



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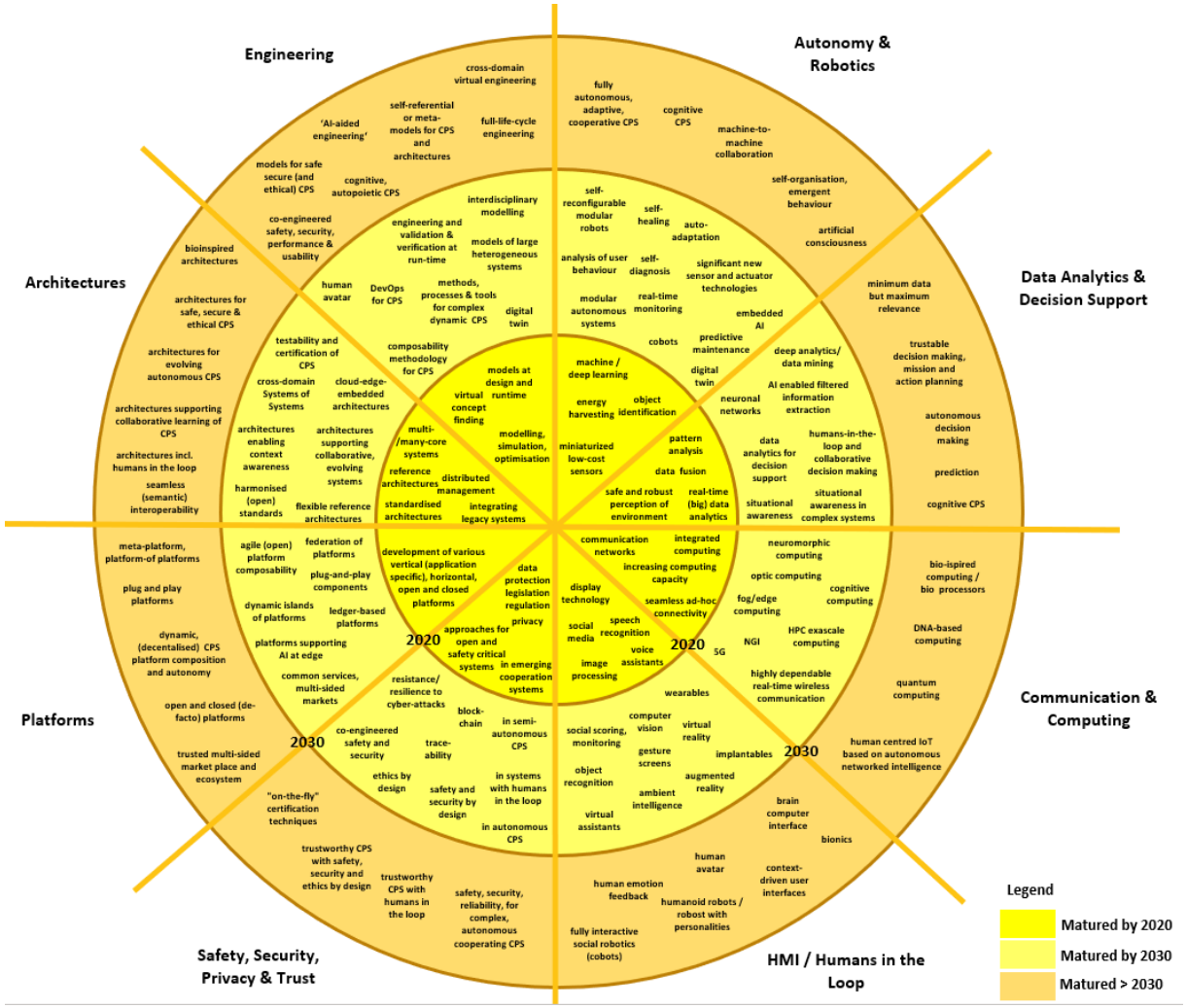
Technology and Research Radar



The inner circle represents technologies or areas that are already mature and goes to 2020

The middle band identifies areas that will be important between 2020 and 2030 (with the aim of identifying priority topics for Horizon Europe/Digital Europe)

The outer band considers areas that are thought to be important technologies after 2030. In getting from today to the required functionality in 2030 there is a need for long term research and innovation in order to develop the appropriate, technologies, tools, platforms or services.

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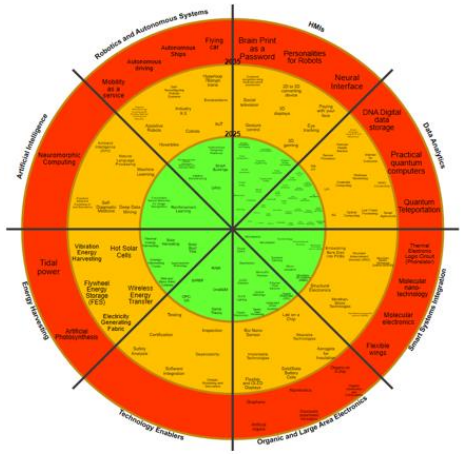
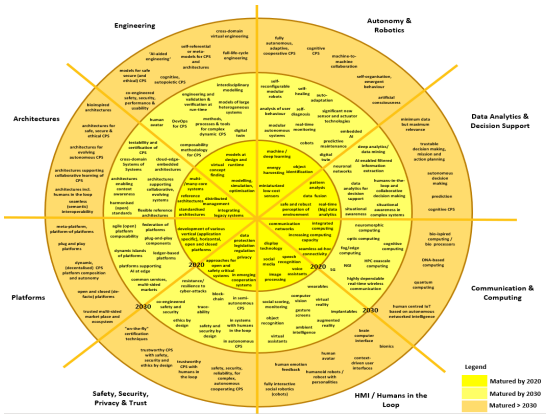
Technology Radar – How can you contribute?

- Looking for new technologies being pursued (Note have 162 already!)
- Do you have examples of technology use addressing new application domains, e.g. agriculture, farming, food and beverage, etc.?
- Are there technology gaps which would benefit from research and development?





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Discussion

Mentimeter Results

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Thank you!

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