



Manifestaciones de interés relativas a la participación en el potencial Proyecto Importante de Interés Común Europeo (IPCEI) de Infraestructuras y Servicios en la Nube¹ en el marco del Plan de Recuperación, Transformación y Resiliencia

¹ "Important Project of Common European Interest on Next Generation Cloud Infrastructure and Services" (IPCEI-CIS). A lo largo del documento, las referencias a "la nube" incluyen tanto lo que tradicionalmente se denomina "cloud" como el concepto de "edge".

Introducción

El 27 de abril de 2021, el Gobierno aprobó el Plan de Recuperación, Transformación y Resiliencia², entendido como un proyecto de país que orienta la modernización de la economía española, la recuperación del crecimiento económico y la creación de empleo, la reconstrucción sólida, inclusiva y resiliente tras la crisis de la COVID, dando respuesta a los retos de la próxima década.

El nuevo Fondo de Recuperación *Next Generation EU* permitirá a España movilizar un volumen de inversión sin precedentes. En efecto, el acuerdo del Consejo Europeo prevé financiación por hasta 140.000 millones de euros en transferencias y créditos en los próximos seis años, un 11% del PIB de 2019.

La movilización de un volumen tan importante de recursos abre una oportunidad extraordinaria para nuestro país, comparable a los procesos de transformación económica producidos a raíz de la incorporación a las Comunidades Europeas en los años 80 o la creación del Fondo de Cohesión europeo en mitad de los 90. Permitirá no solo la superación de la crisis y la recuperación del empleo, sino que facilitará la modernización de nuestra economía, para que esa recuperación sea verde, digital, inclusiva y social. Se pondrán en marcha transformaciones y reformas estructurales dirigidas a la transición hacia una economía y sociedad climáticamente neutras, sostenibles, circulares, respetuosas con los límites impuestos por el medio natural y eficientes en el uso de recursos.

Dentro del Plan, el componente 15 denominado “Conectividad digital, impulso a la ciberseguridad y despliegue del 5G” responde a la iniciativa emblemática “Conexión” descrita en la “Estrategia anual de crecimiento sostenible 2021”. Se trata de un componente de naturaleza transversal, donde se concentran todas las reformas e inversiones relativas a conectividad digital y 5G que se realizarán en España con cargo al Mecanismo de Recuperación y Resiliencia. Sobre la base de las infraestructuras disponibles, se plantean un conjunto de reformas e inversiones orientadas a completar el acceso a la conectividad en todo el territorio nacional, el despliegue del 5G, tanto en relación con las infraestructuras como en lo que respecta a la innovación tecnológica en sectores tractores, y el impulso del ecosistema de ciberseguridad del país, reforzando el papel de España como uno de los polos tractores de digitalización en el conjunto de la UE. Los proyectos del componente se corresponden con parte de dos de los Planes adoptados por el gobierno de España en diciembre de 2020 para desplegar la agenda **España Digital 2025: la Estrategia para el impulso de la tecnología 5G y el Plan para la Conectividad y las Infraestructuras Digitales**. Uno de los apartados destacados dentro del Plan para la Conectividad es el dedicado a la participación de España en proyectos multipaís de Infraestructuras Digitales Transfronterizas, donde, entre otros, se desarrollará el IPCEI de Nueva generación de servicios e infraestructuras cloud.

² <https://portal.mineco.gob.es/es-es/ministerio/areas-prioritarias/Paginas/PlanRecuperacion.aspx>

En el contexto de la Unión Europea (UE), la necesidad de realizar inversiones estratégicas en una nueva generación de infraestructuras y servicios en la nube ha quedado recogida en la Estrategia *Digital Compass 2030*³, la Estrategia Europea de Datos⁴, en las Conclusiones del Consejo Europeo de los días 1 y 2 de octubre de 2020⁵ y en la Declaración conjunta de los EE.MM. sobre la construcción de la nube de próxima generación en Europa, de 15 de octubre de 2020⁶.

Este potencial IPCEI se centrará en el establecimiento de infraestructura y servicios de vanguardia repartidos por toda Europa con tecnologías innovadoras y capacidades de tiempo real que ahorren energía, sean seguras, altamente eficientes y estén interconectadas entre sí, sentando las bases para la próxima generación de economía europea del dato. Los objetivos del IPCEI, alineados a su vez con los objetivos definidos en la Estrategia Europea de Datos, el Acuerdo Verde, la Estrategia industrial Europea y el Mecanismo de Recuperación y Resiliencia, incluyen:

- 1) Habilitar el continuo *cloud-edge* de múltiples proveedores
- 2) Impulsar la seguridad informática y la resiliencia.
- 3) Fortalecer la industria digital de la UE.
- 4) Incrementar la eficiencia energética.
- 5) Establecer una arquitectura de referencia abierta, global y federada para el *edge computing* en telecomunicaciones móviles basada en *cloud*, y habilitada por 5G y las futuras "Gs", además de otros sistemas de nube en el perímetro.
- 6) Desarrollar tecnologías europeas de código abierto.
- 7) Desarrollar tecnologías de mejora y procesamiento de datos seguros respetuosos con la privacidad
- 8) proporcionar una infraestructura abierta y accesible en Europa.
- 9) Implementar casos de uso altamente escalables para industria y servicios.
- 10) Generar efectos de arrastre positivos en diferentes sectores.
- 11) Fomentar habilidades y competencias.

Esta petición de manifestaciones de interés se enmarca en la medida I5 del mencionado Componente 15, "Despliegue de infraestructuras digitales transfronterizas", y más concretamente, desarrolla la participación de España en proyectos multipaís de Infraestructuras Digitales Transfronterizas, actuación a la que pertenece este potencial IPCEI de Nueva generación de servicios e infraestructuras *cloud*. El alcance del proyecto será proporcionar un acceso competitivo y justo a la nube de próxima generación y las capacidades de borde (*edge*) desde cualquier lugar de la UE. De manera flexible, el proyecto apoyará la construcción de la próxima generación de infraestructura de procesamiento de datos paneuropea soberana, segura, interoperable, multiusos y neutral en relación con el

3 <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021DC0118&from=es>

4 <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1593073685620&uri=CELEX:52020DC0066>

5 <https://www.consilium.europa.eu/media/45910/021020-euco-final-conclusions.pdf>

6 <https://ec.europa.eu/digital-single-market/en/news/towards-next-generation-cloud-europe>

proveedor que esté interconectada, distribuida y escalable. Incluirá el desarrollo y despliegue de capacidades de borde en tiempo real (muy baja latencia); el diseño de plataformas middleware seguras, de bajo consumo e interoperables para múltiples usos sectoriales; y el desarrollo e implementación de la nube inteligente y los servicios de borde de carácter ultra-seguro, en tiempo real y de bajo consumo de energía

El fin último del IPCEI será fortalecer el sector *cloud* en España y en la UE -en particular su oferta industrial- a lo largo de toda la cadena de valor que se define en el **Anexo I** del presente documento, facilitando el próximo despliegue de infraestructuras, productos y servicios con un elevado componente de innovación y de valor añadido en relación con el estado del arte actual.

Objeto.

Para garantizar la eficacia del Plan y asegurar la eficiencia en el desarrollo de los distintos proyectos, el Ministerio de Asuntos Económicos y Transformación Digital, en colaboración con el Centro para el Desarrollo Tecnológico Industrial E.P.E. (CDTI), publica la presente **petición de manifestaciones de interés con el objeto de identificar a las empresas españolas que podrían participar en un potencial Proyecto Importante de Interés Común Europeo (IPCEI) de Infraestructuras y Servicios en la Nube y en las futuras convocatorias que lo financien.**

La información que se recopile mediante estas manifestaciones de interés tiene como objetivo ayudar a la definición de las líneas estratégicas de actuación en este ámbito, así como, en su caso, los mecanismos de financiación asociados.

Presentación de manifestaciones de interés.

El **plazo de presentación** de las manifestaciones de interés comenzará el día 25 de junio de 2021 y finalizará el día 23 de julio de 2021, a las 12:00 horas del mediodía, hora peninsular. Las manifestaciones de interés recibidas después de esta fecha no serán tenidas en cuenta.

La cumplimentación y presentación de las manifestaciones de interés deberá realizarse obligatoriamente a través de la sede electrónica del Centro para el Desarrollo Tecnológico Industrial E.P.E. (<https://sede.cdti.gob.es/AreaPrivada/Expedientes/accesosistema.aspx>), lo que requerirá el registro previo de los proponentes en el sistema de entidades de CDTI.

La presentación de la documentación requerida se realizará mediante firma electrónica cualificada y avanzada. El certificado electrónico con el que se realice la presentación deberá corresponder al representante legal o apoderado de la empresa solicitante.

Las manifestaciones de interés deberán incluir la documentación que se relaciona a continuación (los formatos de fichero admitidos para toda la documentación son los que

corresponden a las siguientes extensiones: «pdf», «rtf», «txt», «doc» y «xls» y en ningún caso superará 3 Mbytes de información):

1. Memoria de la manifestación de interés, según el formato y contenido mínimo reflejados en el modelo del **Anexo II** del presente documento.
2. Dos anexos a la memoria, según el formato y contenido mínimo reflejados en el modelo del **Anexo II** del presente documento.
3. Declaración responsable de la entidad del cumplimiento del Reglamento (UE) 679/2016, de 27 de abril de 2016 (Reglamento General de Protección de Datos) y de no estar sujeta a legislaciones ajenas a la Unión Europea en materia de protección de datos, según el formato del modelo del **Anexo III** del presente documento.
4. Escrituras de constitución de la empresa proponente.

Tanto la memoria como los anexos se deberán presentar en **inglés** (con la única excepción de la declaración responsable, que deberá ceñirse al modelo incluido en la memoria). La memoria tendrá una **limitación de 35 páginas**. Las memorias que superen el límite establecido no serán tenidas en cuenta para su análisis.

Los proponentes podrán remitir una única manifestación de interés, que podrá incluir a otras entidades como colaboradoras. La subcontratación no se considerará colaboración efectiva.

Se garantizará la confidencialidad de la información enviada y el reconocimiento de la propiedad intelectual e industrial.

La no presentación de una manifestación de interés o respuesta a la consulta no limitará la posibilidad de participar en el potencial IPCEI en el futuro. Por tanto, **la participación en la presente consulta no constituye una solicitud de ayuda, no generando derecho alguno al acceso a la potencial financiación que pueda convocar la Administración para la consecución de los objetivos propuestos, ni obligación alguna a la Administración.**

Contexto estratégico del IPCEI de infraestructuras y servicios *cloud*.

El Tratado de Funcionamiento de la UE (TFUE)⁷ prevé en su artículo 107.3.b) que podrán considerarse compatibles con el mercado interior las ayudas para la realización de proyectos importantes de interés común europeo (IPCEI por sus siglas en inglés).

La comunicación de la Comisión Europea sobre IPCEI⁸ desarrolla el artículo 107.3.b) del TFUE, ofreciendo a los Estados Miembros orientaciones destinadas a impulsar el desarrollo

⁷ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:12012E/TXT&from=ES>

⁸ Comunicación de la Comisión Europea sobre IPCEI (2014/C 188/02)

[https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52014XC0620\(01\)&from=EN](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52014XC0620(01)&from=EN)

de proyectos en colaboración a gran escala que fomenten los intereses comunes europeos, aporten importantes beneficios a la Unión y que, estando financiados con fondos públicos nacionales que puedan constituir ayudas de Estado, garanticen unas condiciones equitativas en el mercado interior. Estos IPCEI permitirían combinar conocimientos, experiencia, recursos financieros y actores económicos de toda la Unión con el fin de remediar importantes deficiencias del mercado o sistémicas y retos sociales a los que no se podría hacer frente de otra manera.

El IPCEI, bien como proyecto único o bien como conjunto de proyectos integrados que compartan un objetivo común y que estén estructurados bajo un plan coherente, debe cubrir una cadena de valor identificada y demostrar:

- El interés común europeo, mediante el apoyo a los objetivos y estrategias de la Unión y la generación de beneficios tangibles generalizados (más allá de las entidades, sectores y Estados Miembros participantes).
- Su importancia: en términos cuantitativos (tamaño) y/o cualitativos (alcance y riesgo tecnológico o financiero).
- Los fallos de mercado o sistémicos que justifican como única alternativa posible el uso de este instrumento extraordinario de financiación pública, que deberá respetar el mercado interior.
- Un salto cualitativo en términos del valor añadido y carácter innovador, pudiendo abarcar desde actividades de I+D+I hasta primeros despliegues industriales.

El nivel máximo de ayuda de Estado al potencial IPCEI (financiación pública) se determinaría respecto al déficit de financiación⁹ identificado en relación con los costes subvencionables. Si está justificado por el análisis de déficit de financiación, la intensidad de la ayuda podría alcanzar hasta el 100 % de los costes subvencionables, si bien el beneficiario debe participar en la cofinanciación del proyecto.

La ejecución de un IPCEI de Infraestructuras y Servicios en la Nube, alineado con las estrategias y acuerdos europeos referidos en la introducción, contribuiría a fomentar de manera efectiva que la UE pudiera avanzar hacia el liderazgo europeo en materia de

Esta comunicación estará vigente hasta el 31 de diciembre de 2021. La Comisión prevé próximamente aprobar una nueva comunicación (https://ec.europa.eu/competition/consultations/2021_ipcei/draft_communication_en.pdf)

⁹ El **déficit de financiación** (“*funding gap*”) es la diferencia entre los flujos de tesorería positivos y los negativos mientras dure la inversión, descontada de su valor corriente sobre la base de un factor de descuento apropiado que refleje la tasa de rentabilidad necesaria para que el beneficiario lleve a cabo el proyecto sobre todo teniendo en cuenta los riesgos que comporte. Los costes subvencionables son los que figuran en el anexo del documento (2014/C 188/02).

procesamiento de datos, el fortalecimiento, la competitividad y la sostenibilidad de su economía, y la soberanía digital.

Para ello, proporcionaría apoyo para el desarrollo de la próxima generación de infraestructura de procesamiento de datos paneuropea que soporte el despliegue masivo de servicios y aplicaciones inteligentes en la nube, que serían al tiempo innovadores, seguros, fiables, escalables, respetuosos con la privacidad, completamente interoperables y energéticamente eficientes. De esta manera, se podría proporcionar un acceso competitivo a los usuarios finales desde cualquier punto de la UE, incrementando la adopción de estas tecnologías, que beneficiarían por su carácter transversal a múltiples sectores de la economía europea, sin estar sujetos a las leyes de jurisdicciones extranjeras.

Se espera que el IPCEI impulse la investigación, el desarrollo y el despliegue de la próxima generación de infraestructuras, plataformas, servicios y aplicaciones en la nube de manera federada, aprovechando allí donde sean relevantes las iniciativas y recursos nacionales ya existentes.

Se prevé que este IPCEI podría comenzar su ejecución en 2022 y finalizar en 2026.

Selección de las manifestaciones de interés

Las manifestaciones de interés deberán formularse teniendo en cuenta el contexto estratégico descrito anteriormente, encuadrarse en al menos uno de los cinco segmentos de la cadena de valor de infraestructuras, tecnologías y servicios *cloud* y cubrir al menos una de las áreas tecnológicas. Tanto la cadena de valor como las áreas tecnológicas se detallan en el **Anexo I** del presente documento.

El CDTI podrá solicitar la ampliación o aclaración de la información contenida en la manifestación de interés.

La documentación presentada será analizada por el Ministerio de Asuntos Económicos y Transformación Digital y CDTI en dos fases:

Fase 1: ELEGIBILIDAD. Las propuestas que no cumplan los siguientes criterios serán descartadas, sin posibilidad de proceder a la siguiente fase:

1. Presentación en plazo y forma.
2. Las entidades proponentes deberán ser empresas válidamente constituidas.
3. Los proponentes deberán garantizar el cumplimiento del Reglamento (UE) 679/2016, de 27 de abril de 2016 (Reglamento General de Protección de Datos).
4. Las proponentes deberán garantizar que no están sujetas a legislaciones ajenas a la Unión Europea en materia de protección de datos.

5. La memoria de la propuesta deberá adecuarse exactamente al modelo facilitado en el **Anexo II** y cubrir al menos una de las áreas de la cadena de valor y una de las tecnologías identificadas en el **Anexo I** del presente documento.
6. Para que puedan considerarse parte de un potencial IPCEI, las propuestas deben ser importantes cuantitativa y cualitativamente, es decir, deben tener un tamaño y un alcance particularmente grandes y/o suponer un nivel de riesgo tecnológico o financiero muy elevado.
7. Las empresas proponentes deberán acreditar su trayectoria de ejecución de proyectos de I+D+I en España así como que las actividades de I+D+I vinculadas al IPCEI se ejecutarán en España.

Fase 2: VALORACIÓN. Una vez superada la primera fase, las propuestas presentadas se analizarán de conformidad con los criterios que se indican a continuación:

	MEMORIA DE LA MANIFESTACIÓN DE INTERÉS	Peso
1	VALORACIÓN DE LA TECNOLOGÍA, INNOVACIÓN Y PRIMER DESPLIEGUE INDUSTRIAL DEL PROYECTO	50%
	<p>En este apartado se valorarán positivamente:</p> <ol style="list-style-type: none"> 1. El grado de ambición, innovación y excelencia en todas las fases: desde las áreas tecnológicas abordadas en la fase de I+D+I del potencial IPCEI hasta el primer despliegue industrial, pasando por la realización de demostradores y pilotos. 2. La contribución e integración prevista de las actividades de I+D+I y del primer despliegue industrial en la cadena de valor europea definida para el IPCEI. 3. La colaboración y coordinación con potenciales socios españoles y europeos en el marco del IPCEI. 4. La adecuación tanto de los de los objetivos vinculados a las estrategias europeas como de los objetivos tecnológicos específicos perseguidos por el IPCEI. 	
2	VALORACIÓN DEL PLAN DE INVERSIÓN DEL PROYECTO	20%
	<p>En este apartado se valorarán positivamente:</p> <ol style="list-style-type: none"> 1. La viabilidad y coherencia del plan de inversión completo, desde las fases de I+D+I hasta (i) el primer despliegue industrial; (ii) comercialización/producción en masa. 2. La justificación de la necesidad, el efecto incentivador y la proporcionalidad de las ayudas de Estado. 3. La descripción adecuada de la potencial distorsión de la competencia originada por las ayudas. 4. La justificación del presupuesto estimado en relación con los 	

	objetivos del proyecto	
3	VALORACIÓN DE LA CAPACIDAD DE LA EMPRESA EN RELACIÓN CON EL PROYECTO	20%
	<p>En este apartado se valorarán positivamente:</p> <ol style="list-style-type: none"> 1. La coherencia del proyecto con las estrategias de I+D+I y de explotación del proponente. 2. Las capacidades, los recursos y la trayectoria de ejecución de proyectos de I+D+I en España. 3. La capacidad y experiencia previa del proponente en proyectos de cooperación tecnológica internacional en el marco de la UE. 4. La adecuación del presupuesto a las capacidades y al tamaño del proponente. 	
4	VALORACIÓN DEL IMPACTO SOCIOECONÓMICO Y MEDIO AMBIENTAL	10%
	<p>En este apartado se valorarán positivamente:</p> <ol style="list-style-type: none"> 1. El impacto del proyecto en la capacidad competitiva del beneficiario y del sector en la UE. 2. La descripción adecuada de los fallos de mercado en el ámbito de actuación específico del proyecto.. 3. Las externalidades positivas generadas ("<i>spillover effects</i>"). 4. La inversión privada movilizada, creación de empleo para el desarrollo del proyecto y estrategia de desarrollos futuros relacionados con el proyecto. 5. Contribución del proyecto a la mejora de la sostenibilidad ambiental. 	
TOTAL		100%

En los casos de propuestas que obtengan igual puntuación y a efectos de resolver el empate, este se dirimirá a favor de la solicitud que tenga mayor puntuación en la valoración del criterio 1. Si se mantuviera el empate, se decidirá a favor de la solicitud que tenga mayor puntuación en la valoración de los criterios 2, 3 y 4 por este orden. Si persistiera el empate, este se arbitrará finalmente a favor de la propuesta si hubiera sido presentada por una PYME.

Una vez superadas las fases descritas, las manifestaciones de interés serán priorizadas, seleccionándose aquéllas mejor posicionadas en la lista prioritaria. El resultado del proceso anterior se comunicará a las empresas seleccionadas, publicándose asimismo en la página web de CDTI y del Ministerio de Asuntos Económicos y Transformación Digital.

La selección de las propuestas no genera en ningún caso derecho al acceso a la potencial financiación que pueda convocar la Administración para la consecución de los objetivos propuestos, u obligación alguna a la Administración.

Las empresas cuyas solicitudes sean seleccionadas deberán integrarse en un esquema de colaboración con socios nacionales y de otros EE.MM. e involucrarse en un proceso de notificación de ayudas de Estado ante la Comisión Europea (COM) y coordinado entre todos los EE.MM. participantes. A tales efectos las empresas deberán colaborar con las autoridades nacionales en este proceso, debiendo facilitar la documentación e información precisa para ello.

La COM evaluará la idoneidad de cada uno de los proyectos que integren el IPCEI, pudiendo descartar cualquiera de ellos. Tanto la aprobación final de los proyectos, como la eventual financiación que, en su caso, se otorgue quedarán supeditadas a la decisión final de la COM.

Anexo I: Cadena de valor y áreas tecnológicas del IPCEI de infraestructuras y servicios *cloud*.

To seize the data opportunity and optimally respond to end-users' expectations in terms of computing capabilities, real-time, ultra-low latency, data security, interoperability, sustainability, the European Union (EU) needs to become a global leader in federated data processing (cloud and edge) capabilities. To do so, the EU needs to invest into the development (including industrial research) and first industrial deployment of the next generation of cloud-edge capabilities to foster among others new types of data and platform solutions.

To become a front-runner in data processing in the global context, the EU needs to rely upon a self-sustained and efficient utilization of cloud-edge provider ecosystems to foster resilience and technological leadership. In the frame of a federated data management system, existing data resources in the EU can be used swiftly, data processing capacities can be used efficiently, and new business models will be possible based on ultra-secure data communication, real-time capability in data provision, new data processing services and on a sustainable energy-efficient data usage. This will help to allow next generation green data processing solutions of tomorrow, to increase reliability, performance, scale and to decrease costs for users and providers. The IPCEI will leverage existing initiatives on EU and national level.

At the core of the next generation cloud to edge capabilities is the "Distributed Multi Provider Cloud-Edge Continuum", which is composed of a common distributed data processing infrastructure with platform and service functionalities that aim at:

- High scalability in a multi-provider environment across the EU.
- Guaranteed latency and bandwidth.
- Ultra-secure infrastructure and services aligned to EU rules and values
- Data exchange in ultra-low latency for added value creation
- High interoperability and portability of services and data among all cloud-edge users and providers enabling seamless shifting between service providers and overcome vendor lock-in for users
- Sustainable and energy efficient data processing capacities enabling new innovative, green business solutions and process efficiencies
- Development of cutting-edge smart processing and networking services
- Promoting standards where appropriate
- Creation of common set of tools and services (AI, IIoT/IoT, analytics etc.)
- Development and enhancement of innovative open source cloud-edge technologies

The goal of the integrated IPCEI-Project is thus to develop and initially roll-out the key interdependent building blocks and the associated horizontal requirements (such as

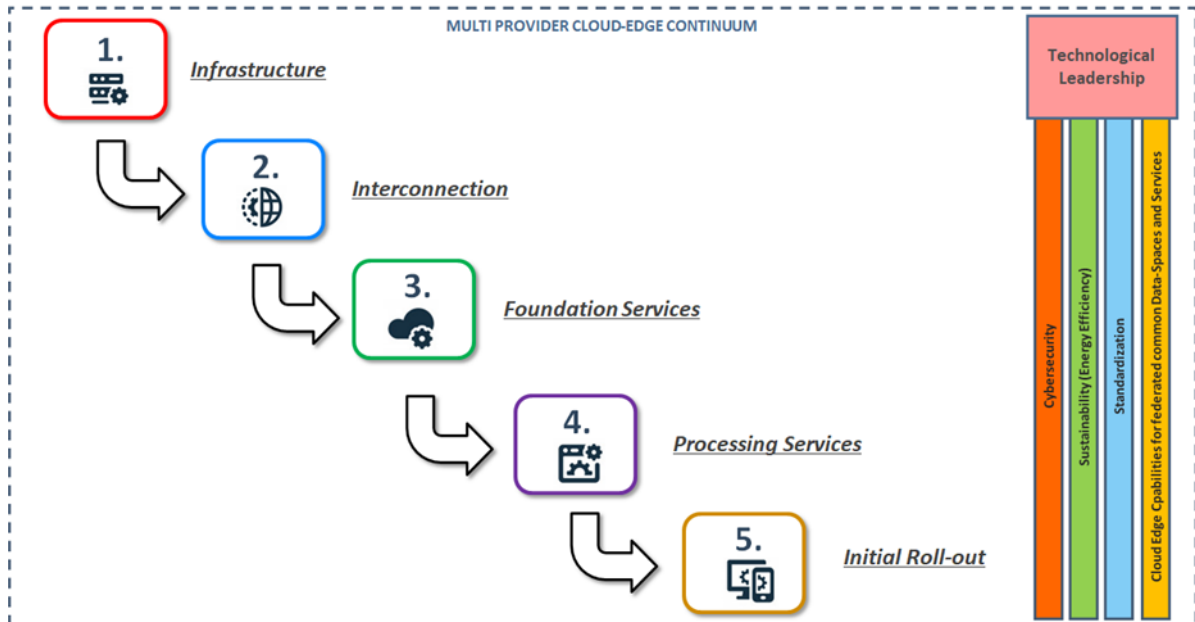
sustainability, cybersecurity) along the strategic steps of the value chain of the Distributed Multi Provider Cloud Edge Continuum.

Such a continuum will be based upon a common end-to-end data processing infrastructure, enabling value creation via providing platform and application services across the EU, fulfilling key requirements of ultra-low latency, dynamical bandwidth and cybersecurity. Boundaries will also disappear between cloud and edge computing in establishing the multi-provider cloud-edge continuum as technological basis for the initial roll-out of advanced data processing capabilities for key sectors such as automotive, manufacturing, energy, logistics, transport/mobility, tourism, education or public services (smart cities, health, etc...). The multi-provider cloud-edge continuum will deploy key digital technologies and applications like smart networks and services (e.g. AI, analytics), data driven robotics, common generic data space applications and cloud-edge foundation services. The IPCEI-CIS will ultimately aim at fostering the EU global technological leadership in the cloud-edge sector so as to accelerate the cloud-edge uptake among SMEs, industries and public administrations by responding to their new expectations in terms of data processing.

Value chain

The value chain logically combines technological features and R&D&I aspects under each of its key building blocks to structure a common integrated project based on multiple projects. In each building block of the value chain and along the entire technology stack (infrastructure, platform and services) interoperable, reliable and measurable framework conditions in relation to cybersecurity, sustainability, sovereignty, standardization and capabilities as traversing requirements for a trusted cloud-edge continuum need to be guaranteed. The identified key building blocks and horizontal requirements along the value chain are:

Value-Chain Steps



Infrastructure

Next generation data processing needs suitable and highly scalable software and compatible hardware packages. This implies central cloud computing capacities, regional edges, far edge and near edge data centers, fast energy-efficient next generation processors for data processing and communication, and dedicated components for real-time and security-critical data transfer operations. The infrastructure for a multi-provider cloud-edge continuum and the applications and services running on it are scalable, compatible and interoperable hardware packages and infrastructure related software.

The the roll-out of the future EU common data processing infrastructure will require the integration to smart networking services based on significant enhancements in terms of transmission rates, latency, energy consumption, data integrity, reliability, and security for the deployment of critical applications and services.



Interconnections

Next generation smart processing infrastructures will progressively rely on cloud and edge capabilities, edge devices and Internet-enabled mobile

devices. These infrastructures will enable the management of user-oriented interconnectivity¹⁰, interoperability and data or service portability, specific requirements with regard to end-to-end security, low power and ultra-low latency in data transfer and storage, bandwidth availability and load balancing in a complex multi-provider environment.

The next generation of physical and logical interconnection, including cloud-edge and telco infrastructure, will bring data processing solutions closer to where end users are physically located across the EU with the guaranteed performance (e.g. latency, bandwidth). For this sake, the fixed, mobile and backbone networks will have to adapt their different domains, from access to core. The resulting composed infrastructure layer is a critical building block required for a multitude of network services, existing and new applications implementing various end-to-end scenarios in the Internet and (edge) cloud continuum. All this ensures the users reach the edge-cloud continuum in the required conditions



Foundation Services

An increasing number of real-world applications, including industrial processes, require the execution of highly specialized functions quickly and without errors. These applications require a high automation degree, transmission and storage of high data volumes, real-time with guaranteed latency and bandwidth in data transfer and processing, reliability, resilience, access control, and energy-saving options. Cloud and edge computing creates an everywhere available continuous computing environment and is expected to optimize significantly the following aspects:

- Overall performance and latency improvement of the system, minimisation of network traffic, energy consumption and data transfer costs, add reliability to the cloud-edge continuum.
- Provide guarantees for data privacy to comply to GDPR and other data protection and privacy policies

Foundation services are the basic infrastructure services upon which smart services are built and thus have a crucial role in the technological stack. From the user's perspective they impact the resilience, trustworthiness, reliability, adaptability, cost-effectiveness and performance needed to create innovative applications. Elasticity, the capability of scaling up infrastructure to meet demand, is further characterized by ramp-up time in which new resources can be brought on, typically ranging from minutes for virtual servers, seconds for micro-service containers, and tens of milliseconds for functions. The foundation services can be open source to enable collaborative development, high usage rates and transparency for

¹⁰ Interconnection refers to the physical and logical linking of networks with equipment or facilities not belonging to the administrative domain of that network. This includes the interconnection of carriers, cloud service providers, content delivery networks, mobile and fixed-line network service providers, and other participants of the Internet and (edge) cloud continuum running networks (e.g., data centers, enterprise networks).

operations. In addition, foundation services like workload optimisation are needed to connect the different layers of the cloud-edge continuum.

Foundation services rely on the following building blocks:

- Continuum Control Functions: The efficient use and distribution of the required resource is an important factor when operating a multi-provider cloud-edge infrastructure..
- Next Generation Cloud-Edge Operating System. In this complex multi-provider cloud-edge continuum (Mesh), a new type of highly automated Operation System to ensure coherent application behaviour by managing dynamic loads, disaster recovery, utilization and resource allocation as well as energy efficient operations.
- API Framework. A common API framework is necessary for the development and maintenance of applications and services within the cloud-edge. The API framework needs to cover cloud, edge and a broad set-up of providers' functionality. It is important to support existing frameworks and be expandable based on new cloud-edge requirements.
- Virtualization and containerized workloads. To independently run critical infrastructure services safely it is necessary to care for virtualization of the edge and cloud computing resources within the multi-provider cloud-edge continuum, that includes servers, storage, and networking resources. It allows centralization of administrative tasks while improving scalability and overall hardware utilization by sharing the same physical resource among many tenants.



Processing Services

On top of core foundation services, added value services are required to extract the full value of the multi-provider cloud-edge continuum. Those platform services bridge foundation services with end users' applications, can ease application lifecycle management, resources and services orchestration or provide innovative processing capabilities - called smart processing services in the case of the integrated IPCEI-CIS project.

Processing services rely on the following building blocks:

- Platform Services. Cloud-based services through which the provider offers to a user environments and tools for developing, deploying and managing applications. As the cloud-edge continuum integrates diverse physical components from central cloud servers to edge devices, high end platform services are needed to orchestrate

resources and services and to manage applications deployed in the continuum. This new generation of platform services could leverage analytic tools, like AI or digital twins, to optimize cloud and application management. Because those platform services tend to ease developers works by automating tasks they would need to do manually (e.g. application life cycle management) they are considered as essential to adoption.

- **Data Platforms.** Data platforms ease data management by providing an environment of tools to ingest data, store it, for instance in data spaces, transform it to be able to feed it in business intelligence or tools for data science. Future data platforms need to cope with the model of the Multi-Provider Cloud-Edge Continuum where data is not anymore centralized. In particular, this requires standards that facilitate a controlled, secure and trustworthy data exchange between the decentralized nodes in this continuum. This new generation must also allow customers to manage access and control over their data (in particular depending on where the data is processed and which controls are applied) and provide tools to ensure compliance with GDPR in a multi-provider environment.
- **Smart Processing Services.** A next generation of new and open smart processing services is needed to utilize the full value of the data managed in a cloud-edge continuum. Those services, using innovative approaches like AI routine, digital twins, simulation and modelling or other digital technologies allow users to manage their data. Those smart processing services need to solve the trade-offs between the effectiveness of algorithms, the required memory and compute resource as well as the guaranteed latency and bandwidth, while keeping the required privacy level.



Initial Roll-out

The progress made in terms of connectivity, latency, data exchange, data processing and computing capabilities through the multi-provider edge cloud continuum enable the deployment of innovative use cases at first industrial deployment stage, showcasing a high scalability and interoperability of services and data in different domains, like manufacturing, energy, mobility, health and public services. A wide variety of sectors can benefit from digital twins, virtual factories, remote operation and assistance, autonomous robots and other innovative services. The digitalization of those sectors and industries will generate enormous amounts of data that can be used to maximize economic value. The sharing of data and its combined exploitation through advanced techniques of data analytics and AI, will allow companies and public administrations to build tailored products and services for customers and citizens.

The IPCEI-CIS will include the implementation of a first industrial deployment with different use cases, which are open to any domain or sector. This will boost adoption by both users

and providers, raise awareness and showcase the functionalities of the next generation multi-provider cloud-edge continuum.

Use cases to be implemented as a first industrial deployment must facilitate the development of new products and services with high research and innovation content and/or the deployment of fundamentally innovative production processes. The development of newer versions of already existing products or services does not qualify in this case.

These first industrial deployments will allow participating project partners to deploy and test their use cases in a production environment but will not encompass mass production. This will give participants the possibility to go one step further than in large scale pilots and demonstrators.

Technology Areas

An efficient, high-performance, highly secure, federated next generation cloud infrastructure and services must flexibly integrate all data sources, data connections, computing units and data storage options. Therefore, a common perspective on the technological architecture and potential technology stack of a distributed Multi-Provider Cloud-Edge Continuum will be developed as an integrated IPCEI project. This Continuum covers from devices, near and far edge nodes to central cloud data centers as well as the integration to specialized data centers (e.g. HPC) and smart networks. This will enable the development and distribution of smart data and innovative services, like swarm and fog computing across the continuum.

The integrated project needs an appropriate technological framework to guarantee a successful set-up and rollout based on the following targets in a multi-provider environment:

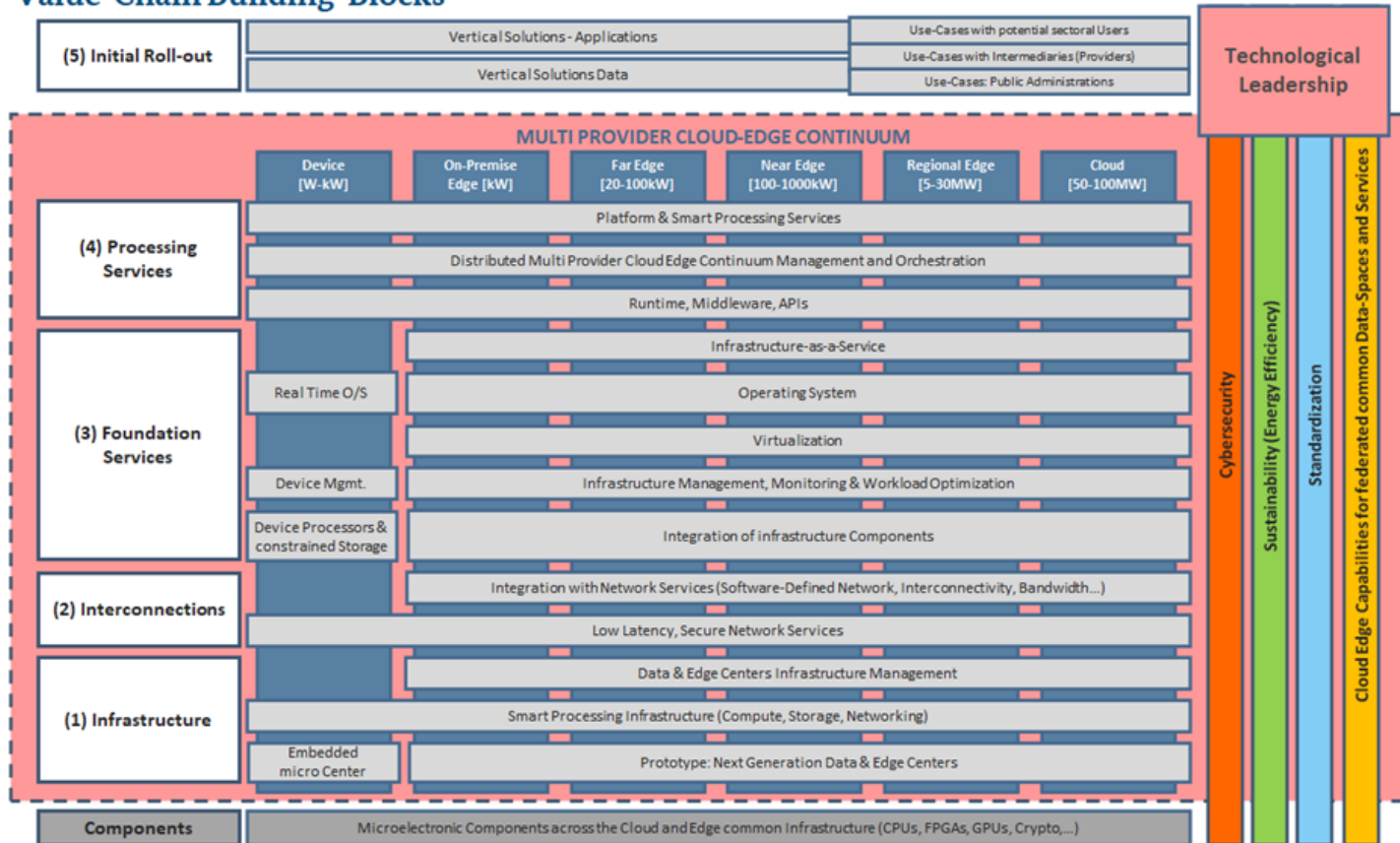
- Create a common architecture with technological components for an open cloud-edge stack which is highly scalable and interoperable
- Create a set of services to automate in highest possible scale the Federation/Orchestration at Cloud-Edge level
- Enable Security Operation Center (SOC) and Computer Emergency Response Team (CERT) to be able to serve customers' needs and security accidents from edge to cloud across national borders
- Create an automated management for distributed hardware
- High level of energy efficiency and security across all technology building blocks
- Create platform and smart processing services to support different applications (easy, fast, secure, reliable data exchange and sharing)
- Ensure interoperability and platform scalability and
- Overcome users' vendor lock-in and foster data portability

The graph below displays a set of **Technology Areas** comprising a potential technology stack for the Multi Provider Cloud-Edge Continuum which will be further elaborated with the successful project applicants during the notification of the integrated project

Legend:



Value-Chain Building-Blocks



Anexo II: Memoria de la manifestación de interés

El cuerpo principal de la memoria deberá respetar las siguientes condiciones de formato:

- Número máximo de páginas excluyendo la portada, el índice y los dos anexos: 35.
- Tamaño de letra: 11 puntos.
- En la memoria no se tendrán en cuenta los contenidos externos enlazados en esta (hiperenlaces a documentación adicional, etc.).

Se deberán adjuntar obligatoriamente dos anexos al cuerpo principal de la memoria, cuyas plantillas en formato «Excel» se facilitan:

- Análisis del déficit de financiación: plantilla "*Annex I Funding Gap Questionnaire*".
- Cuestionario de la "lista *prod com*": plantilla "*Annex II PRODCOM Template*".

Se proporcionan las guías para rellenarlos en los epígrafes de la memoria.

Tanto la memoria como los dos anexos se deben presentar en inglés.

La memoria deberá contener los siguientes epígrafes:

1. Project Outline

1.1. Company Presentation

Brief description of the company: Company name, type (large, medium, small), contact information (i.e., e-mail address), complete address, main activity, number of employees, annual turnover, etc.

Detailed description of the R&D&I resources and capacities (infrastructure, facilities, staff) located in national premises, specifying which will be allocated to the IPCEI.

1.2. Objectives of the company within the IPCEI in all areas involved

Identification of the general objectives of the EU strategies¹¹ addressed, precisely explaining the project's specific contributions to them.

Concise description of the specific objectives of the project within the Value Chain and the Technology Areas (value chain and technology stack areas of the IPCEI's value chain addressed, as described in **Annex I** of this document). These objectives must be clear, measurable, realistic, achievable within its duration and consistent with the activities described in sections, 1.4, 1.5 and 3.

1.3. Related Research, Development and Innovation (R&D&I) projects previous to the IPCEI

Concise description of the proposer's R&D&I background in this field, including activities necessary for the IPCEI that were carried out before the start of the project, alone or as part of a consortium, both in national and international contexts. This section must be consistent with the proposer's R&D&I strategy in the cloud area.

1.4. Technological challenges: R&D&I activities within the IPCEI in all areas involved.

Identification of the relevant Work Packages (WPs). For each WP, brief description of the state of art and of the innovative activities foreseen to solve the current technical challenges within the Technology Areas addressed in the value chain (i.e., advances over the state of the art). This section must be consistent with sections 1.6 and 1.7.

1.5. First Industrial Deployment (FID)¹² activities and investment.

Identification of the relevant WPs. For each WP, brief description of the FID investment (CAPEX) and linked OPEX, clearly explaining when the FID phase starts (after R&D phases) and when the FID

¹¹ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021DC0118&from=es>
https://ec.europa.eu/info/sites/info/files/communication-shaping-europes-digital-future-feb2020_en_4.pdf
<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1593073685620&uri=CELEX:52020DC0066>
<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0575&from=en>
<https://www.consilium.europa.eu/media/45910/021020-euco-final-conclusions.pdf>
<https://ec.europa.eu/digital-single-market/en/news/towards-next-generation-cloud-europe>

¹² As defined in the draft 2021 communication from the Commission on IPCEI
https://ec.europa.eu/competition/consultations/2021_ipcei/draft_communication_en.pdf

phase ends (before mass production/commercialization). The FID phase must be clearly linked to at least one use case within the value chain. This section must be consistent with sections 1.6 and 1.7.

It must be shown that FID activities follow on from R&D&I activities, performed by the proposer or by any other partner in the IPCEI, and contain themselves very important R&D&I components, which constitute integral and necessary elements for the successful implementation of the project.

1.6. Work Plan

Concise description of the work plan, the methodology foreseen and the potential technical and financial risks of the projects. This section must be consistent sections 1.4 and 1.5. Use *"Table 1: Work Plan overview"* below to provide a general overview.

1.7. Investments

1.7.1. Tools and equipment

Concise description of the foreseen investments clustered by technology classification. This section must be consistent with sections 1.4 and 1.5. Use *"Table 2: Investment overview. Tools and equipment"* below to provide a general overview. Provide also a brief description to the table entries (i.e. what the purpose of each investment is).

1.7.2. Construction of buildings and/or facilities

Concise description of the foreseen investments clustered by technology classification and consistent with the activities included in sections 1.4 and 1.5. Use *"Table 3: Investment overview. Buildings and facilities"* below to provide a general overview. Provide also a brief description to the table entries (i.e. what the purpose of the facility is: laboratory, data center, etc.).

1.8. Potential partners and subcontractors

Identification of potential national or European partners in the IPCEI, including a detailed description of the complementarities, synergies and cooperation/coordination mechanisms in the Technology Areas where joint work is foreseen within the potential IPCEI.

Identification and justification of the need for subcontracting national RTOs. Brief description of the tasks to be carried out within the appropriate Technology Areas.

1.9. Intellectual Property Rights

Brief description of the management and exploitation plan for intellectual and/or industrial property rights.

Table 1: Work Plan overview. Use as many rows as necessary (section 1.6)

TA	WP number	Title	P-M		TRL		Date	
			R&D&I	FID	start	end	start	end
		Total PM						

WP: Work Packages (might include one or more TAs)

P-M: Person-Months allocated to the WP.

TA : Technology Area (technology stack areas of the IPCEI's value chain addressed, as described in **Annex I** of this document).

TRL: Starting and ending Technology Readiness Levels¹³ foreseen.

Table 2: Investment overview. Tools and equipment (section 1.7.1)

Technology classification	Number of tools	Examples of Tools	Investment Cost [EUR]	Year of investment	TA	WP
		Total EUR				

Table 3: Investment overview. Buildings and facilities (section 1.7.2)

Technology classification	Number of items	Examples of facilities	Investment Cost [EUR]	Year of investment	TA	WP
		Total EUR				

¹³ TRLs as defined in https://ec.europa.eu/research/participants/data/ref/h2020/other/wp/2016_2017/annexes/h2020-wp1617-annex-g-trl_en.pdf

2. Budget

2.1. Eligible Costs of the activities foreseen in the IPCEI

Detailed description of the eligible costs. Eligible costs¹⁴ only cover costs made for the purpose and the time span of the IPCEI. All figures presented in this section must be consistent with the figures included in the "Annex I Funding Gap Questionnaire" Excel file.

Use "Table 4: Summary of eligible costs" below to provide a general overview.

The final result of this section should be a set of three figures:

1. The total amount of eligible costs for the whole IPCEI for R&D&I activities
2. The total amount of eligible costs for the whole IPCEI for FID activities.
3. The total eligible cost of the project proposal (sum of figures 1. and 2. above)

2.2. State Aid for the activities foreseen in the IPCEI

Detailed description of the expected State aid, defined as the part of the eligible costs that would be covered by public funding. State aid would only cover costs made for the purpose and the time span of the IPCEI. All figures presented in this section must be consistent with the figures included in the "Annex I Funding Gap Questionnaire" Excel file.

Use "Table 5: Summary of expected State Aid" below to provide a general overview.

The final result of this section should be a set of three figures:

1. The expected amount of State aid for the whole IPCEI for R&D&I activities.
2. The expected amount of State aid for the whole IPCEI for FID activities.
3. The total expected amount of State aid for the whole IPCEI (sum of figures 1. and 2. above).

Include the amount of the total cost of the project funded by the company's own resources (i.e. costs that are not eligible but are necessary for the project plus eligible costs of the project that are not expected to be covered by State aid/public funding).

¹⁴ Eligible costs are identified in the Annex of the Communication from the Commission on IPCEI (2014/C 188/02) [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52014XC0620\(01\)&from=EN](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52014XC0620(01)&from=EN)

Table 4: Summary of eligible costs [EUR]

	Construction of buildings / facilities	Investment costs	Personnel costs	Subcontract costs	Materials, supplies and others	Total eligible costs
R&D&I						
FID						
TOTAL						

- Costs for each of the categories (R&D&I and FID) should be listed in a disaggregate manner.
- Within the FID costs, the costs of R&D&I based activities carried out in the FID phase should be mentioned in order to give an idea of the overall importance of the R&D&I components in the FID activities.
- Eligible costs cover costs up to the end of the FID phase, even if the FID phase goes beyond the national granting period for some companies.
- The cut-off dates for the R&D&I and FID phases should be provided explicitly by each company in the “Annex I Funding Gap Questionnaire”.

Table 5: Summary of expected State Aid

	Total eligible costs [EUR]	Expected total state aid [EUR]	Expected % of State aid (%)
R&D&I			
FID			
TOTAL			

- Total eligible costs are the “Total eligible costs” figures calculated in Table 4.
- Expected total State aid: part of the eligible costs covered by public funding.
- % calculated as (Expected total State aid/Total eligible costs).

3. Expected Impact and Spillover effects

3.1. Impact on competitiveness, investment, employment and the environment

Brief description, including a quantitative estimation wherever it is relevant, of how the innovative nature of the project will contribute to increase:

- The competitiveness of the proposer.
- The creation of qualified employment.
- Potential new investments in this sector in the EU.
- Environmental sustainability.

3.2. Spill-over effects

Clear and concrete identification of the proposer's contributions to the potential IPCEI's spillover effects based on specific commitments. Spillover effects are benefits of the project not limited to the proposer or the sector concerned, but of wider relevance and application to the European economy or society, for example by having systemic effects on multiple levels of the value chain or having alternative uses in other sectors (i.e., positive externalities).

These contributions should:

- Take place during the life of the project.
- Be closely related to the tasks undertaken in the project.

They could include, for example, specific scientific and technical information (not general information) that could lead to third parties to replicate the achieved results.

3.2.1. Spillovers in the R&D&I phase

Identification and brief description of spillovers due to (amongst others):

- Diffusion of non-protected results diffusion: foreseen publications and communications on the results of the IPCEI, open-source software releases, contribution to standards.
- Diffusion of IP protected results: license terms should be as open as possible, for instance non-exclusive "Reasonable And Non-Discriminatory" (RAND) license terms, and may have specific targets (SMEs, start-ups, universities, RTOs).
- Positive impacts on R&D&I ecosystems: transfer of new technologies developed, open infrastructure / testing facilities, training sessions. These spill-overs may have specific targets (SMEs, start-ups, universities, RTOs).

3.2.2. Spillovers in FID phases

Identification and brief description of spillovers due to (amongst others):

- Positive impacts on industrial ecosystems: deployment of new technologies and open infrastructures made available to SMEs.
- Positive impacts on downstream and upstream industrial, services or digital markets.
- Contributions to standards.

4. Market failures

4.1. The current cloud market and projections for the future

Brief description of the current EU and worldwide market situation in the specific areas tackled by the project proposal (not the general market): size, growth, competitors, market shares, barriers to entry, new entrants, mergers.

An estimation of the new specific market situation in case the IPCEI finished successfully, based on a description of the product / service that will be commercialized, the competing solutions, the targeted applications, the market segmentation and/or the geographical subdivisions of the market.

4.2. The cloud market failures

Detailed justification of market or systemic failures that prevent the project from being feasible, or being executed to the same extent, in the absence of State aid (public funding) and the way to deal with them (i.e., in which areas and why the cloud market does not currently satisfy the demand in an optimal way). The identified market failures should be specific for the company and the project proposed.

It could include the following (amongst others):

- Imperfect and asymmetric information: Technical and financial risks, difficulties to access market finance or to hire qualified manpower.
- Imperfect competition due to unbalanced market power or high entry barriers for newcomers.
- Coordination failures amongst actors in the sector.
- Negative externalities.

5. Incentive effect and necessity of the State aid

5.1. Absence of similar projects

Brief explanation of the existence or absence of projects of similar scope and ambition as the potential IPCEI in the EU. The IPCEI would not make sense if its goal were just to replicate technologies already developed by other non-European companies. Would this IPCEI be feasible without State aid?

5.2. Start date of the project

In order to justify the incentive effect of the State aid, the project should not start before the application for State aid (public funding). This IPCEI is foreseen to run from 2022 until 2026.

5.3. Counterfactual scenario and incentive effects of the State aid

Description and substantiation of the counterfactual scenario, i.e. situation where no State aid / public funding is awarded and the IPCEI would not take place:

- Would the proposer undertake an alternative project?
- If so, how would the lack of State aid impact the alternative project, in terms of technology development, industrial deployment and expected business scenarios / capacity?
- If not, how would not undertaking the project impact the proposer's technology development, industrial deployment and expected business scenarios / capacity?

The counterfactual scenario should be described in sufficient detail (e.g., a mere statement such as "the proposer would not undertake the project as planned in its Member State without the aid" is not enough). It should be clearly justified if and why the proposer would not undertake the project at all, or if it would undertake it but in a different manner/extent (an "alternative project"). This alternative project would be a completely different scenario, as compared to the IPCEI, that should be acceptable to the company's stakeholders.

Description of the proposer's intended behavior change as a result of the State aid (i.e, participation in the IPCEI, a new project is triggered, or the size, scope or speed of a project is enhanced) by comparing the expected outcome and level of intended activity with and without State aid.

A description of the level of private profitability and the potential benefits of the project for society in general if the project were undertaken both with and without State aid (i.e., public funding support) should be included.

All information presented in this section must be consistent with the figures included in the "Annex I Funding Gap Questionnaire" Excel file.

6. Proportionality of the State aid

In the absence of an alternative project, the aid amount shall not exceed the minimum necessary for the aided project to be sufficiently profitable, for example by making possible to achieve an Internal Return Rate corresponding to the sector or firm specific benchmark or hurdle rate. In other words, the State aid amount could reach, at most, the funding gap figure or the eligible costs of the project, whichever figure is lower.

6.1. Funding gap

This section shall contain all necessary explanations and a precise justification of the input figures (i.e., WACC used, depreciation time of equipment, etc.) needed to understand how the funding gap was reached, leading to the requested State aid for the future project, and the conclusions of funding gap analysis performed.

The funding gap must be calculated making use of the Excel sheet in “Annex I Funding Gap Questionnaire.xls” (guidance for use in section 7.1).

The funding gap is defined as the difference between discounted positive and negative cash flows over the entire economic lifetime of the investment project, i.e. covering the entire period in which the investments made / produced products and services generate revenues thanks to the project (i.e., the investments are sold on the market). Hence, the funding gap must not be calculated only for the duration of the IPCEI project, which is up to the end of the FID phase, but must also cover the ensuing commercial/mass production phase.

6.2. Adequacy of the state aid instrument

Explain why the State aid instrument would be more adequate to fund such an ambitious project and to correct the market failure as compared to other currently existing public funding instruments.

6.3. Limitation of distortion of competition and trade

Detailed explanation of why the State aid would not lead to the creation of an artificial market structure or generate limitations or distortions in the specific areas of the current global cloud market tackled by the project (not the whole cloud market). The analysis should be based on the following:

- Avoiding the strengthening or creation of market power.
- Limiting distortion of dynamic incentives (i.e., preventing competitors from staying in the market)
- Maintaining an inefficient market structure.
- Avoiding effects on the location of activities undertaken by the proposer.

7. Annexes to the proposal

- I. "Annex I Funding Gap Questionnaire.xls"
- II. "Annex II PRODCOM Template.xls"

7.1. Guidance for Annex I: the "Funding Gap Questionnaire"

The proposer should provide all eligible costs¹⁵ and revenues associated with the investment as a whole, since the proposal will not only be assessed from the technical side, but also from the perspective of the business investor. Eligible costs only cover costs made for the purpose and the time span of the IPCEI.

The calculation should include all (positive and negative) cash-flows for what the investor regards as the investment project, at the time these cash-flows are to be incurred. It is not enough just to submit the eligible costs. For the purpose of calculating the funding gap, all costs (eligible or not) associated with the investment project and all revenues over the entire lifetime matter, including the commercial / mass production phase will be considered.

Important reminder: all figures provided in the "Funding Gap Questionnaire" must be consistent with the figures provided in the technical memory.

The funding gap calculation is to be done according to the following methodology:

- It is sufficient to provide the Excel sheet calculations for the "basic scenario" (i.e., no optimistic and pessimistic scenarios and its respective probabilities are needed, provided that the company is able to justify in the technical memory why this basic scenario is the most likely).
- The funding gap that must be calculated is the funding gap of the investment project (i.e. all investment costs and operating costs) to be made by the company for the purpose of the IPCEI.
- The investments made for the IPCEI in R&D and FID by the company are expected to generate revenues.
- The funding gap is the difference between discounted positive and negative cash flows over the entire economic lifetime of the investment project, i.e. covering the entire period in which the investments made and the produced products and services generate revenues thanks to the project (i.e., the investments are sold on the market). Hence, the funding gap must not be calculated only for the duration of

¹⁵ Eligible costs are identified in the Annex of the Communication from the Commission on IPCEI (2014/C 188/02) [https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52014XC0620\(01\)&from=EN](https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52014XC0620(01)&from=EN)

the IPCEI project, which is up to the end of the FID phase (i.e., 2022-2026), but must also cover the ensuing commercial/mass production phase.

- The best estimate projections that the proposer has for this entire period should be included in the Excel sheet. The number of years of commercial/mass production for which data are inserted should be realistic.
- After the data for the FID phase and after the data for the reasonable number of years of the commercial / mass production phase, there should be a column (i.e., the end year of the investment plan considered) containing the terminal value for the costs and for the revenues. In the provided template this end year is 2040 (column W), where cells W99 and cell W100 respectively perform the calculations for the "Residual / terminal value all investments" and the "Discounted value of residual / terminal value all investments". In case the proposer considered an end year different from 2040, cells W99 and W100 should be accommodated to that end year and the content of cell W100 referenced by cell X102 in order to correctly calculate the Funding Gap.
- Sales/revenues (positive cash flows): projected sales figures should be used by each proposer rather than a formula. These should be the figures actually used by the company in its business plan and decision making process and could be best estimate figures.
- Cash flows should be discounted using the weighted average cost of capital (WACC) of the company (cell D118). If so required, the proposer should provide evidence that the discount factor applied is the actual WACC used by the company (e.g. by internal documents showing the applied WACC for investment analysis). The reason to deviate from the WACC usually applied by the company should be explained in detail.
- The depreciation of investments (i.e., equipment, buildings or facilities, cells D115 y D116) should be consistent with the proposer's usual accounting practices.
- **In the absence of a counterfactual alternative project** (justified in section 5.3):
 - There is no need to input data in the counterfactual project tab of the Excel sheet (tab "3_Counterfactual_scenario"). Input data would only be required in tabs "1_IPCEI_without_State_aid" and "2_IPCEI_with_State_aid".
 - Input figures for tabs "1_IPCEI_without_State_aid" and "2_IPCEI_with_State_aid" should be identical except for cell C79 as explained below.

- For tab “1_IPCEI_WITHOUT_State_aid”, cell C79 (“Grant”) **should remain set to 0%**, in order to automatically calculate in cell X102 the right funding gap of the participation in the IPCEI WITHOUT State aid:
 - If the value of cell X102 is positive, the State aid would not make sense as the project would be profitable without the support of public funding.
 - If the value of cell X102 is negative, the State aid amount would correspond to the smallest of the following figures:
 - The absolute value of cell X102 (the funding gap of the IPCEI without State aid).
 - The total eligible costs (State aid cannot exceed 100% of the eligible costs identified in any case).

- For tab “2_IPCEI_WITH_State_aid”, cell C79 (“Grant”) **should be set to a percentage (%)**, consistent with the expected amount of State aid for the whole IPCEI included in section 2 of the technical memory, in order to automatically calculate in cell X102 the right funding gap of the participation in the IPCEI WITH State aid.
 - This percentage should always be less than or equal to 100% (State aid cannot exceed 100% of the eligible costs identified in any case).
 - This percentage should yield a value of zero (or positive but close to zero) in cell X102, otherwise:
 - If the value of cell X102 is positive, the State aid would generate profits to the proposer.
 - If the value of cell X102 is negative, the State aid amount would not cover the funding gap.

- The consistency of the funding gap WITHOUT state aid in tab “1_Project_WITHOUT_State_aid” (cell X102) and the funding gap WITH state aid in tab “1_Project_WITH_State_aid” (cell X102) will be assessed.

- **In case of a counterfactual alternative project** (justified in section 5.3):
 - It is also required to input data in the counterfactual project tab of the Excel sheet (tab “3_Counterfactual_scenario”).
 - Cell C79 (“Grant”) in this tab **should remain set to 0%**, in order to automatically calculate in cell X102 the right funding gap of the participation in the counterfactual scenario.

- The difference between the funding gap of the counterfactual alternative project and the funding gap WITHOUT State aid, respectively in tab “3_Counterfactual_scenario” and tab “1_Project_WITHOUT_State_aid”, will be assessed.
- In this case, the aid amount generally corresponds to the difference between the two funding gaps, but it cannot exceed 100% of the eligible costs identified in any case.

The end result of this process should be one figure for each of the tabs (tabs 1 and 2 in case there is no counterfactual alternative projects or tabs 1, 2 and 3 if there is a counterfactual alternative project): the **amount of the funding gap**, labelled as such in the Excel sheet (cell X102).

7.2. Guidance for Annex II: “PRODCOM Template”

Data to be filled in the sheet “1_DATA_INPUT” (further information contained in sheet “3_EXPLANATIONS”):

- 1 The list of PRODCOM codes (contained in sheet “2_PRODCOM_LIST”) in which the proposer intends to bring out products following the support measure within 10 years from the start of the project,
- 2 The proposer's past 5 years of production values (turnover) in each of these PRODCOM codes, as would be reported for statistical purposes in the PRODCOM survey.
- 3 For each PRODCOM code provided in response to point 1, list the proposer’s 5 main competitors.

List of acronyms used

CAPEX, OPEX	Capital Expenditures, Operational Expenditures
FID	First Industrial Deployment
IPCEI	Important Project of Common European Interest
IP, IPR	Intellectual Property, Intellectual Property Rights
IRR	Internal Return Rate
R&D&I	Research, Development and Innovation
RAND	Reasonable And Non-Discriminatory
RTO	Research and Technology Organization
TF	Technology Field
TRL	Technology Readiness Level
WP	Work Package

Anexo III: Declaración responsable

MODELO DE DECLARACIÓN RESPONSABLE PARA LA ACREDITACIÓN DEL CUMPLIMIENTO DEL REGLAMENTO (UE) 679/2016, DE 27 DE ABRIL DE 2016 (REGLAMENTO GENERAL DE PROTECCIÓN DE DATOS)

D/Dña....., con N.I.F. nº....., en nombre y representación de(nombre de la empresa)....., en su calidad de(cargo en la empresa)..... con arreglo al nombramiento/apoderamiento realizado ante el notario de (ciudad) don(nombre notario)....., con fecha(fecha poder).... y número (.....) de su protocolo, vigente al día de hoy, en relación con la presente petición de manifestaciones de interés relativas a la participación en el potencial Proyecto Importante de Interés Común Europeo (IPCEI) de Infraestructuras y Servicios en la Nube en el marco del Plan de Recuperación, Transformación y Resiliencia

DECLARO bajo mi responsabilidad que la entidad a la que represento cumple en todos sus extremos el Reglamento (UE) 679/2016, de 27 de abril de 2016 (Reglamento General de Protección de Datos) y no está sujeta a legislaciones ajenas a la Unión Europea en materia de protección de datos.

En....., a.....de..... de 2021

Fdo.- D/Dña.....