



Testing and Experimentation Facilities under DEP

Smart Cities and Communities TEF Workshop

21 June 2021

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



Housekeeping

Slido hashtag:
#TEFs2021

- 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**

Agenda

1ST PART:

Member States and Stakeholders

14:15–14:30 – Participants dial-in

14:30–15:00 – EC presentation on TEF and past workshops

15:00–15:15 – Short input by stakeholders on TEF vision

- Martin Brynskov, Aarhus University
- Kaisa Sibelius, Forum Virium Helsinki
- Dirk Helbing, ETH Zürich

15:15 – 15:55 – Q&A discussion & Online poll

15:55 – 16:00 – Closing of 1st part

2ND PART:

Member States ONLY

16:00 – 16:10 – 3 Speakers open for questions by MS representatives

16:10 – 16:20 – discussion regarding needs and commitments

16:20 – 16:30 – Member State tour de table

16:30 – 17:00 – Open discussion

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

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Evangelia Markidou, Head of Sector

DG Connect - Unit A1: “Robotics & Artificial Intelligence Innovation and Excellence”

Outline

- Objective of this meeting
- TEF Concept
- TEF's role in the EU ecosystem
- Applying for TEF funding
- Co-funding TEFs
- Smart Cities and Communities specifics
- 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

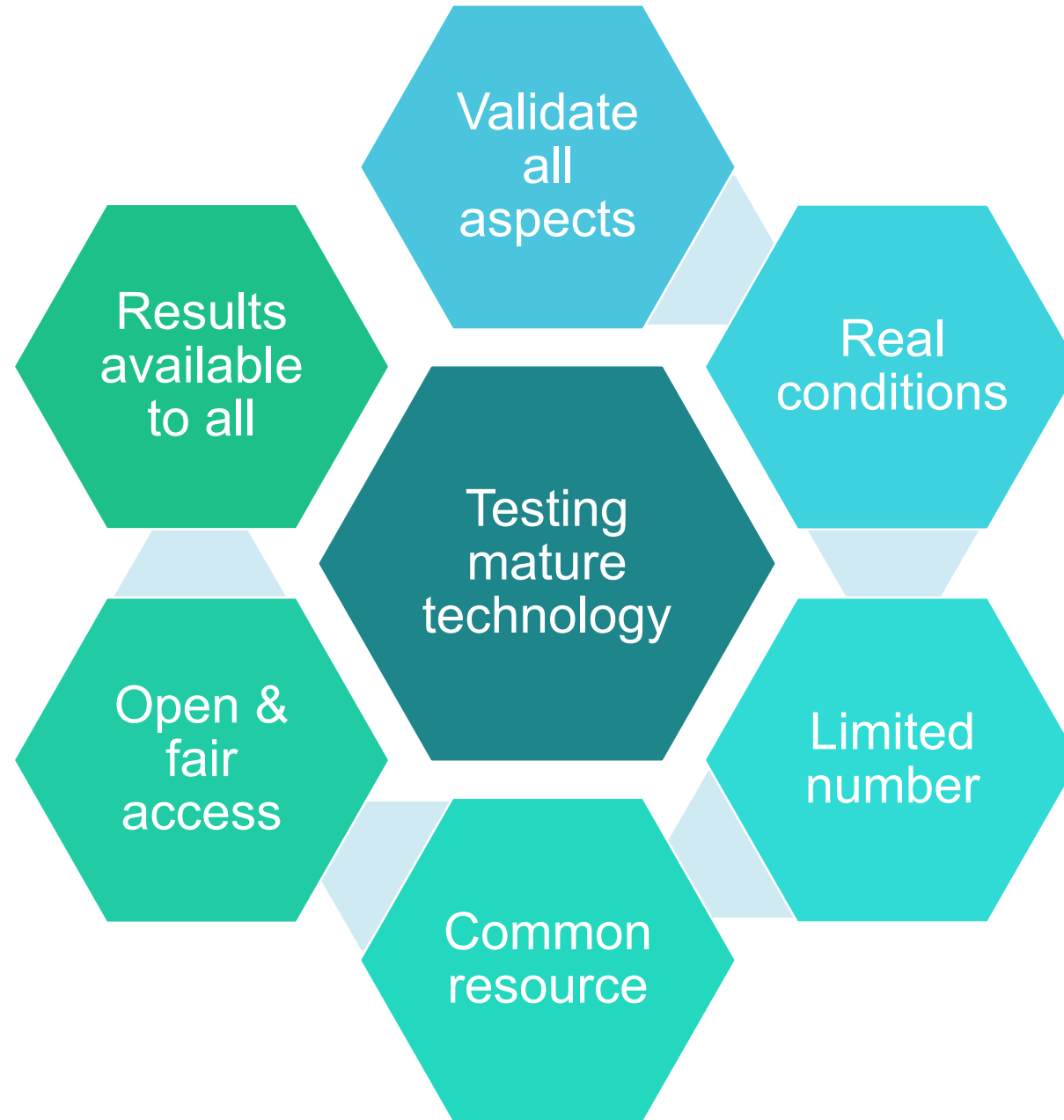
REAL SETTING

ESSENTIAL SECTORS

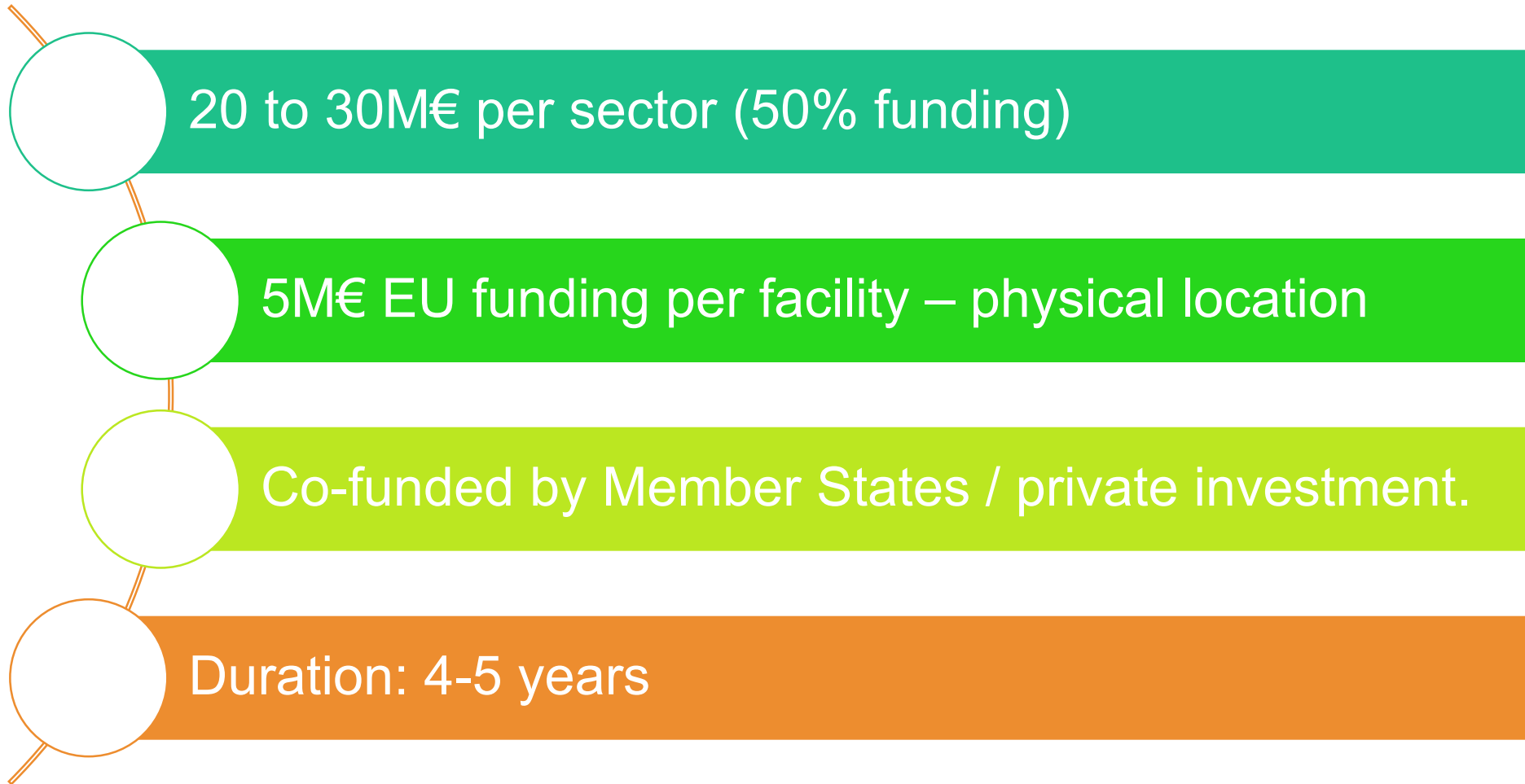
CONNECTED TO THE NETWORK OF DIGITAL INNOVATION HUBS

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

Concept



Sectorial TEFs in Numbers



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

For technology developers
!!! GUARANTEE IP PROTECTION

Involve
all stakeholders

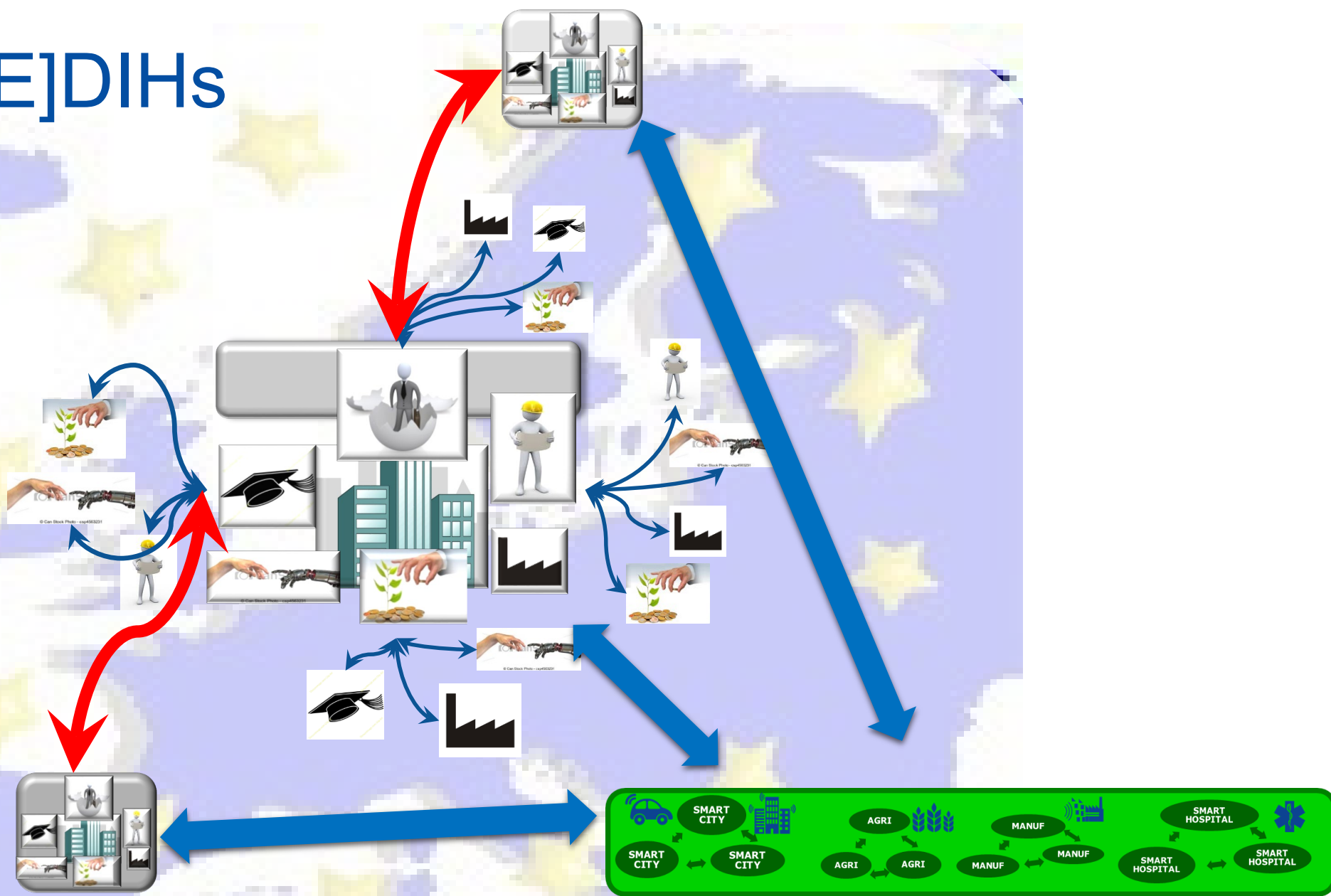
Use-case → optimise
impact

Physical location
+ remote access & digital
twins

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

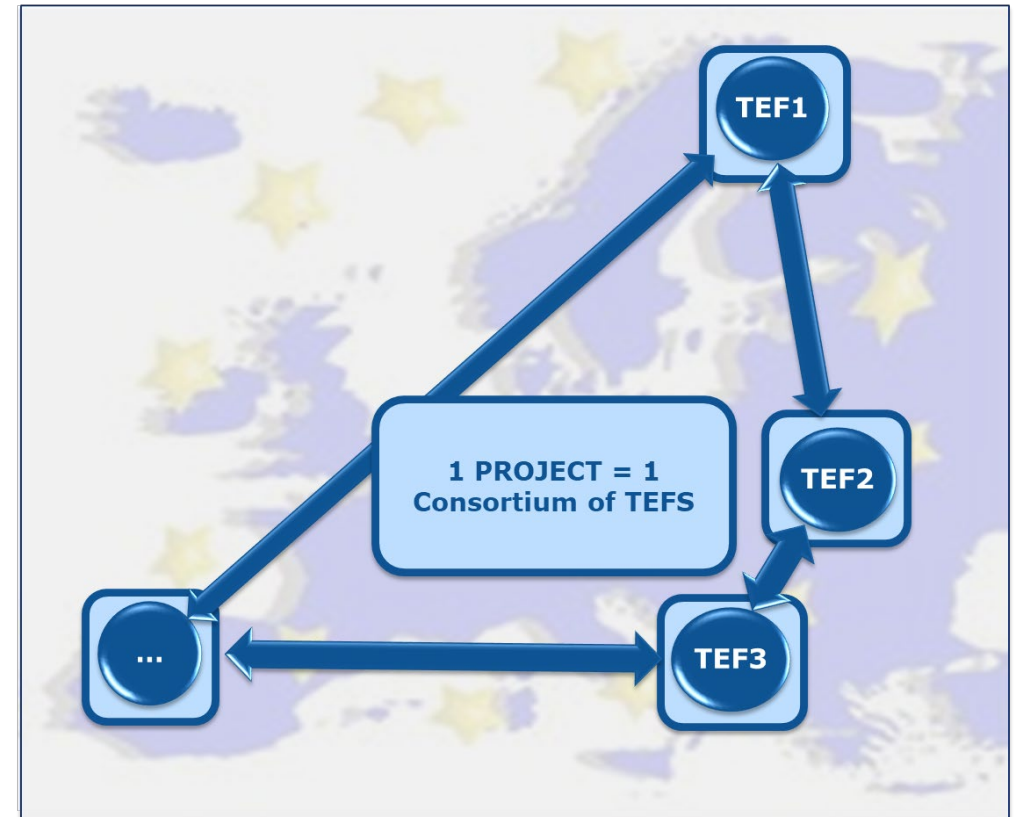
| CALLS & EVALUATION YEAR(S) | 2ND CALL (2021-22) SECTORIAL TEFs |
|---------------------------------------|--|
| Call Opening | Q4 - 2021 |
| Deadline for submission | Q2 - 2022 |
| Signature of contracts | Q4 - 2022 |

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

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)



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
- + Constraints 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

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

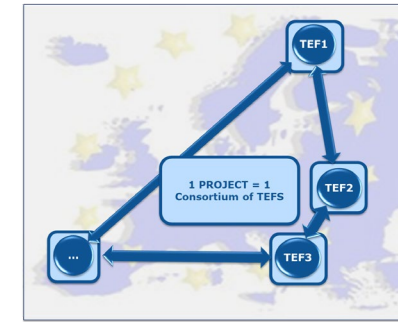
Member State Co-funding

Illustrative example (fictive)

| MS. | SECTOR |
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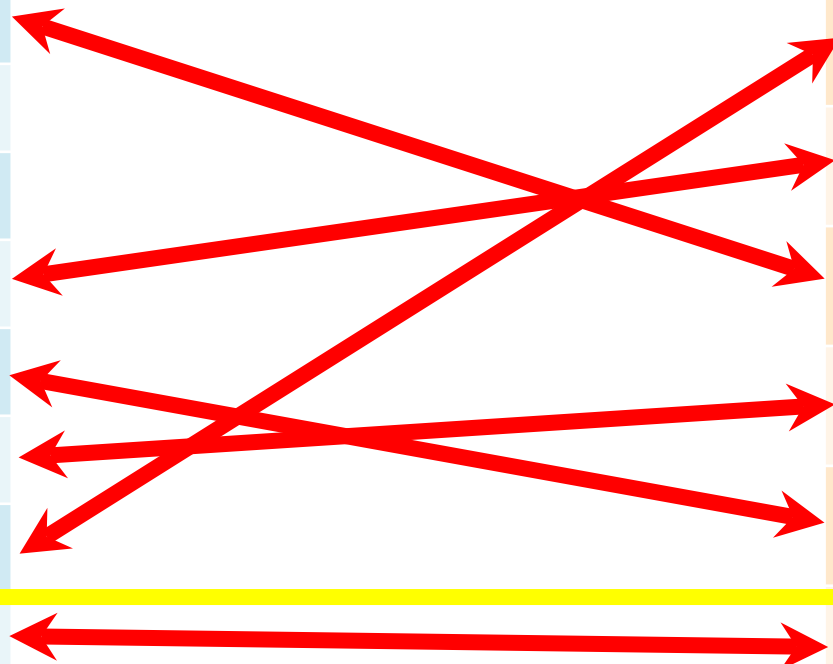
Member State Co-funding

Illustrative example (fictive)



| MS. | SECTOR |
|-------|--------|
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| CONSORTIUM MEMBERS |
|--------------------|
| CZ |
| DK |
| FR |
| LU |
| LT |
| PT |



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 headquartered in third countries!)**

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.

Important considerations

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

But the TEF is a 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.

Smart Cities and Communities

TEF

Take-aways from 2020 workshop

- Level of maturity of the smart cities sector makes it possible to launch TEFs in 2021
- Investment needs to cover both data-driven and physical systems, as both will be ground-breaking and innovative. Physical systems can significantly increase societal acceptance of AI.
- While data and data-related aspects are important, hardware (e.g. robots) and the necessity to test it before deployment needs a strong emphasis in line with the needs of the sector and the added value that TEFs can bring

Take-aways from 2020 workshop (1/3)

- Need to make TEFs easy to use from the perspectives of cost, skill level, geo-graphical distance and support offered.
- Conditions at TEFs should also be as close to real as possible.
- TEFs could play a role in providing certification/validation, thereby improving trust along the value chain in new technologies

Take-aways from 2020 workshop (2/2)

Needs:

- Common standards for testing and deployment.
- smart cities not a one-dimensional application domain, due to the inherent complexity confronting smart cities.
- Data quality and availability, as well as the reduction of environmental impact are key requirements.
- Need for connection to HPC resources (EuroHPC)

Take-aways from 2020 workshop (3/3)

Key challenges:

- environmental challenges
- Population growth
- engaged citizens
- resilience and orchestration of BD analytics and AI for the processing of geographically distributed data sources
- Focus on cities as well as on the needs of communities – importance of networks

Key applications and existing examples

- predictive traffic management / sustainable mobility planning / AI and robotics-powered logistics;
 - data-services related to extreme weather events to facilitate climate change adaptation, risk prevention and disaster resilience;
 - management of energy flows in a city/community specific context and in conjunction with other sectors;
 - targeting zero pollution (e.g. air, water, soil pollution or waste management lifecycle).
 - Inspection and maintenance of public infrastructures
- [Living-in.EU](#) - political declaration signed by 70+ EU cities and communities, setting out the ambition to digitally transform cities the 'European way'.
 - [AI4Cities project](#) – smart cities and greenhouse gases emissions reduction
 - [SynchroniCity](#) - cities and businesses develop IoT- and AI-enabled services through pilots
 - [Open & Agile Smart Cities \(OASC\)](#) – working towards a minimal technical ground for cities & communities.
 - [CLASS project](#) – sensor infrastructure, advanced mobility applications

Smart Cities and Communities TEF in draft

WP: Funding scope

- Reference testing and experimentation facility/ies with a focus on full integration, testing, validation, demonstration, and where appropriate certification
- technology infrastructure to ensure specific expertise and experience of testing mature technology in the sector, under real or close to real conditions
- physical and digital facilities for testing and experimentation of innovative AI-enabled and robotics-based services and solutions (e.g. optimisation of traffic flows) in close-to-real-life environment.

Smart Cities and Communities 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, lighthouses, AI on Demand Platform, local digital twins as well as data-spaces in its sector

Smart Cities and Communities TEF in draft

WP: Outcomes (I)

- TEF facilities to be deployed for an extended period of time to be used in pilots, testing, experimentation, as well as for sandboxing and to support standardisation and the implementation of the AI regulatory framework

Smart Cities and Communities TEF in draft

WP: Outcomes (I)

- faster integration of various AI and robotics systems in smart cities and communities, contributing to environmental goals such as **carbon neutrality**, increased **robustness**, **security**, and **agility** of smart community infrastructure, further increases in **efficiency**, as well as increased **competitiveness** of service providers in these communities.
- **validation** in real conditions of next generation AI-powered **robotics** and **AI-based automation**, decision-support and decision-making tools, benefitting from large-scale data access, sharing and integration bringing them to a higher TRL
- increased competitiveness of European developers of AI solutions, in particular SMEs, through the support provided by the TEFs, to bring their products to market.

Smart Cities and Communities TEF in draft WP: outcomes (III)

- 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 technological sovereignty and strategic autonomy in AI, and AI-enabled solutions;

Smart Cities and Communities 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 (physical and non-physical) 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.

Tentative Timing

Next steps

- 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

Open discussion

Main outstanding questions

*Slido hashtag:
#TEFs2021*

- What would be the challenges of implementing a TEF consortium for the entire call budget of 20 MEUR, consisting of several facilities in multiple countries?
- Do you have existing physical infrastructure in your country that can potentially act as a TEF facility?
- What specifics should the AI testing and experimentation facilities for Smart Cities and Communities take into account?

Thank you for participating in today's meeting!

Minutes of the meeting will be shared soon.