TRINITY rahoitusta pk-yritysten robotisointiin

Digi-Salama Verkostot ja rahoitus virtuaalitapahtuma 24.3.2021

Jyrki Latokartano, Projektipäällikkö, Tampereen yliopisto

www.trinityrobotics.eu

TRINITY rahoitusta pk-yritysten robotisointiin

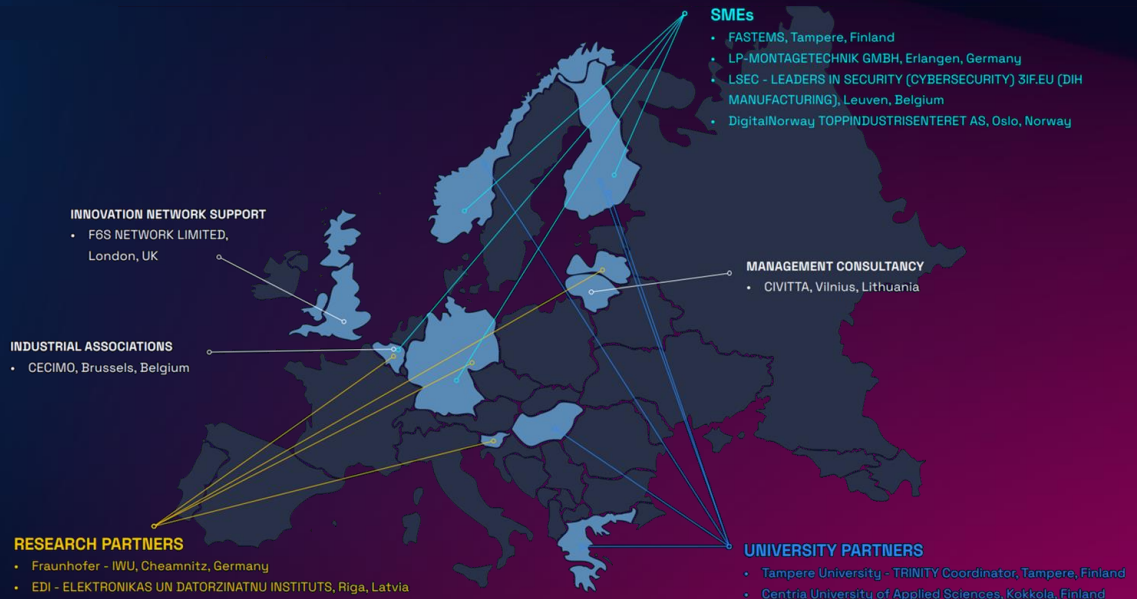
- TRINITY DIH –projekti
- TRINITY tuki yrityksille
- TRINITY teknologiamodulit
- TRINITY rahoitushaku

H2020 TRINITY 2019-2022

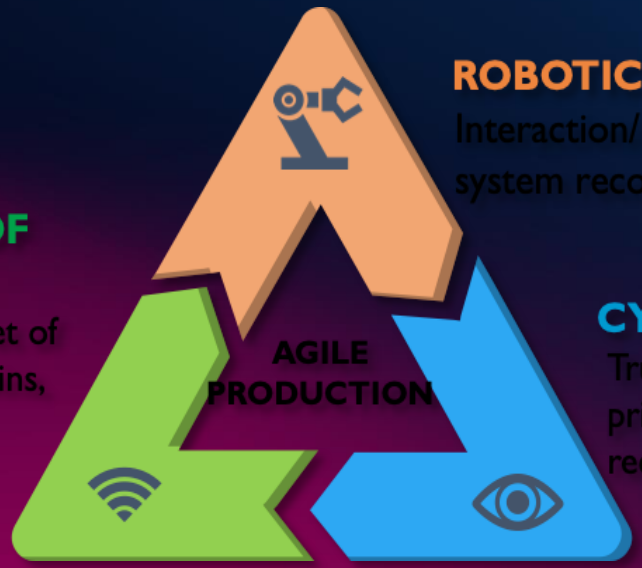
The main objective of TRINITY is to **create a network of digital innovation hubs (DIHs)** composed of Research Centres and University Groups specialized in Advanced Robotics and Internet of Things (IoT), supported by a DIH with experts in Robotics Cyber security to contribute to novel robotics solutions that will increase agility in production.

The second objective is to continue this network after the ramp-up phase, by building a **sustainable business model** throughout the project lifetime.

The third objective is to deliver a **critical mass of use case demonstrations** in collaboration with industry to support the industrial modernization leading to more agile production and increase the competitiveness of European companies.



INTERNET OF THINGS
Industrial Internet of Things, digital twins, digital tools & platforms



ROBOTICS
Interaction/ collaboration & system reconfiguration

CYBERSECURITY
Trust, data sharing, data privacy & system error recovery

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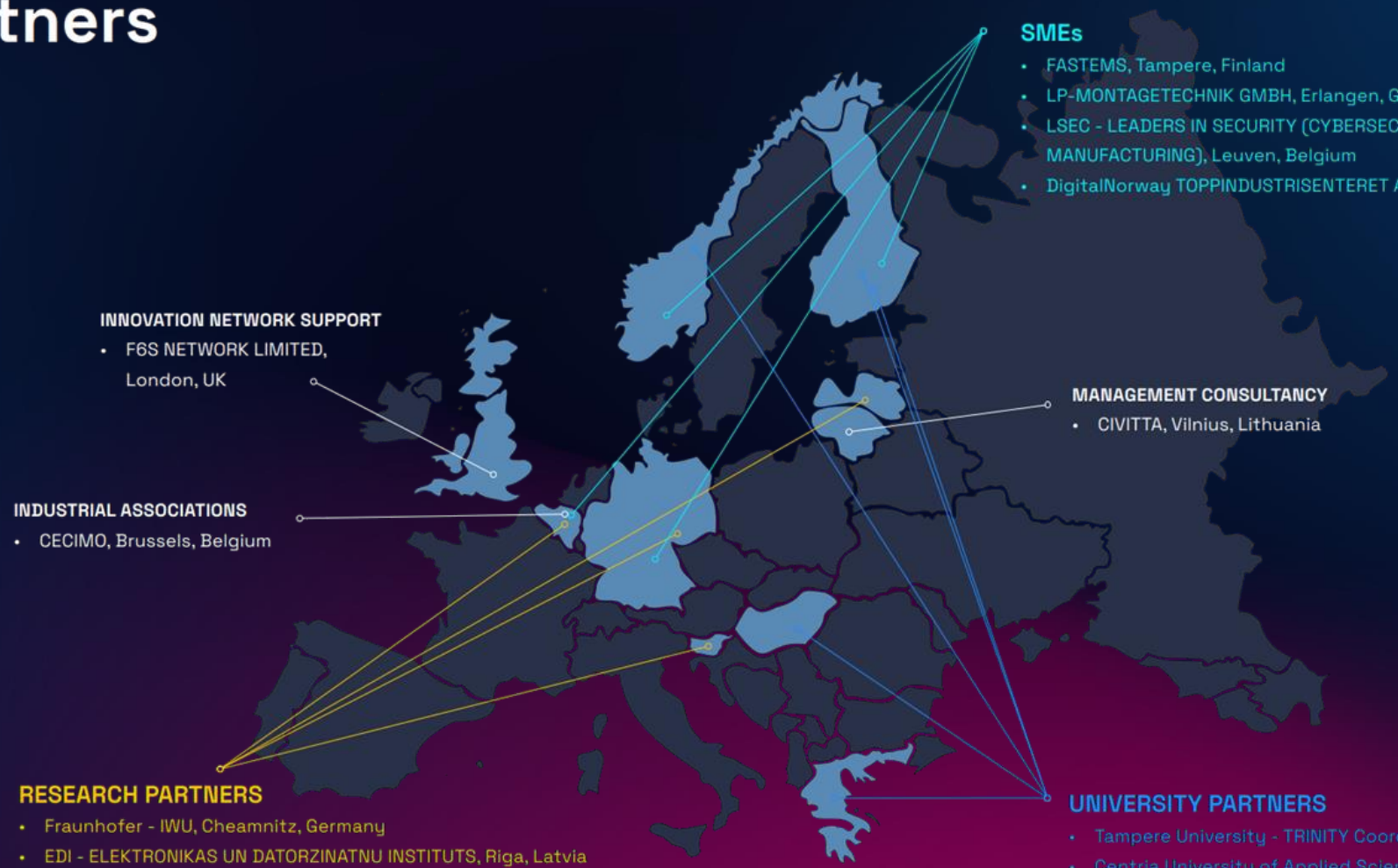
Network & partners



SMEs
- FASTEMS, Tampere, Finland
- LP-MONTAGETECHNIK GMBH, Erlangen, Germany
- LSEC - LEADERS IN SECURITY (CYBERSECURITY) 3IF.EU (DIH MANUFACTURING), Leuven, Belgium
- DigitalNorway TOPPINDUSTRISENTERET AS, Oslo, Norway

INNOVATION NETWORK SUPPORT
- F6S NETWORK LIMITED, London, UK

MANAGEMENT CONSULTANCY
- CIVITTA, Vilnius, Lithuania

INDUSTRIAL ASSOCIATIONS
- CECIMO, Brussels, Belgium

RESEARCH PARTNERS
- Fraunhofer - IWU, Cheamnitz, Germany
- EDI - ELEKTRONIKAS UN DATORZINATNU INSTITUTS, Riga, Latvia
- Flanders Make - Heverlee, Belgium
- JOZEF STEFAN INSTITUTE -JSI, Ljubljana, Slovenia

UNIVERSITY PARTNERS
- Tampere University - TRINITY Coordinator, Tampere, Finland
- Centria University of Applied Sciences, Kokkola, Finland
- The University of Tromsø, Tromsø, Norway
- LMS - University of Patras, Patras, Greece
- Budapest University of Technology and Economics, Budapest, Hungary

For your company needs, you can contact any of the TRINITY partners

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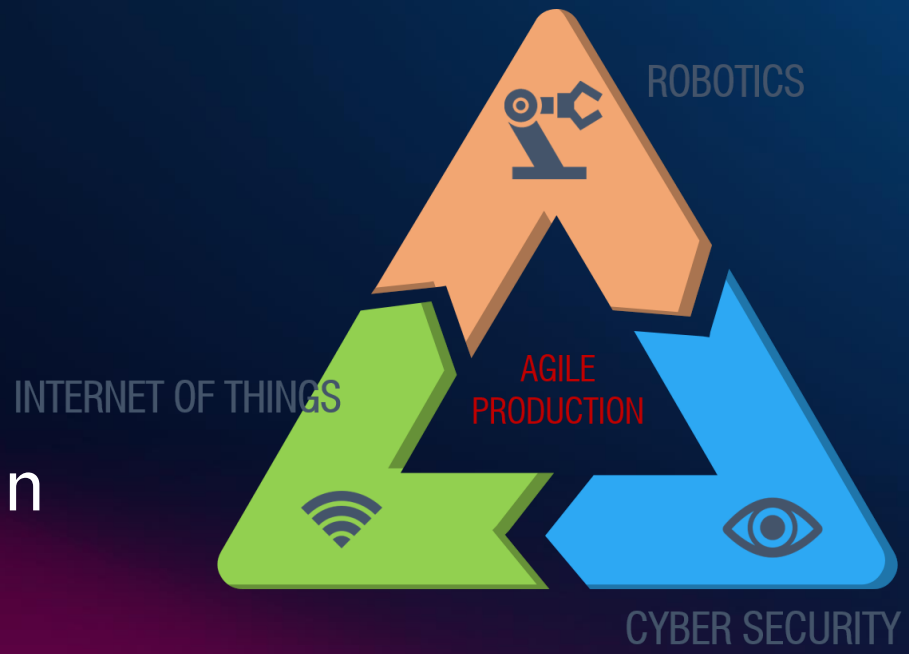
TRINITY services in general

- **Technical** support services
- Consulting and **business** support services
- **Mentoring** and **training** support services
- **Networking** and Matchmaking support services
- Visibility and **outreach** support
- **Funding**

- Register to our mailing list to receive a brochure
  https://trinityrobotics.eu/

Tampere University services related to TRINITY topics

- Technical workshops
- Facilitation sessions
- Hands on training sessions
- Application writing support
- Technical modules to improve agility in manufacturing



- Other services available too, please contact us for more information

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Training and facilitation services

- Half of a day sessions possible with TAU experts
  - Application writing
  - Technical training
  - Hands on training

- Possible topics
  - Human robot collaboration
  - Collaborative robotics
  - Robot safety
  - Simulation, off-line programming
  - AR/VR technologies
  - …

https://research.tuni.fi/robolabtampere/

TRINITY mentorointi

TRINITY projekti tarjoaa mentorointia osallistuville yrityksille.

- Jokainen rahoitettu demonstraatio saa oman mentorinsa joka tukee konsortiota ohjelman aikana.
- Yhteistyö hyödyttää molempia osalpuolia:
  - PK-yritykset saavat pääsyn TRINITY verkoston osaamiseen
  - TRINITY konsortio saa ensi käden tietoa yritysten tarpeista ympäri Euroopan

TRINITY mentorit:

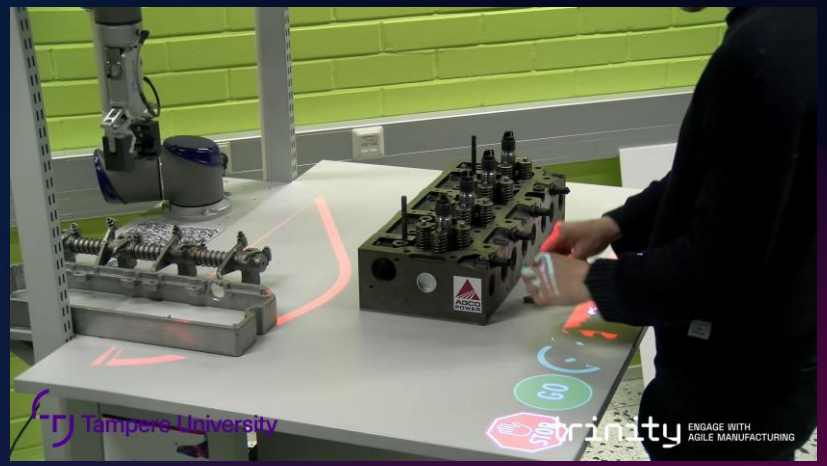
- Tukevat projekteja demonstraatio-ohjelman ajan
- Antavat tarvittaessa teknistä apua ja vinkkejä
- Neuvovat ja ohjaavat raportoinnin ym. byrokratian kanssa
- Tarjoavat uusia kontakteja ja verkostointimahdollisuuksia
- Tiedottavat hakkeista omissa verkostoissaan ja TRINITYn kautta
- Tutustuvat pk-yritysten tarpeisiin ja tapoihin toimia

LEAD PARTNER	ACRONYM	LEAD MENTOR
1. Adaptive Robotics	DynaMo	Pavan Sriram
2. Additive Automations	SALSA2d	Igor Kovac
3. ALDAKIN	ARGRIND	Andras Czmerk
4. AllbeSmart	AGILE	Janis Arents
5. FAE TEAM	SNIPE	Janis Judvaitis
6. Flagstone	ALOFAP	Asad Tirmizi
7. IT+Robotics	EACHPack	Sotiris Aivaliotis
8. Knowhedge S.r.l.	MYWAI-4-ROBOTICS	Andras Czmerk
9. LCV	LDM-AUTO	Asad Tirmizi
10. Lopos	LOMSAS	Ulrich Seldeslachts
11. Mentech	AMS	Ulrich Seldeslachts
12. MetraLabs GmbH	RoboLibri	Marcel Todtermuschke
13. MX3D	WAAM CLAMP	Pavan Sriram
14. Probot Oy	RoSo-UPB	Tomi Pitkaaho
15. Quanta & Qualia	TRAINMAN-MAGOS	Sotiris Aivaliotis
16. RoboBend ApS	ROBOBEND	Pavan Sriram
17. SARKKIS Robotics Lda	X-Weld	Igor Kovac
18. Spin Robotics	Digi-SAAP	Marcel Todtermuschke
19. Stam S.r.l.	ICON	Tomi Pitkaaho

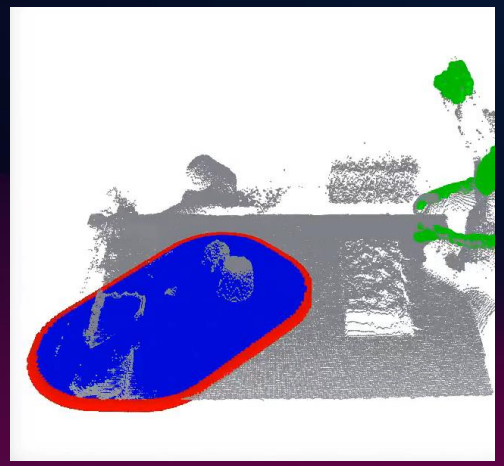
Collaborative Assembly with Vision-Based Safety System
TRINITY use case example by TAU

TRINITY modules by Tampere University

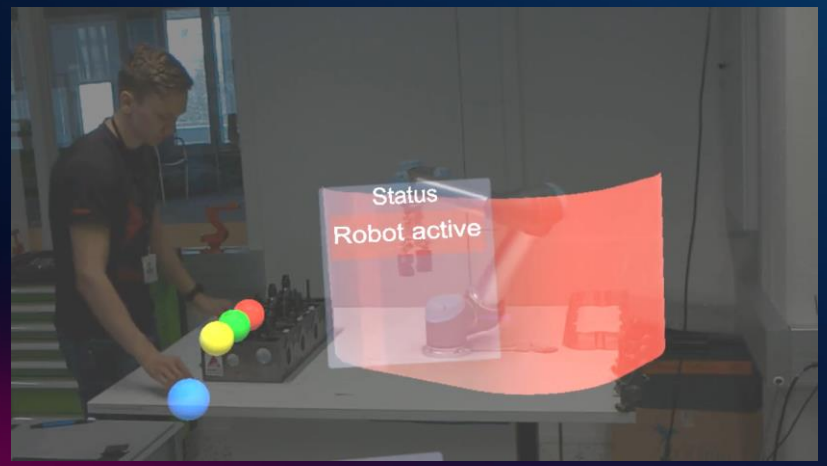
Projection-based Interaction Interface for HRC



Depth-sensor Safety Model for HRC



Wearable AR-based Interaction Interface for HRC



https://trinityrobotics.eu/catalogue/

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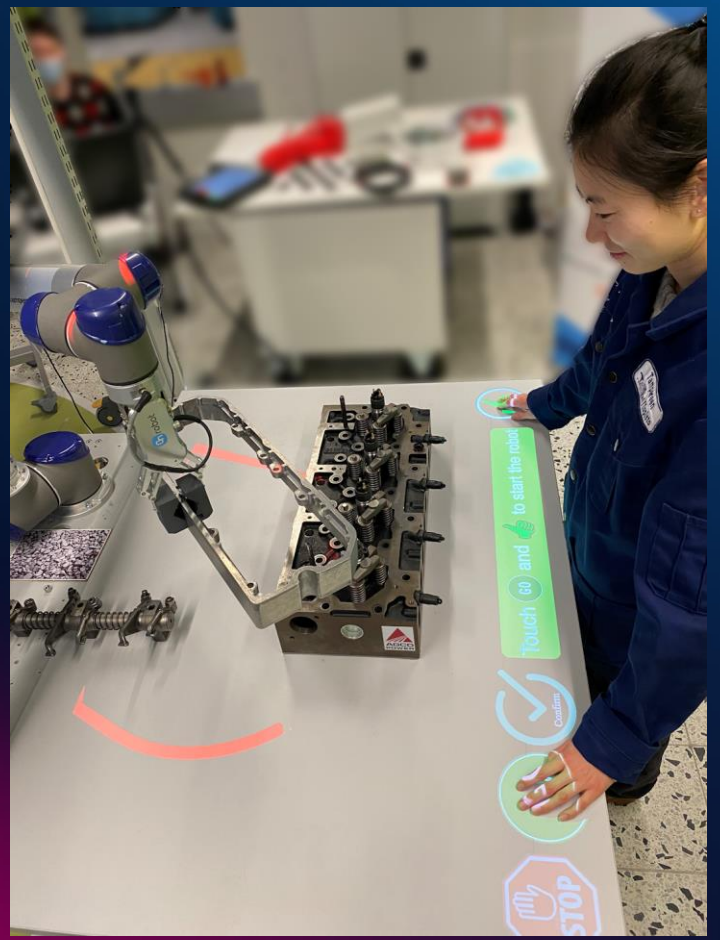
TRINITY modules by Tampere University

- **Projection-based Interaction Interface for HRC**
- **Depth-sensor Safety Model for HRC**
- **Wearable AR-based Interaction Interface for HRC**



- For TRINITY modules TAU can offer technical guidance to interested SMEs
- All code open source
- Supporting training material available at TRINITY training platform.
- Terms for for actual technical support and implementation work need to be negotiates separately
- Some videos already uploaded to TRINITY YouTube

https://trinityrobotics.eu/catalogue/

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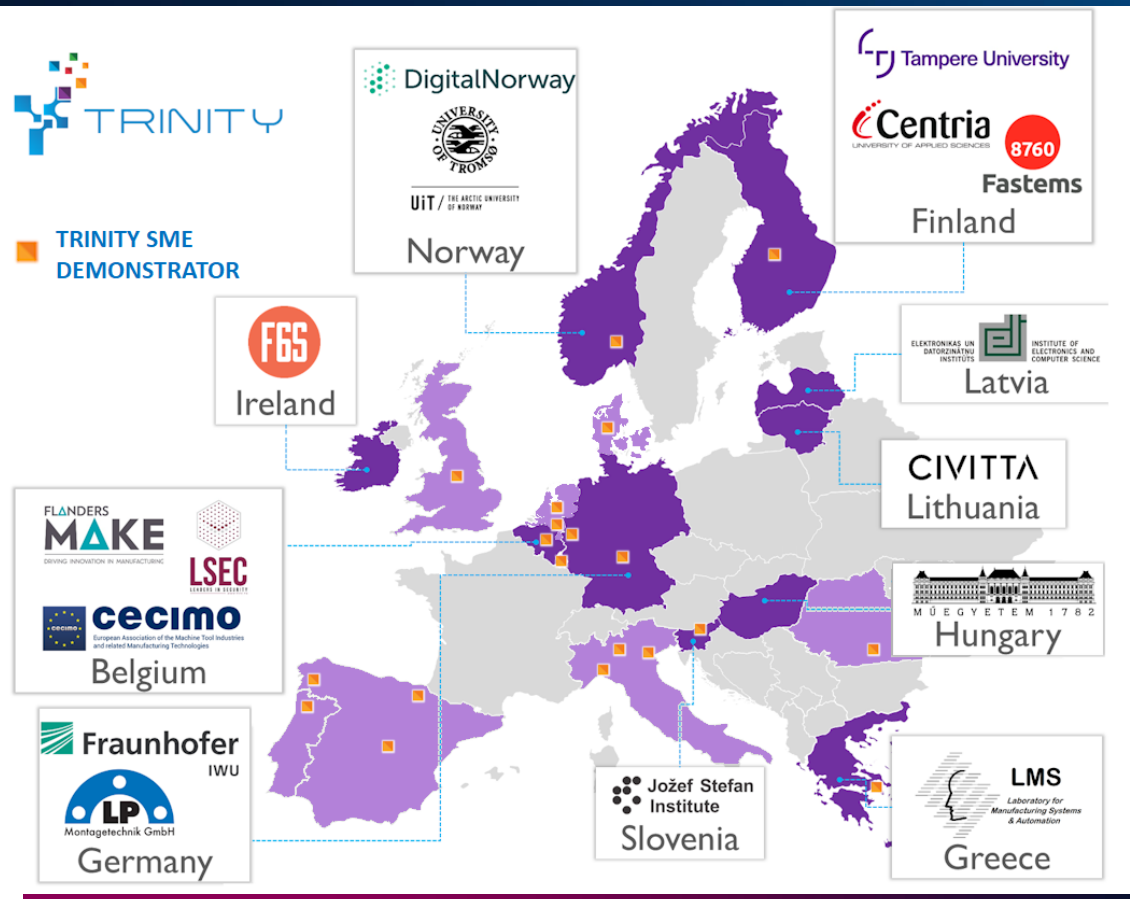
TRINITY demonstraatio-ohjelma 1

- 19 rahoitettua demonstraatiota
- 44 organisaatiota yhteensä
- 14 EU maata
- 4.66M€ - kokonaisbudjetti



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Trinity funded projects

Adaptive Robotics AS
Real time dynamic motion planning applied to agile production

Probot Oy & AkkuSer Oy
Robotic Sorter for Used Portable Batteries

Trendlog.io &
Spin Robotics
Digitalization of collaborative Screwdriver Applications in Agile Productions

RoboBend ApS & BCM Transtech A/S & Robot Nordic ApS
World's first standard bending robot

Additive Automations &
Advanced Manufacturing Research Centre / Sheffield Robotics - University of Sheffield
aavAutomation via 2 Way Digital Twin

MX3D B.V. & Team Industrial & TiaT Europe B.V.
WAAM CLAMP: Wire Arc Application of Metal Component Linked to Additive Manufacturing for Pipeline Repair

MetraLabs GmbH - Neue Technologien und Systeme & Universität Erlangen-Nürnberg &
Library of the Max Planck Institute Luxembourg
Fully autonomous and highly interactive inventory taking robot for precise localisation of objects for agile production and intralogistics automation

Tegema B.V. &
Mentech Engineering B.V.
Affective Manufacturing System

Laser Cladding Venture N.V.
Development of an autonomy module to improve up-time and efficiency of a laser cladding cell for volume production.

AgileVision Srl &
IT+Robotics Srl &
University of Padova
End-to-End Automatic Handling of Small Packages

imec & Lopos
LOcation based Manufacturing SAfety Services

Elvez d.o.o
Digitalization of collaborative Screwdriver Applications in Agile Productions

Altachem & Flagstone
AMR Logistics Orchestration For Agile Production

ICPE SA
agIle eleCtric mOtor maNufacturing

Galicia
TRAining of an INdustrial MANipulator Using the MAGOS Platform

Kilometro Rosso &
Arizzi Fonderie San Giorgio &
FAE Technology
Sensor Network for Intelligent Predictive Enterprise

NEADVANCE Machine Vision, S.A. & SARKKIS Robotics Lda
& INESC-TEC
X-Weld - Planning, Accuracy and 3D sensing for full automation robotic welding

STONESHIELD ENGINEERING LDA
Increasing the agility of the cable assembly industry using TRINITY robotics solutions

Aldakin S.L. &
Ideko S. Coop
Advanced Robotics for Accurate Grinding of Complex Metal Parts

STAM S.r.l.
agIle eleCtric mOtor maNufacturing

Università degli Studi di Genova - DIBRIS &
Knowhedge S.r.l.
MYW.AI Box: Edge Intelligence for Robotics

Quanta and Qualia PCC
TRAining of an INdustrial MANipulator Using the MAGOS Platform

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Open Call #2

Apply by Jun 1st 5:00pm CET

https://www.f6s.com/trinitydihopencall2/apply

General open call topics: opencall@trinityrobotics.eu

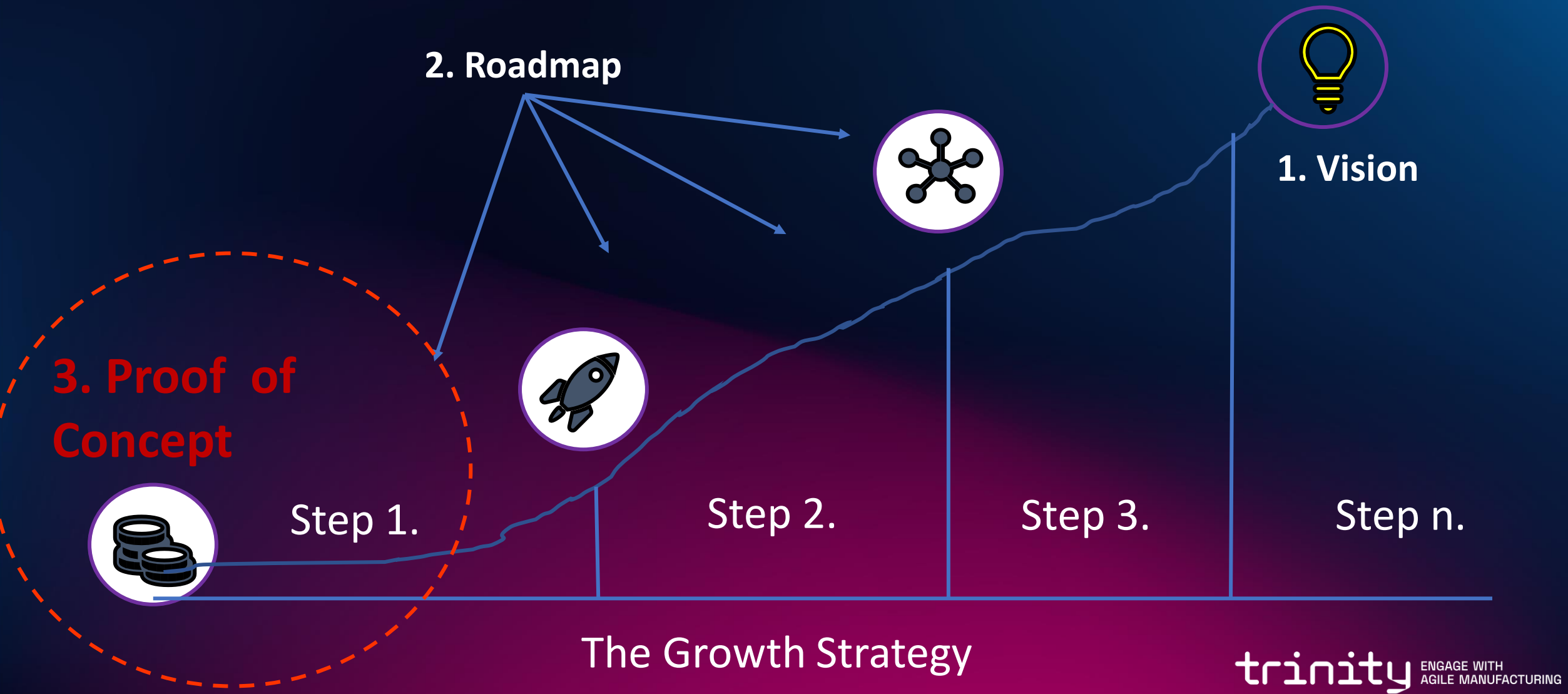
F6S platform related topics: iwa@f6s.com

Open calls – in a nutshell

- **Open Call 2**
  - Call opens 14.2.2021 and closes 1.6.2021
  - 1.7-31.8. evaluation period
  - September contracting
  - 1.10.2021 Demo Program 2 starts

- Up to EUR 200,000 funding per demonstrator
- Consortium lead by SME (or slightly bigger)
- Total budget 3,5 m€
- 10 months run-time
- Must be a consortium
- Must be two countries
- TRL 5-7

TRINITY - Open Call – What we actually fund



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2nd Open Call

€ **3,5m€** → from €50.000 to €200.000

Open Call #2 February 2021 GET READY!

Demo TRINITY

Existing technical modules and their concepts for enhancing, testing & extending

Support available from TRINITY consortium

2-3 partners

- SME
- Partner 1
- Partner2

Novel solutions

Propose your own solution!

2-3 partners

- SME
- Partner 1
- Partner 2

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Special targets

- **Cross-country collaboration** (e.g. partners from 2 different countries is mandatory)
- Budget: at least 40% has to go to the Lead SME
- Extra Points:
  - 5 extra points if female(s) in lead roles (in of the consortium members)
  - 5 extra points if using/applying/testing/developing/ extending TRINITY modules
    - Combination of TRINITY+own development is allowed
  - 5 extra points if EU-13 collaboration (e.g. 1 partner is from EU-13)
- Total extra points are 15 in addition to the scores
- The threshold still needs to be reached in all categories

Resource	Score/Threshold
Impact in terms of Industrial relevance and exploitation plans •industrial impact (for partners) • Manufacturing SME → factory floor • System Integrator → markets •potential impact to general advancement of technology (minor role)	0-10 /6 (double points)
Soundness of Concept e.g technical soundness	0-10 /6
Implementation feasibility of the work	0-10 /6
Resources & Consortium: Partners of the consortium (capabilities), Deployment of resources for tasks and goals	0-10 /6
	max 50 max 65 (if max bonus)

Expected impact – depends who you are

- Consortia should define on how the impact should be measured e.g. within timeline we as company expect following increases in … and it is measured by following KPIs

1. Industrial impact (for the company/consortium)
   - Manufacturing SME → factory floor: quality, efficiency, digitalisation
   - System Integrator → turnover: revenue, markets, employment
2. Potential impact in general for the industry (secondary role)

- Increased
  - agility of production
  - deployment of robotics
  - use of standards for modules and systems
  - use of ICT and cybersecurity in Factory floor
- Improvement in
  - Turnover & Profits
  - Markets share
  - Collaboration with partners
  - Technology maturity
  - Gender balance and attractiveness (new employees)

Financial capabilities

- Funding rate is 70% of eligible total costs.
- The rate is the same for all the consortium members, including SME's, universities, research organisations and competence centers.
- The TRINITY funding per experiment may vary from €50.000 to €200.000.
- If you apply the maximum funding amount 200 000 €, the total budget must be in minimum 286 000 € (including all members).
- The funding of the lead SME (or slightly bigger) must be at least 40% of the entire use-case demonstration budget.

Budget

- The costs are mainly personnel costs
- Other direct costs may include travel, service and small consumables
- Large investments (large equipment) are not funded
- Depreciation costs are acceptable if well justified and according to your organisation rules
- Subcontracting is not allowed in the key tasks performed by the consortium (i.e. your project cannot be a subcontrator either)
- Indirect costs are to be calculated as 25% of direct costs (i.e. personnel costs + other direct costs).

Eligibility criteria

1. All consortium partners are legal entities established and based in one of the EU Member States or an H2020 Associated country as defined in H2020 rules for participation.
2. Consortium can only be led by SME or slightly bigger company.
3. The consortium must include partners from at least two different countries.
4. The consortium must include at least two partners. (max. three)
5. All consortium partners must register to the TRINITY DIH community prior submission through TRINITY DIH portal (https://trinityrobotics.eu/register/).
6. All consortium members must have a PIC number registered

Application step-by-step

- Step 1. Understand what is for you in the Open Call
- Step 2. Decide your track TRINITY vs NOVEL
- Step 3. Search for Consortium partner(s)
- Step 4. Get a PIC-numer from the EC portal
- Step 5. Work on your application
- Step 6. Submit it on time **1st Jun 2021, 5:00pm CET**

TRINITY open call 2 webinar

- 20.4.2021 11:00-12:30 CET
- Follow https://trinityrobotics.eu/ for registration info
- Previous webinar recording here

https://trinityrobotics.eu/events/trinity-open-call-2-webinar-submitting-a-competitive-proposal/

Matching making – Save the date !!

25th March & 29th April, 2021

Time: 9.30 to 13.00 CET

Virtual event: B2B match and Zoom

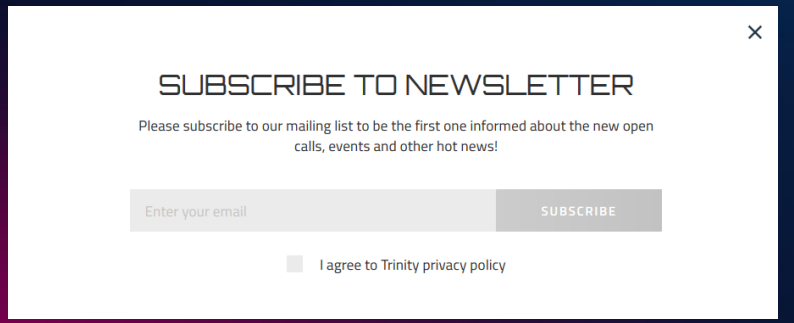
More info: TRINITY website

TRINITY channels

Webpage

LinkedIn

Twitter



Open Call info: https://trinityrobotics.eu/open-calls/

https://trinityrobotics.eu/

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What could we help you with?

Please contact:

minna.lanz@tuni.fi

jyrki.latokartano@tuni.fi