



CALL FOR EXPRESSION OF INTEREST TO PARTICIPATE IN THE IMPORTANT PROJECT OF COMMON EUROPEAN INTEREST ON CLOUD INFRASTRUCTURE AND SERVICES (IPCEI-CIS)

Luxembourg 2 April 2021

1. Background:

The need to strategically invest in the next generation of European cloud and edge capacities has been emphasized in the recent European Strategy for Data, in the EU Flagship area “Scale up” under the Recovery and Resilience Facility put forward by the EU Commission, in the European Council Conclusions of 1-2 October 2020 and in the Member States’ Joint Declaration on Building the Next Generation Cloud in Europe, which Luxembourg signed on the 15 October 2020.

Several Member States including Luxembourg are now working together to offer a coordinated industrial response with significant European relevance through the development and delivery of an Important Project of Common European Interest (IPCEI) on Next Generation Cloud Infrastructure and Services (CIS). This IPCEI will strategically contribute to effectively foster European data leadership and digital sovereignty; stronger and sustainable competitiveness of the EU economy and; the flourishing of smart cloud and edge solutions which are highly innovative, fully interoperable, highly secure, fully energy efficient and respectful of privacy. This will increase the sustainable and competitive adoption, access and choice for the end-users across the EU territory.

The IPCEI will foster the development of the next generation of highly scalable, federated, interoperable, trustworthy and energy-efficient cloud and edge infrastructures, services and platforms and leveraging when relevant existing national initiatives, the GAIA-X open source architectural framework and edge telco computing services to deliver on the EU Data Strategy.

The IPCEI will have benefits for businesses, public entities and wider to citizens in terms of secure access, seamless use and power-efficient processing of their data in real-time with ultra-low latency and highly secure features from anywhere across the EU territory while not being subject to laws of foreign jurisdictions. The IPCEI will equip the EU with advanced and federated cloud and edge capabilities based on interconnection services and interoperable platforms. This will ultimately result in fostering the resilience and competitiveness of European industries and public entities while paving the way for cutting-edge digital innovation, products and services meeting end-users’ demands.

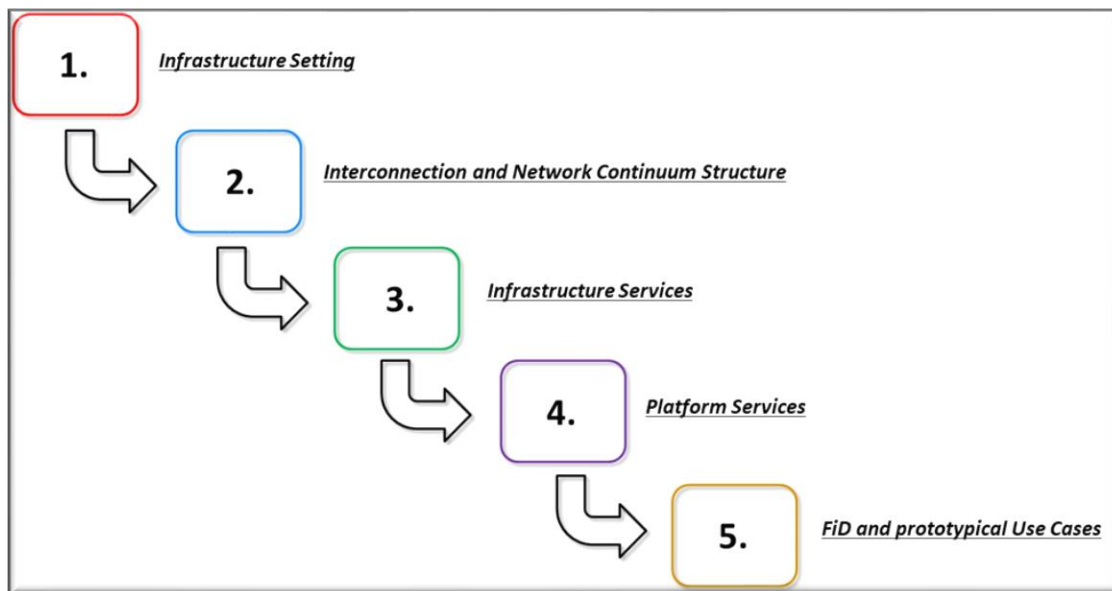
The IPCEI will comprise both the research, development and innovation (R&D&I) and the first industrial deployment (FID) of the next generation of cloud and edge infrastructure and services including the associated middleware based on cutting-edge open-source frameworks and distributed sustainable and highly scalable architectures. The IPCEI will benefit to sectors of the European Economy such as ICT, manufacturing, energy, mobility or healthcare.

Following a declaration of intent to contribution to the IPCEI-CIS initiative, the Luxembourg Ministry of the Economy wishes to conduct a Call for Expressions of Interest to participate in an IPCEI on cloud infrastructure and services in order to identify and qualify potential industry projects that could be eligible for participation.

The purpose of the call is to compile a short-list of specific interested parties and potential Luxembourg industry projects that might qualify for support and be included within the contribution of Luxembourg to this important European initiative. Expressions of interest submitted by Luxembourg parties is non-binding and will not be considered as a formal application for state aid.

2. Scope

Applicants should prioritize their interest in specific areas along the core cloud infrastructure and service value chain (1 to 5) indicated schematically below, and in particular amongst the areas in the current draft scope of the IPCEI-CIS detailed below:



IPCEI-CIS Value Chain Main Core (draft)

- **Topic 1: High interoperability and portability of Data and Services:** Creation of the next generation of a holistic, high-performance, ecosystem which guarantees a high degree of interoperability and portability through the technologies and functions used, in particular in machine-to-machine communication (IoT) in combination with AI services in real time.
- **Topic 2: Next generation of digital services:** Increase in flexibility and optimization of data permeability across producers and suppliers to enable market-compliant, resource-efficient, digital offerings based on data and services (in real time).
- **Topic 3: Next generation of edge-cloud cyber security services:** Taking advantage of the geographically distributed and highly interoperable cloud and edge capacities will boost the creation

of specific information exchange platforms for threats, vulnerabilities and malicious campaigns as well as the creation of cloud-adapted threat detection and incident response tools and services.

- **Topic 4: Tackling the specific challenges of mobile edge computing:** Edge computing services are critical for the success of 5G/6G services, as they allow fulfilling the strict latency requirements of mobile real-time applications. Roaming scenarios demands to build up a specific architecture for interoperability among network operators and the seamless deployment of value-added applications across Europe.
- **Topic 5: Development of technologies and software:** Development of technologies at infrastructure level with hardware, data centers and software with specific services, data, with ontologies and the required interfaces and development tools.
- **Topic 6: State-of-the-art energy efficiency:** Focusing on the energy efficiency of infrastructure and services levels, to optimize and reduce the energy consumption of cloud and edge services with e.g. an artificial network control, load balancing and state-of-the-art technologies.
- **Topic 7: Building a distributed processing based on AI models:** Latest techniques, like federated learning, will enable robust models integrating edge computing devices and services, and exploiting large distributed datasets with privacy constraints, in particular those associated to health.
- **Topic 8: Boosting of secure data-privacy and Cyber Security:** Radically raising the cyber security levels of this infrastructure by controlling the complete technology- and software stack.

3. Procedure for submission of expressions of interest

Applicants should submit a brief word document (maximum two pages) expressing their value chain focus, their specific area of interest from amongst the 8 topics detailed in the scoping list above, along with a brief outline of their potential industrial project and contribution, to the following email address IPCEI-CIS@eco.etat.lu, which will also serve as a point of contact.

Completed expressions of interest must arrive at the Ministry by Friday 16 April 2021.