Testing and Experimentation Facilities under DEP

Manufacturing Workshop

22 June 2021

- ✓ Interaction via SLIDO
- ✓ Use the **chat** for technical issues only
- ✓ Please **mute** yourself when you are not talking

Housekeeping

- We will record the session for note-taking purposes and delete record after 1 month

- For **Member State officials**:

  - Please **indicate your name and Member State affiliation in Webex**

- Slido use during workshop:

  - Questions only here in SLIDO**, please don't use the webex chat**

  - Online survey: **EuSurvey**

  - Will stay **open after the meeting (1 day) to collect your additional questions**

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Agenda

1ST PART: Member States and Stakeholders	**9:15–9:30 – Participants dial-in**
	9:30–10:00 – EC presentation on TEF and past workshops
	10:00–10:25 – Short input by stakeholders on TEF vision
	• Željko Pazin, EFFRA
	• Ali Muhammad, EURODYN
	• Jakub Główka, PIAP
	• Mikael Hedelind, Mälardalen University
	10:25 – 10:55 –Q&A discussion & Online poll
	10:55 – 11:00 – Break
2nd PART: Member States ONL	11:00 – 11:10 – 4 Speakers open for questions by MS representatives
	11:00 – 11:10 – EC introduction on discussion regarding needs and commitments
	11:10 – 11:30 – Member State tour de table
	11:30 – 12:00 – Open discussion

Testing and Experimentation Facilities: selection and governance (sectorial TEFs)

Cécile Huet, Deputy Head of Unit

Mariusz Bałdyga, Programme Officer

Yves Paindaveine, Head of Sector

DG Connect Unit A1: Robotics & Artificial Intelligence Innovation and Excellence, A.4:Digital Transformation of Industrial Ecosystems

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Outline

- Objective of this meeting

- TEF Concept

- TEF's role in the EU ecosystem

- Applying for TEF funding

- Co-funding TEFs

- Manufacturing

- Open discussion

Objective of this meeting

➔ **Gather inputs from stakeholders and Member States representatives to prepare the call for proposals**

TEF Concept

What is a TEF?

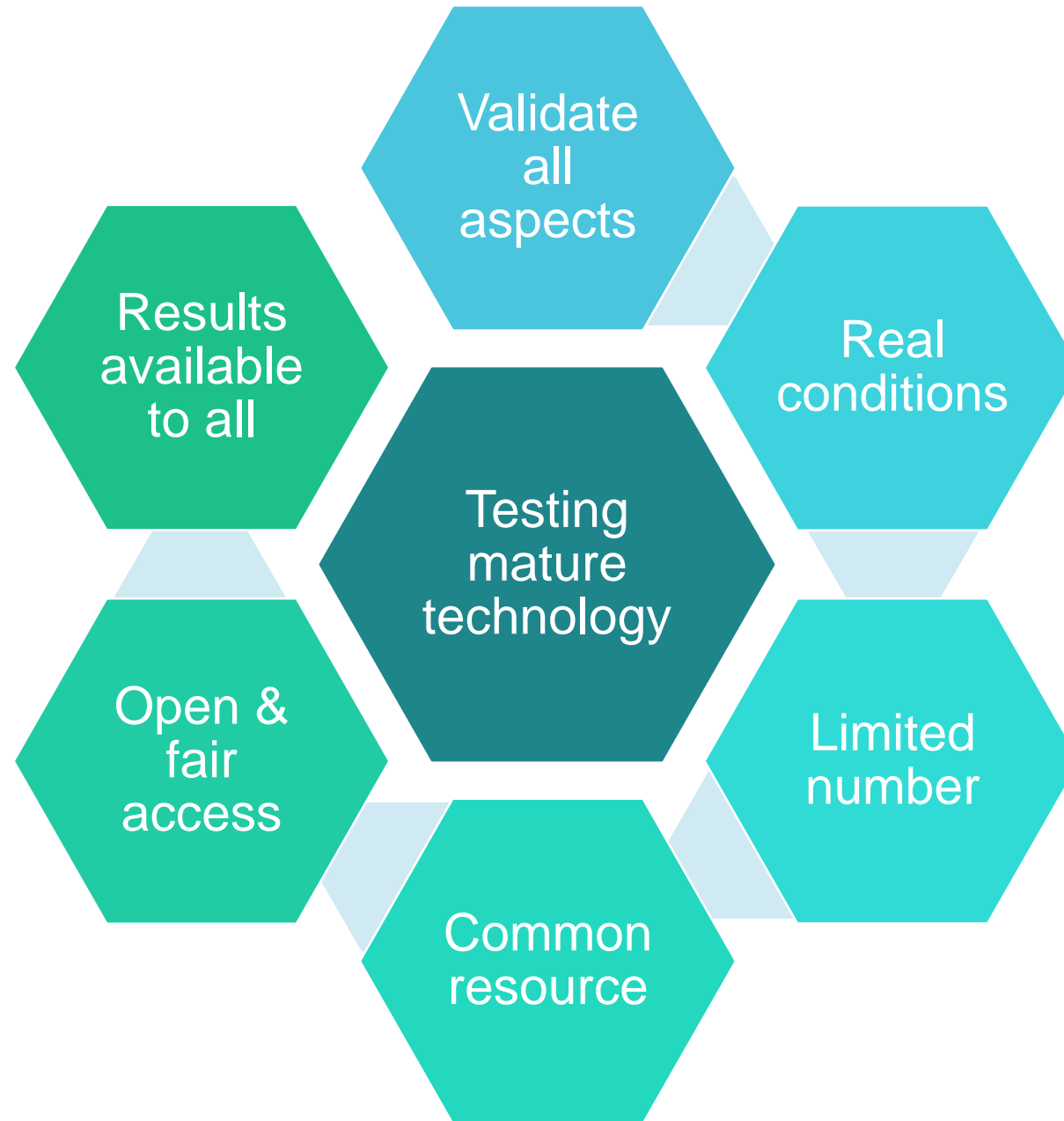WORLD CLASS REFERENCE SITES FOR EXPERIMENTATION AND TESTING AI
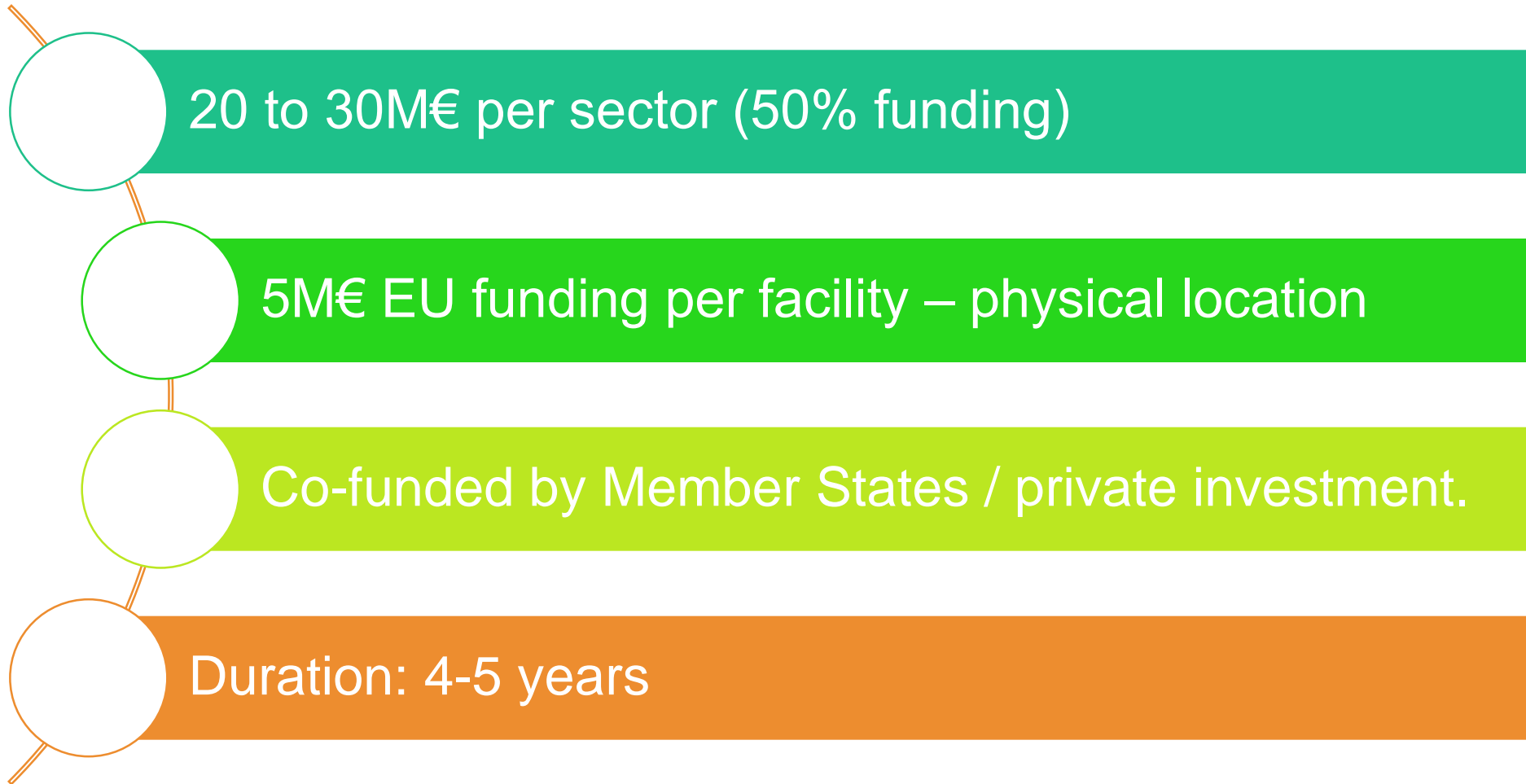
REAL SETTING

ESSENTIAL SECTORS

CONNECTED TO THE NETWORK OF DIGITAL INNOVATION HUBS

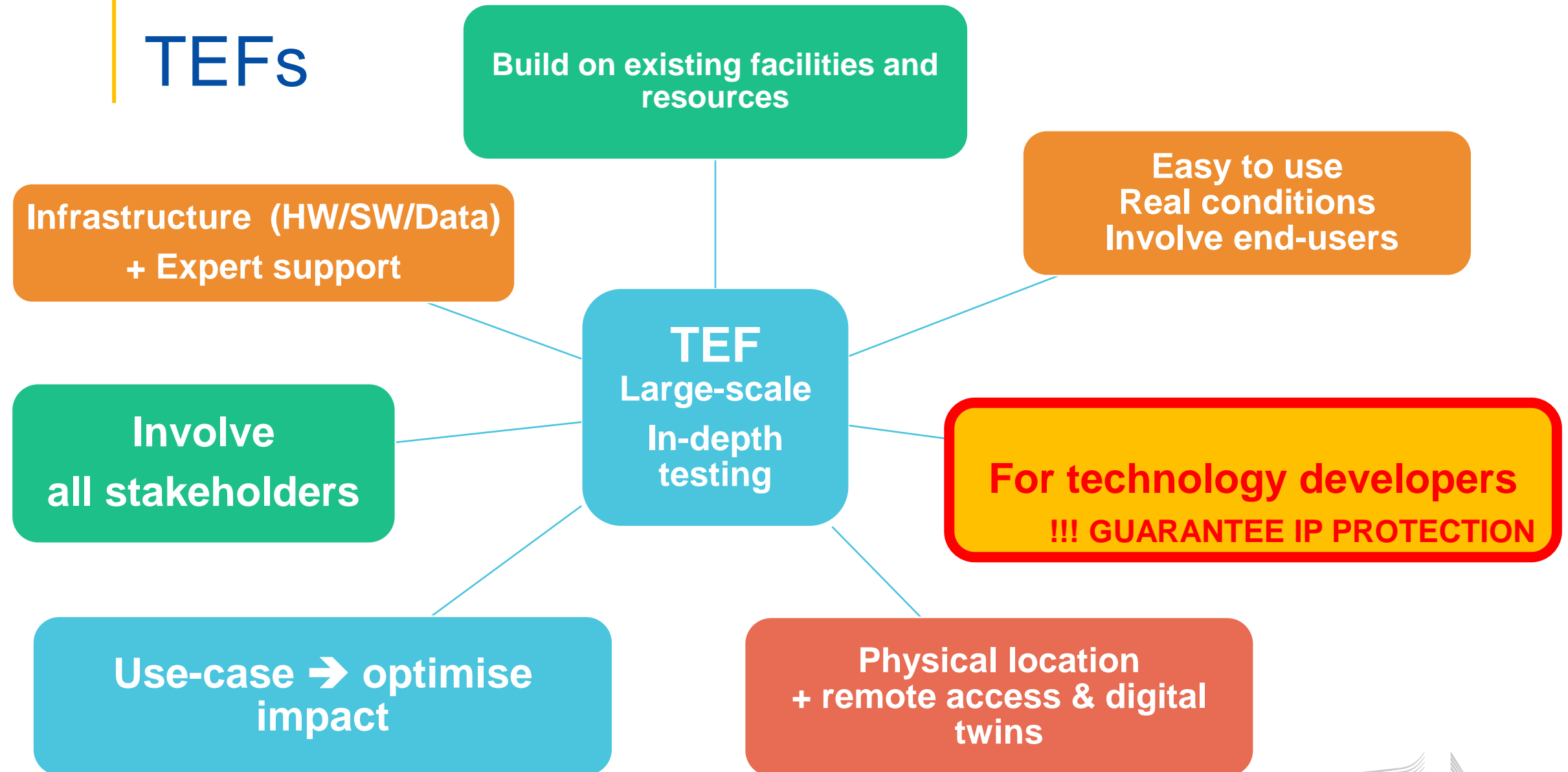EQUIPPED WITH INFRASTRUCTURE & LATEST AI + ACCESS TO CLOUD/DATA/HPC…

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Concept

- Validate all aspects
- Real conditions
- Limited number
- Common resource
- Open & fair access
- Results available to all
- Testing mature technology

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Sectorial TEFs in Numbers

20 to 30M€ per sector (50% funding)

5M€ EU funding per facility – physical location

Co-funded by Member States / private investment.

Duration: 4-5 years

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TEFs

Build on existing facilities and resources

Easy to use
Real conditions
Involve end-users

Infrastructure (HW/SW/Data)
+ Expert support

TEF
Large-scale
In-depth testing

Involve all stakeholders

For technology developers
!!! GUARANTEE IP PROTECTION

Use-case ➔ optimise impact

Physical location
+ remote access & digital twins

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TEF's role in EU innovation ecosystem

TEFs vs [E]DIHs

CENTRAL vs LOCAL
Test scale
Users: Developers vs Users
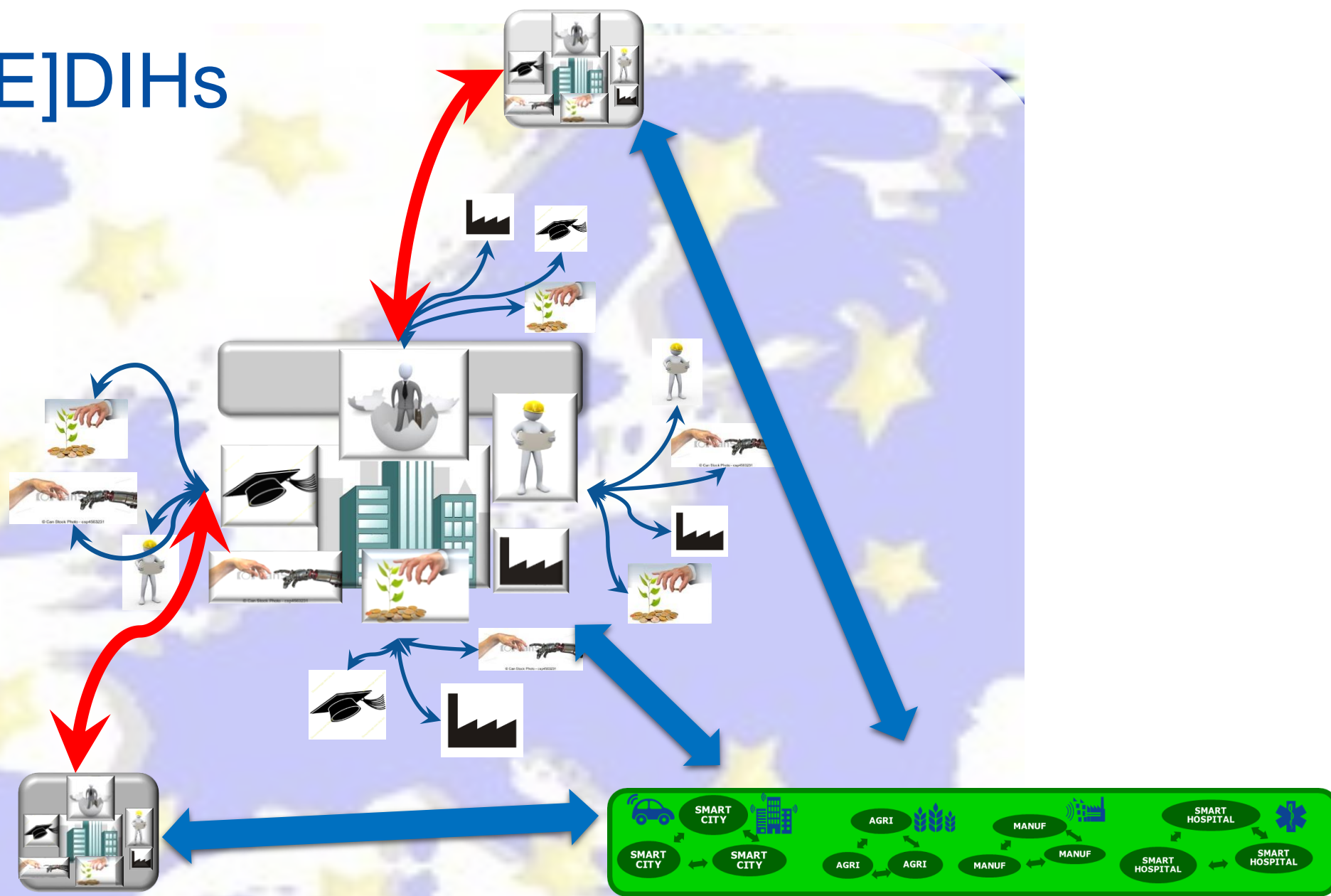
REFERENCE TESTING AND EXPERIMENTATION FACILITIES CENTRAL SHARED FACILITY

Regulatory Sandboxes

- TEFs may offer regulatory sandboxes test

- Holistic approach possible, but must include AI testing

- Regulatory sandbox under proposed AI Act:

  - Established by **competent authorities**

  - **No derogation** from the AI requirements, but **special regime** for certain further personal **data** processing (article 54)

  - Flexibility: modalities and conditions of the **operation** (eligibility criteria, procedure for application, selection, rights and obligations of the participants, etc.) to be set out in **implementing acts**

Applying for TEF funding

Tentative timing for TEF calls under DEP

Tentative Timing

CALLS & EVALUATION YEAR(S)	2ND CALL (2021-22) SECTORIAL TEFs
Call Opening	Q4 - 2021
Deadline for submission	Q2 - 2022
Signature of contracts	Q4 - 2022

Next steps for Sectorial TEFs from EC perspective:
- Now: stakeholder consultations to fine-tune call text
- Late summer: draft call text
- Q4 2021: matchmaking exercises organised by EC

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How to apply as a network of TEFs

- **Set-up of TEF network**

- A network of 6 TEFs (approx. 5M€/TEF) would:

    - Be in 6 MS (ideally – good geographical coverage)

    - Receive 30 EU funding (and 60 overall)

1 PROJECT = 1 Consortium of TEFS
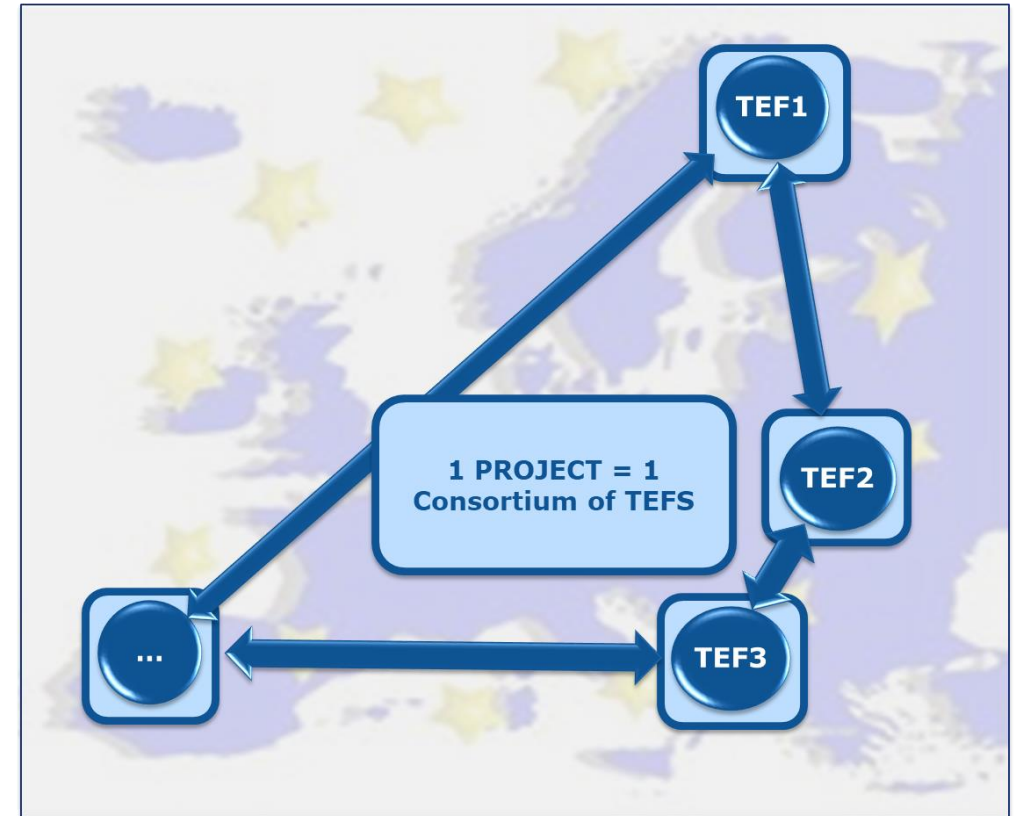
Preferred option: a network of TEFs

- **Consortium:**

  - - More challenging to build a proposal

  - + EU added value

  - + Greater impact

  - + A single access point spread throughout Europe

  - + Networking built in

  - + Complementarities built-in to maximise the offer and impact

  - + Economies of scale

  - + Contraints to maximise the impact can be imposed up-front (e.g.: diversity, representativity, access, geographical distribution etc.)

Individual TEFs:

+ More flexible (easier to build a proposal)

- Challenging Selection process (how to compare? How to assess the "full offer? Ensure complementarity, etc)

- Lack of "harmonisation" (for the users of the TEFs (each with its individual mechanism)

- Networking imposed after the facts

- A set of national TEFs rather than a truly European offer

➡ Preferred option – How to make it happen? Your suggestions welcome

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Consortium Building

Proposers:

Build a consortium

Each member contact their MS representative:

- discuss conditions to receive MS co-investment (e.g. categories of eligible costs, etc.)

- get commitment in the proposal

How could EC help?

- Organise brokerage events:

  - Stakeholders & MS: facilitate consortium building and link to MS

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Member State Co-funding

Illustrative example (fictive)

Member State Co-funding

Illustrative example (fictive)

In this case there is an issue to include a PT member in a consortium, as there will be no MS support for that sector

Projects selection

STEP1: Proposers **build a consortium & secure funding commitment from their Member State**

- by relevant authority in Member State (before the DEP Call Deadline)

STEP2:

DEP Evaluation & Selection

- Check co-funding commitment (eligibility)
- DEP process selects the TEF network ➔ prioritised ranking list

**!!! MIGHT BE RESTRICTION OF PARTICIPATION in DEP
(MS/ Associated countries only / !companies headquarted in third countries!)**

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ADDED VALUE TO LEAD A TEF

FOR MEMBER STATES & FACILITY

- Valorise previous investment & scale-up:

  - National ➔ European facility & substantial EU financial support

- Become part of THE reference network for testing and experimentation

  - Reference as a leader in the field:

    - Leading edge in the technology and deployment,

    - Including regulatory aspects (e.g: certification, standardisation, "code of conduct", etc.)

  - Will become a major actor in the European AI ecosystem

  - Lot of spin-offs expected

Co-funding TEFs

Member State Co-funding

EU funding is 50% - Co-funding is expected by Member States*

How to implement it in practice?

- Assumption: 5M€ per physical TEF (i.e. in 1 country)

- Co-funding might be of different nature, in-kind/in-cash, or already based on earlier commitments, or include private funding.

- CAN BE RRF funding

- ERFD ➜ UNDER DISCUSSION!!

* Private funding is also possible

State-Aid & TEFs – constraints & practical implementation

Discussion ongoing

EU funding is 50% - Co-funding is expected by Member States*

- The 50% provided by the MS is considered as State Aid

- The amount corresponding to the aid must be passed on to SMEs (i.e. 50% of the total TEF budget)

- Practical implementation under GBER* (**identical to EDIHs**):

  - Define a pricelist (e.g. cost for using the TEF per day, + some specific services)

  - SMEs Innovators gets the service for free (limited to 200k€ per organisation for a period of 3 years)

  - Larger companies innovators in AI willing to use the TEF will have to pay the costs, according to the pricelist.

*General block exemption Regulation

Important considerations

A selected TEF will be funded for 4 to 5 years.

But the TEF is s long term investment

There should be a business model to guarantee self-sustainability

Critical to

      - select use-cases that will be attractive for innovators (all will have to eventually pay for it)

      - fill a gap

      - to acquire top reputation

To guarantee interest for/ and use of the TEF.

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Manufacturing TEF

Take-aways from 2020 manufacturing workshops

- The challenge is to integrate state-of-the-art AI technologies with advanced manufacturing technologies and systems to improve the quality of products and processes.

- Guarantee of fair access to TEFs for SMEs and startups.

- The need to cover the entire spectrum of manufacturing, connecting the different players in MS, creating common standards for better collaboration and scale, access to more resources, e.g. AI, HPC, datasets.

- The attractiveness of TEFs pertains to the reinforcement of the existing facilities and expertise within the MS. Examples of manufacturing resources are model factories that combine different technologies and cover multiple industrial processes.

- Conditions at TEFs should also be as close to real as possible.

- TEFs could play a role in providing certification/validation, improving trust.

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Manufacturing TEF in draft WP: Funding scope

- Reference testing and experimentation facility/ies with a focus on full integration, industrial validation and demonstration up to pilot manufacturing in dedicated assembly lines and production cells, and where appropriate certification.

- Integration of state-of-the-art AI and robotics technologies in the manufacturing domain, fostering the deployment of trustworthy, transferable and scalable Industrial AI in Europe.

- AI driven manufacturing facilities improving quality and sustainability of production.

- Extensive end-user involvement.

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Manufacturing TEF in draft WP: key areas

- Factory-level optimization (flexible production in high-throughput and high variety environments, rapid prototyping); testing and assessment of AI technology for autonomous decision making within the real world, i.e. interaction with and decision for humans and other machines; supporting e.g. to rearrange the manufacturing process dynamically (incl. choice of manufacturing techniques and logistics);

- Collaborative robotics (mobile, intelligent AI-powered robots enabling safe human-robot collaboration, also in teams; also in sectors like textiles, tourism or construction);

- Circular economy: minimise resource consumption, optimize supply chains in uncertain environments, use of substitute material, collection, sorting and treatment of products that have become waste (making available secondary raw materials and maximum extraction of value), reverse logistics, remanufacturing.

Manufacturing TEF in draft WP: TEF offering

- Physical and digital resources available to the facilities users for the testing and experimentation of their hardware and software solutions.

- Professional services support.

- Regulatory sandboxes are provided where relevant.

- Provides links with relevant and complementary EU projects such as EDIHs, as well as manufacturing data-spaces.

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Manufacturing TEF in draft WP: Outcomes (I)

- Validation in real conditions of next generation AI solutions in real-life manufacturing environments before putting products on the market.

- Common resource available to all European stakeholders to validate new AI-based solutions in real manufacturing settings.

- AI-powered manufacturing robotics and AI-based decision making tools.

- Boosting the adaption of AI led digital technologies in manufacturing.

- Reaching long time robotics autonomy levels at faster pace.

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Manufacturing TEF in draft WP: outcomes (II)

- Contribution to AI innovation:

  - Boosting the competitiveness of the European industry, including SMEs in AI, a technology of high strategic relevance.

  - Contributing to boost European IP and products based on European technology.

  - Creation of world-class experimentation facilities in Europe, offering a comprehensive support combining the necessary expertise, meeting the needs of European innovators.

  - Contributing to European technology sovereignty and strategic autonomy in AI, and AI-enabled solutions.

Manufacturing TEF in draft WP: what we look for

- Applicants will need to propose a long term plan over 60+ months:

  - 1) to build up or upgrade facilities with a resources and service offering,

  - 2) offer and extend the use of facilities to promising future AI based solutions providers, and

  - 3) to achieve long-term financial sustainability after EU funding stops.

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Next steps

Tentative Timing

- End of summer 2021: drafting of call text

- Q3-Q4: Matchmaking workshop for stakeholders

- Q4 2021: launch of call

- Ongoing: discussion with Member States on co-funding

- Always: please contact us if you have any questions

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Open discussion

Main outstanding questions

- What direction should the AI testing and experimentation facilities for Manufacturing take?

- How to achieve one large network of TEFs?

- How to ensure financial sustainability through a sound business plan?

- What specifics to consider for the Manufacturing sector at hand?

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Thank you for participating in today's meeting!

Minutes of the meeting will be shared soon.

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