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EUROPEAN COMMISSION
DIRECTORATE-GENERAL FOR COMMUNICATIONS NETWORKS, CONTENT AND TECHNOLOGY

Artificial Intelligence and Digital Industry
Robotics and Artificial Intelligence

Reference Testing and Experimentation facilities in Digital Europe Programme

WORKSHOP REPORT ON REFERENCE TESTING AND EXPERIMENTATION FACILITIES FOR HEALTH AND CARE

23 January 2020

1.1. BACKGROUND: THE DRAFT ORIENTATIONS FOR THE PREPARATION OF THE WORK PROGRAMME(S) 2021-2022 OF THE DIGITAL EUROPE PROGRAMME:

[…] The first two years of the programme will focus on developing an infrastructure which offers businesses and the public sector access to AI tools and components and data resources, as well as reference testing and experimentation facilities in some prioritised application sectors.
Actions will focus on […]:

- **developing world-class large-scale reference Testing and Experimentation Facilities (TEF) for AI hardware, software, components, systems and solutions, and underlying resources (data, computing, cloud) in a number of sectors;[…]**

Developing Large Testing and Experimentation Facilities to provide a common, highly specialised resource to be shared at European level and foster the deployment of trustworthy AI in the following areas:

1) a common European platform to design and manufacture edge intelligence components and systems based on neuromorphic and quantum technologies;
2) reference sites for applications in essential sectors such as health, agri-food, manufacturing, smart cities and smart mobility (including environment and climate perspective).

This orientations document also stressed the strong links that will be established with the initiative to **establish EU-wide common data spaces**.

This report is based on the discussions held with industry **stakeholders** and **Member States** during the workshop on 23 January 2020, as well as on the answers provided to a detailed **questionnaire**, which was circulated to all participants before the Workshop. **25** stakeholders provided answers to this questionnaire and they have been taken into account in this report as well.

1.2. EXECUTIVE SUMMARY

Key lessons learned

- Health data accessibility is a fundamental pre-requisite.
- Good candidates for a TEF include smart hospitals, test beds, living labs.
- 50-100 million EUR is the suggested funding in order to have an impact in the sector.
- Experts and national delegations were evenly split on whether the EC should start the call for a health and care TEF in 2021 or 2022.
- Some Member States expressed interest in hosting a health and care TEF.
- There was a fair amount of focus on data and data-related aspects. However, for balance, and in the light of the role it can have in the healthcare sector, hardware (e.g. robots) and the

necessity to test it before deployment needs a stronger emphasis in line with the needs of the sector and the added value that TEFs can bring.

Summary of discussion

Industry players/groups, consumer groups and research and technology organisations (RTOs) present, such as BEUC, AAL programme, ACT, Helsinki University Hospital, OKRA Technologies and Swedish eHealth Agency,

- Existing **landscape**: Helsinki University Hospitals (HUS) runs 23 hospitals, access to real life data and seeks to develop real-life applications that improve existing solutions.
- **Needs** in the sector for TEFs:
    - **Data**: Data access and quality of data were seen as key challenges for the sector to develop AI applications.
    - **Certification**: TEF should offer certification as a service as for example CE approval is seen as vital for the commercial success of new products/services.
    - **Real-life conditions**: Testing technologies against data from the "real" world seems important to gauge the potential of commercial success.
    - **Collaboration**: Interoperability of the system is important to facilitate collaboration between different facilities.
- **Structure of the facility**: A clear majority favoured a smart hospital as the favourite TEF structure. Some experts cautioned that the sector also includes other important aspects such as the silver economy. Others reminded the workshop that testing should also include healthy people.

1.2.1. Existing Landscape:

In the workshop, the European Commission asked experts and Member States' representatives to provide examples of existing testing sites in the health and care sector. The examples provided and listed below do not influence the outcome of future calls, they serve only to illustrate the types of facilities, their setup, function, etc. Any Member State willing to provide to the European Commission additional examples of testing sites is welcome to do so.

During the **Workshop held on 23 January 2020**, presentations were made by several existing projects, initiatives, organisations and university hospitals, such as: BEUC – The European Consumer Organisation, ACT-The App Association's Connected Health Initiative, AAL Programme, OKRA Technologies, HUS – Helsinki University Hospital, Swedish eHealth Agency, Austrian Federal Ministry of Transport, Innovation and Technology.

Helsinki University Hospitals (HUS): operates 23 hospitals. HUS has a large pool of datasets of real-life data. HUS aims to develop solutions with economic impact that improve healthcare. For example, two years ago it created a digital health ecosystem to start projects to commercialise digital health and wellbeing innovation, e.g. treating diabetes and identifying rare diseases.

The AAL (Active & Assisted Living) Austria innovation platform started its programme in 2012 with a 3 year runtime, minimum 100 households per project and a control group, geographically spread out and with minimum 6 month evaluation. Services used included Fitness ILSE (a rehabilitation programme for retirees). First results were published in the report "Smartes Betreutes Wohnen" (smart assisted living) in 2018.

1.2.2. Needs and Impact

Needs

Issues: One expert asked the Commission what the ultimate purpose of the testing by TEFs was for the health and care sector as there are different types of testing, for instance regulatory approval (CE-

testing pre-market) and reimbursement testing (post-market), which lead to very different questions. A second expert also asked to clarify whether the TEFs would address healthcare workflows or clinical outcomes.

Experts discussed the needs of future TEFs for the health and care sector, highlighting several points shared by several experts:

- **Sandboxes:** Many believed that regulatory sandboxes were an important part of future TEFs. One expert cautioned that sandboxes should be temporary and not become a permanent loophole. Another made the case for regulatory sandboxes for data-sharing, arguing that using anonymization, one-off data access and high security measures would address privacy concerns. A third expert explained that in practice regulatory sandboxes are difficult to implement because of incoherent national and EU law. This is true for data issues where longer-term access needs to be clearly defined.

- **Validation/certification:** TEFs could play a validating role to make AI CE-market services. TEFs could provide services in AI innovation and development, AI clinical validation and AI testing. Even if TEFs could not provide CE validation, getting a certificate that the technology passed the AI health and care TEF test would already be of value.

- **Control:** The EU should put in place strong controls over any consortium when signing a contract and through service provision.

- **Collaboration**: Collaboration between different TEFs was seen as important. Interoperability would be an important measure to facilitate collaboration.

- **Common standards:** there is a need to move toward standard references, also to avoid duplication.

- **Data**: data collection, use and ownership is critical in healthcare, while ensuring security and privacy. Given the centrality of data to test AI, a framework to assess quality of data (ISO 8000-8) would be needed. Experts disagreed whether data centralisation was a positive or negative development. Several experts recommended investing in data curation.
- **Data** is essential for development and testing, for both big corporations and SMEs.

- **Test Beds**: As AI needs to be tested in real world conditions, test beds could be created in existing hospitals, or large clusters of hospitals. The main ingredient for a robust test bed is a sufficient amount of Data, allowing for training of the AI system. However, hospitals and the data they generate are not made accessible for innovative Start-ups. The barriers for innovative companies to engage in a collaboration with hospitals in Europe are significant. At present, it is easier for research institutions to achieve collaborations with hospitals. To develop, deploy and maintain an AI system it is crucial to work with AI start-ups and not only with research institutions.

- Data sharing with European AI healthcare start-ups, and working towards implementation of AI systems that automate mundane tasks and boost our competitiveness in Europe, for example: Automating triage of patients, Early detection of patient and Best treatment prediction

- **Care** (not just Health): one expert argued for focusing on areas beyond hospitals, including prediction, prevention, rehabilitation and support.

- **Easy access**: TEFs should be usable with limited administrative burden involved and should have support ready for users.

- **Market ready**: TEFs should promote solutions that are market-ready and are financially sustainable as a business model. The latter point is key if Europe wants to catch up with US and China as there is too little focus on financial viability.
- **Physical v digital**: Both digital and physical TEFs would be needed to test software, but also hardware.
- Development of specific **training programmes** for professionals related to AI, to expand their knowledge to design and implement health applications for personalized medicine. • Creation of new professional careers /job position combining AI with health concerns.
- Living lab facilities to test prototypes of AI applied to the health sector.
- Collecting data from a wide variety of subjects (infants, teenagers, adults, elderly) - high quality data collected longitudinally over entire lifespan
- Internationally agreed testing/validation protocols to assess performance of AI methods (e.g. gold standards for performance assessment)
- a common approach to interpreting the GDPR (currently, each country uses their own interpretation)

Points raised by individual experts on the needs of TEFs in the sector included:

- Legal compliance: the tests conducted at TEFs should include a demonstration of legal compliance, including consumer rights.
- Certification: a clear certification system is needed for security and privacy, especially in hospitals.
- Impact: one expert worried that some EU funded projects didn't have a real impact on society, which should be avoided for TEFs.
- New **Regulation** for anonymisation, pseudonymisation, synthesisation needed urgently to ensure access to data (technically available but often forbidden).
- Facilities/resources – proper testing, expert support.

Input from Questionnaires:

AI in healthcare must be safe, efficacious, and equitable, ensuring that algorithms, datasets, and decisions are auditable and, when applied specifically to medical care (such as screening, diagnosis, or treatment), are clinically validated and explainable. To reduce errors in AI healthcare applications, they need to be tested repeatedly. Such experimentation helps identify shortcomings of AI algorithms and allows technology providers to come up with innovative solutions. AI developers should consistently use rigorous procedures and must be able to document their methods and results.

Research and development of AI in healthcare needs to be supported and facilitated by **prioritizing and providing sufficient funding** while also ensuring adequate incentives (e.g., streamlined availability of data to developers, tax credits) are in place to encourage private and non-profit sector research.

From the perspective of patients / consumers it is crucial that **fundamental rights and other patients and consumer rights** can be effectively exercised in an AI and automated decision making (ADM) health service scenario. AI testing and experimentation should always include an evaluation of how such rights (for example regarding transparency, explanation, non-discrimination) can be exercised and how a public authority could enforce them. Such experiments and testing of products and services always include a demonstration of legal compliance and in particular that they are

obliged to comply with the concept of "trustworthy AI" as developed by the European Commission's high level group on AI.

Data: Usage of high-quality health data for the development of AI applications to reduce errors of AI-based decision-making and ensure its reliability; strong and harmonised data anonymisation rules; quality and security standards for all information systems where health data is generated, used or stored; more transparency on how data is used and by whom through the entire data use process; more clarity about who has access to data and has control over it, especially regarding the use of algorithm-based solutions and multiple-source data (e.g. data from electronic health records, connected medical devices or social media).

Access to relevant health data and/or synthetic data to validate algorithms. Sufficient clinical, scientific and healthcare IT expertise. Images with clinical annotations for validating medical imaging algorithms. Quality systems and processes to comply with different regulatory domains (EU MDR, US-FDA, Canada-MDSAP, etc.) so that software including algorithms can enter the healthcare market and be used in clinical setting.

The **implementation gap:** there's a lot of technology available, but implementation, i.e. ensuring end-users (both patients and carers) embrace innovation, seems to be the biggest hurdle. End-users need first to test/try out a new product/technology in an environment, which is not their own, where things can fail, where things are not life-threatening, etc.

P**rocessing power and the availability of appropriate data sets**. While processing power is quite easy to obtain, for example from the big players (Amazon, Microsoft, etc.), what makes the difference for SMEs is the availability of data. Early detection of physical and/or cognitive decline using data collected from existing home and personal devices would be an example of a challenge in this area.

Interoperability: Dry testing in a lab environment that resembles a real situation is extremely important. One of the most often-recurring cases when dealing with SMEs in testing facilities is that each company has their own specifications.

AI-based treatment platforms, e.g. for mental health, that need to be trained/tested on patients.

Use of **regulatory sandboxes** cannot be a preferred measure to speed up innovation. However, if the need for a regulatory sandbox is identified and justified, in order not to compromise patient/consumer rights and protections, robust criteria need to be developed first at an EU level to guide a case-by-case assessment by the relevant authorities/ institutions of whether a new product or service qualifies to enter a sandbox. Such a framework should be mandatory for all potential spending of EU funds on such projects.

The **regulatory framework musty be rigorous in the principles but light in the practical rules**. The effortoin implementation should be devoted to collecting and making data and knowledge available to everyone.

Impact

- **SDGs**: TEFs should work towards achieving Sustainable Development Goals (SGDs)
- **Better healthcare** if new AI-based solutions are tested repeatedly, therefore having better functionality and brought to market more easily.
- **Lower costs** providing healthcare if new AI-based solutions tested and brought to market.
- SMEs would benefit as they'd be more competitive and receive more funding.
- Positive impact on SME competitiveness and ability to grow/scale up successful products. SMEs need testing and validation services to enter the healthcare market, their AI solutions

must comply with the target market regulatory domain, which requires validation of algorithms and continuous monitoring of their real-life performance.

- Positive impact on health systems in four key areas: 1) enhancing population health, 2) improving patient experience, satisfaction, and health outcomes, 3) better clinician and healthcare team experience and satisfaction, and 4) lowered overall costs of healthcare.
- If European hospitals share their data and create open test beds for European start-ups, we can, together, develop and test AI systems in Europe. This will not only advance our research and innovation, and maximise our patient outcomes but will also allow us to reduce the waste of resources in healthcare.
- Testing contributes to ensuring consistent levels of quality assurance

Individual experts offered the following grand challenges for TEFs in health and care sectors:

- More efficient care, equal care, improved care
- Drivers: demographics, rapid tech development, governmental incentive
- Common definition data structure , storage and availability.
- Accreditation of AI project to be made publicly available.
- Access to relevant data for secondary use while protecting the integrity of the data subject.
- Shortage of skilled labour (education, diversity among AI developers).
- If the EU wants to keep leading on "responsible AI", health is certainly a sector to prove this leading position.

Promising areas/major use-cases:

- Typical devices are **sensors, actuators, gateways, personal computers, smart-phones, home appliances, assistive robots, wearable devices and e-textile**, etc. This enables SMEs to research certain areas, such as deficiencies, the best market, creating a good business model, creating user-friendly innovation and determining the end-user's needs.
- Mammography (in particular mammography algorithm testing), Radiology in general, Pathology, Dermatology, Cardiology, Long-term care
- AAL technology for **comfort, security, fall detection/prevention, support for cognitive issues, mobility support** represent some of the most promising areas. Co-creation remains essential in the development, testing and validation of technologies.
- For Silver economy-related markets, mobility, communication, home environments, telehealth and leisure are the future and have great potential.
- Imaging, diagnostics in general, natural language processing. Digital pathology, radiology, preventive self-assessment and interventions to prevent diseases. User involvement.
- Testing would be valuable for use cases such as aggregation, analysis, and processing of large datasets from disparate data sources, replicating specialist-level expertise in **diagnostics, remote patient monitoring and virtual disease management via medical imaging and healthcare bots**, for example.
- **Diabetic retinopathy and visual data processing** in the radiology context are existing, successful use cases that should be considered. Further examples include chatbot

gatekeeping/screening of patients, patient risk identification based on patient generated health data collected via remote patient monitoring systems, natural language processing, and others.

- The **processing power and availability of the appropriate data sets**. While processing power is quite easy to obtain, for example from the big players (Amazon, Microsoft …) what makes the difference, for SMEs, is the availability of data. Early detection of physical and/or cognitive decline using data collected from existing home and personal devices may be an example of a challenge in this area.
- Infrastructure close to the Hospitals and End Users to help accelerating development and testing on real spaces with real needs.
- Predictive computational models to simulate the behaviour of tissues in degenerative pathologies (e.g. Alzheimer, Parkinson, neurodegenerative diseases, etc.), cancer, muscular damage, etc.
- Significant advancements in AI enabling a new generation of collaborative and context-aware robots and systems to help health professionals in their daily activities.
- **Other**: Automatic safety and surveillance solutions, Health chatbots, routine task automation, Data fusion and knowledge representation

1.2.3. Structure of the "facility"

It is necessary to achieve a good compromise between the needs of economies of scale and the excessive concentration of this strategic resource. This could mean one facility in a region of 5 million inhabitants, if it is well organized. Needed staff is estimated to five (5).

TEFs should be well connected locally and very flexible in terms of technologies. Equally, there should be a network of centres/hospitals to enable scaling up that addresses needs in different EU markets.

One expert proposed to have an AI healthcare network with cloud platform and AI capacity for hospitals in Europe. These resources would meet the needs of doctors to get useful results from AI and data-based solutions and address the rising budget constraints as IT budget needs increase. This proposal is cost-sharing and enhancing current capabilities.

The structure of the facility should include high-speed internet and data computing. Getting trust from the population was seen as essential and having one organisation for complete health care as preferable.

A digital testing site for software and a physical one for hardware, e.g. hospital, might be a good way to structure the TEFs, but the digital TEF would only be possible if data is more generally applicable.

TEFs should also offer testing for solutions outside of hospitals, as the sector is more diverse than hospitals and that otherwise the focus would be skewed towards the sick (little work on prevention for example.

Input from Questionnaires:

The inputs from the questionnaires varied greatly on the desired structure and composition of the facilities, for instance:

- Multiple sites are preferable, with geographic diversity, to ensure that the number of companies across the EU that can benefit from these facilities is maximized.

- Regulatory sandboxes could be helpful with regards to quality assurance, privacy and security frameworks, ethics and bias issues, and accessibility.
- A programmed or institutionalized voluntary public-private partnership including cooperation agreements between different testing sites could be beneficial.
- TEF specialisation is desirable, for example one facility to focus more on independent living, another on institutional care, another on medical technology, one on comfort technology and others.
- Involving older adults in testing would require knowledge of the native language and good reward mechanisms.
- Building on top of University Hospital Networks with 10-15 sites across Europe should be the starting point. A few centres supporting the hospital sites regionally or based on the hospital's maturity, centres focusing on governance, collaboration, common data models and IT technologies driving trusted data sharing.
- Needed infrastructure: Processes and tools to get data from primary data sources and pool data into repositories for secondary use. Scalable and high-performance cloud-based IT infrastructure to enable data storage, processing and algorithm development. Common data models to harmonize datasets across sites and to enable distributed processing. Quality systems, development processes and services that are needed to make AI solutions compliant and CE marked.
- Collaboration should build on important clinical and population health needs that the healthcare system actors are willing to collaborate on. Governance structure that is sufficiently agile is needed to succeed in the fast moving environment. European university hospitals are general hospitals but some focus on specialties is possible, based on their clinical and scientific interests and AI adoption capabilities in the clinics.
- The focus is likely to depend on the concrete infrastructure and human resource needs for testing AI. Whereas is it likely to find quality healthcare workers throughout Europe, there will be variability in the amount of certain data (e.g. images, genomes) available, the amount of certain procedures (e.g. surgical) performed, the amount of patients with certain diseases, etc. There could very well be a mix of different sized sites to achieve economies of scale (small number of large sites with broad capacities) while enabling us to capture variability (localization sites that are not as dependent on expensive infrastructure).

1.2.4. Timing

The majority of **experts and national delegations** at the workshop believed that the sector is ready to absorb funding for TEFs. In a **live poll** conducted at the workshop, 47% believed the call should be made in 2021, while 43% it should be in 2022 and 7% in 2023-24. Only 3% thought the call should be done in 2025-26.

One expert said that knowledge of medical devices regulation is sometimes lacking in SMEs, indicating that the sector is not fully mature in Europe. However, the sector is ready to move forward and get funding. Concretely, in 2020-21, the Commission could define the process to make data available/select relevant databases, etc. After, the data could be made available.

One expert said that TEFs should be as long as possible, 4-5 or more years.

Input from Questionnaires:

The readiness of the health care sector to do the breakthrough toward a new approach that makes more and better use of information technology, not only for management but for care deployment, is

quite different both in the various European regions and locally in the different structures. Yet, due to international collaboration and previous experience in EU projects, collaboration can be built quite quickly. The highest priority must be given to technology that helps primary and secondary prevention, **moving from the treatment approach to the preventive and functional approach**.

The technology exists, health data regulation, governance structures and practices need to develop. Collaboration practices and maturity to adopt AI solutions in clinics varies. It is necessary to move forward now.

Proposed timeline from one of the questionnaires:

2021 - 2022: AI test facilities for Early risk assessment of chronic diseases in real-life, dealing with real-life data, frameworks for guaranteeing harmonised, high-quality data.

2021-2022: Set up of co-creation facilities (technology and healthcare services)

2027: Different diseases, management of patient state and targeted interventions

2027: Fully integrated co-creation facilities with healthcare service units

1.2.5. Funding:

In a live poll, experts and national delegations gave the following feedback on funding:

- 58% believed that the minimum funding needed to make an impact in the sector is at 50 mio EUR. Others believe this threshold to be at EUR 35 mio (32%) or at EUR 20 mio (10%).
- 54% thought that the minimum funding per facility should be at EUR 10 mio and 46% want it at EUR 20 mio.
- 67% said that national funding, e.g. from national strategies, should be the source of Member State co-funding for the facility and travelling. 13% believed it should be regional funding and 20% said it should be other sources.
- A clear majority (62%) believed that the remaining 50% of the Member State funding for the facility should be covered in kind and in cash, while 15% said it should be in cash and 23% in kind.
- 35% said that no reimbursement of costs other than travel should be made, while 29% believed that non-travel costs should be reimbursed by the grant at 25%, 26% that it should be at 50% and 6% it should be at 100%. 3% said non-travel costs should be reimbursed at 75%.
- 59% said they would invest 5-10% of the grant in travel costs, while 22% said they would use 10-20% and another 16% would use up to 5%. Only 3% would use more than 20% for travel costs.
- 53% said they would invest 25-50% of the grant in equipment and facilities, while 27% would invest 50-75%. 10% would invest up to 25% of the grant in equipment and facilities and another 10% would invest 75-100%.
- 69% said they would invest 50-75% of the grant in personnel costs, including subcontracting. A minority would invest either 25-50% (22% of the respondents), 75-100% (6% of the respondents) or up to 25% (3% of the respondents).

In individual contributions, the following points were made by experts:

- Member States co-funding should have interoperability and focus on purchase of the right equipment and reimbursement of end user involvement. Creating a network and ecosystem was seen as crucial.
- Triple helix axis approach to funding as most appropriate.
- The infrastructure of the facility should be covered 100% by the grant as otherwise the entities running or investing in TEFs would fund other people, potentially competitors, with their own funds.

Input from Questionnaires:

- The allocation of EU research funds should be conditional on public return. Focusing both on the relevance to consumer and societal needs and challenges, and on the accessibility (incl. affordability) of the innovation resulting from this research. For the sake of accountability, there should also be greater transparency on EU funding of research.
- Co-investment will most likely happen only if one of the test centres is located inside the respective member state/region.
- Private co-investment would make sense, because the private sector is one of the main beneficiaries of such a system.
- 50-100M Euro, 2-4 Sites, collection of large clinical and genetic datasets.

1.2.6. EU Added value:

One expert argued that the EU added value of TEFs would lie in streamlining funding, speeding up the time to market and uptake of AI solutions as well as facilitating international partnerships. Another said the biggest contribution would be avoid duplication at national level through harmonising European research and testing.

Input from Questionnaires:

- Participation in testing and experimentation processes at TEFs will enable easier scaling of products and more effective deployment.
- International and European partnerships present an opportunity for the Commission to create a connected health system that maximizes its potential by removing barriers to advanced technologies in healthcare.
- The Silver Economy expects an enormous scale of economy: ageing of society, shortage of carers, spending power of pensioned people, etc. Figures of a Technopolis study: baseline forecast is for total Silver Economy consumption to grow by approximately 5% per year up to 2025 to €5.7 trillion.
- No single Member State is big enough to compete with Big Data provided by the biggest countries of the world; collaboration is key to keep AI development and testing in the EU
- AI development and testing relies on large amounts of data for each particular question that the digital solution is meant to answer. From that perspective, there is not one, but many health data spaces. Each of these can only be meaningful by pooling data across Europe.

1.2.7. Ecosystems – access to value-chains:

One expert stressed that staff needs to be ready to adapt and change to new requests from clients, requiring training to handle these situations.

Another expert identified the key stakeholders: health care, social care, academic, government, patients.

Input from Questionnaires:

According to several questionnaires, the supply chains are ready.

Regarding the testing and experimentation facilities, all of the suggested resources should be provided, especially to help small and medium-sized enterprises that may lack access to those resources in-house. Participation in a testing and experimentation facility should enable companies to preserve all of their intellectual property (IP) rights (i.e., such participation should not be conditioned on forfeiting IP rights).

1.3. CONCLUSIONS:

There was a fair amount of focus on data and data-related aspects. However, for balance, and in the light of the role it can have in the healthcare sector, hardware (e.g. robots) and the necessity to test it before deployment needs a stronger emphasis in line with the needs of the sector and the added value that TEFs can bring.

The experts and national delegations were asked to participate in a live poll at the workshop and gave the following indications on **funding, timing, collaboration mechanisms and project structure**:

- The majority of **experts and national delegations** at the workshop believed that the sector is ready to absorb funding for TEFs. 47% believed the call should be made in 2021, while 43% it should be in 2022 and 7% in 2023-24. Only 3% thought the call should be done in 2025-26.

- The majority (59%) wanted to have few (no more than 10) TEFs to be spread geographically. 28% believed there should be many TEFs (more than 10) spread geographically. A clear minority wanted the TEFs to be geographically concentrated (3% wanted few TEFs to be geographically concentrated and 9% wanted many TEFs to be geographically concentrated).

- 58% believed that the minimum funding needed to make an impact in the sector is at 50 mio EUR. Others believes this threshold to be at EUR 35 mio (32%) or at EUR 20 mio (10%).
- 54% thought that the minimum funding per facility should be at EUR 10 mio and 46% want it at EUR 20 mio.
- 67% said that national funding, e.g. from national strategies, should be the source of Member State co-funding for the facility and travelling. 13% believed it should be regional funding and 20% said it should be other sources.
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- 59% said they would invest 5-10% of the grant in travel costs, while 22% said they would use 10-20% and another 16% would use up to 5%. Only 3% would use more than 20% for travel costs.
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- 69% said they would invest 50-75% of the grant in personnel costs, including subcontracting. A minority would invest either 25-50% (22% of the respondents), 75-100% (6% of the respondents) or up to 25% (3% of the respondents).
- A clear majority (66%) preferred a consortium to handle the grant for several facilities rather than an individual partner (34%).
- When asked on collaboration, experts and national delegations preferred to put systematic mechanisms between the TEF and other relevant projects like DIHs, data spaces and the AI-on-demand-platform in place (58%). Data exchanges were the second most preferred option to ensure good collaboration with other relevant projects (21%). Other, less popular options included contractual agreements such as MoUs (9%), open standards, open data and software platform (9%) and a coordination and support action (3%).