

Call - EU-Korea Joint Call

H2020-EUK-2018

Proposals are invited against the following topic(s):

EUK-01-2018: Cloud, IoT and AI technologies

Specific Challenge: Over the last years Cloud computing technologies have evolved into the major driver that brought together IoT, Big Data and mobile computing into an integrated and ubiquitous computing platform. The capability offered by the cloud platforms to deliver on-demand computing power and the ability to process the vast amount of data coming from an abundance of devices/sensors will provide a huge impetus to AI technologies as never realized before. In order to provide AI services on Cloud computing platforms, the harmonious management of computing resources through multi-cloud federation environment as well as huge data management and analytics are necessary. In addition, there is a need for new mechanisms using intelligence to manage the deluge of data from various surroundings; standardizing open IoT data management platforms to enable launching new value-added AI services; data acquisition method using IoT technologies.

Combining Cloud, IoT and AI will bring tremendous technological advances with enormous benefits to business and societal applications.

Scope: The main focus of the joint research is to develop innovative solutions integrating AI with Cloud and IoT technologies to support future AI applications in an efficient way.

A number of R&D areas need to be considered so as to deliver these **advanced cloud platforms with IoT for AI** (i.e., innovative cloud computing models to deliver cross-border future AI applications; new data management models built on AI-based optimal resource allocation; new approaches for cloud resources orchestration for AI data processing; new approaches to handle a dynamic dataset in the federated clouds for AI functions; Cloud and IoT combined platforms managing intelligence from IoT objects and surroundings and supporting data-intensive applications; efficient navigation, device control and enhanced decision-making technologies using intelligence, etc.).

The technologies developed should be validated through concrete cross-border AI applications in business (cross-border enterprise settings) and/or societal contexts (e.g. autonomous vehicles in a complex urban area, smart living environments, personal health systems, etc.).

The Commission considers that proposals requesting a contribution from the EU of EUR 2.2 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Expected Impact:

- Concrete implementation of interoperable and reliable combined cloud/IoT solutions to support robust AI applications.
- Facilitate and enhance the adoption of combined cloud/IoT platforms and development, operation and delivery of AI services in future.

- Credible demonstrations based on cross-border business and/or societal AI applications on the cloud platform developed.
- Joint contributions to international standardization and/or forum activities.

Type of Action: Research and Innovation action

The conditions related to this topic are provided at the end of this call and in the General Annexes.

EUK-02-2018: 5G

Specific Challenge: The next phase of 5G covers, both in EU and in South Korea, technologies and systems demonstrations and trials. The challenge is hence to demonstrate innovative use of 5G technologies and system interoperability for a number of 5G applications of interest in the two regions in early version of the 5G standard. The possibilities of even broader regional test beds or demonstrators can be proposed, e.g. through extension to other countries or regions as this could further strengthen the co-operation towards a global 5G.

The overall goal is to evaluate in real setup innovative end-to-end 5G systems built on the outcomes of the previous phase of the 5G R&I in the earlier joint call with South Korea and focus on demonstrations of applications and use cases in joint pilots in line with the phase 3 targets of 5G-PPP and their validation in a system context and in the context of multiple use cases, with performances well beyond those of early 5G trials planned over the 2018-20 period.

The call will further advance common interests in standards (e.g. cell free networks and related RAN architecture) as well as advances concerning the core network, such as slicing and virtualisation which require more efforts in cloud like core environments and open source approaches.

Scope: The focus should be on large-scale demonstrations and trials towards 5G applications, this to have a strong focus on the harmonization for 5G standards and spectrum.

The proposals should address one of the two areas (a or b):

a) Focus on mmwave and super broadband services: The 5G vision on super broadband services mainly related to very high definition immersive video services (virtual reality) using mmWave frequency bands. This should be in the proposed specific context of the ground/aerial vehicles and also possibly include a focus towards autonomous network technologies toward safe and automated 5G networks.

This focus should include demonstration of 5G technologies concerning,

(1) Access networks, notably: i) Various duplexing technologies with (or without) interference cancellation; ii) Efficient radio transmission technology for the mmwave relay links; iii) Advanced beamforming (fast switching & adaptive hybrid).

(2) Core networks, notably: i) Implementation and Proof of Concepts of 5G core systems prototype software (e.g. AMF, SMF, UPF); ii) Implementation of end-to-end network slicing and orchestration and management of autonomous 5G networks; iii) Implementation of Multi-Access Edge Computing (MEC).

b) Focus on interoperability and integration of 5G vertical testbeds on heterogeneous

environments: An open approach is to be taken to achieve a closer co-operation in spectrum harmonisation and co-operation in interoperability testing, e.g. in the C-band and/or Ka-band, to achieve coexistence and inter-working between same/different radio access technologies considering both terrestrial (i.e., cellular) and non-terrestrial links (i.e., satellite) incorporating QoS transparency between different 5G mobile core networks.

The Commission considers that proposals requesting a contribution from the EU of up to EUR 2 million would allow each area to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Expected Impact: - Global interoperability demonstrations for 5G networks, contribution to the integration framework towards access and core.

- Joint contributions to global 5G standards specifications in relevant organisations (e.g. 3GPP, ITU-R), especially in view of 5G phase 2 standardisation (beyond eMBB) and IMT2020 spectrum harmonization.

- Successful showcasing trials or testbeds with, ideally, joint demonstration across regions.

Type of Action: Research and Innovation action

The conditions related to this topic are provided at the end of this call and in the General Annexes.

Conditions for the Call - EU-Korea Joint Call

Opening date(s), deadline(s), indicative budget(s):¹

Topics (Type of Action)	Budgets (EUR million)	Deadlines
	2018	
Opening: 31 Oct 2017		
EUK-01-2018 (RIA)	2.20	31 Jan 2018
EUK-02-2018 (RIA)	4.00	
Overall indicative budget	6.20	

¹ The Director-General responsible for the call may decide to open the call up to one month prior to or after the envisaged date(s) of opening.

The Director-General responsible may delay the deadline(s) by up to two months.

All deadlines are at 17.00.00 Brussels local time.

The budget amounts for the 2018 budget are subject to the availability of the appropriations provided for in the draft budget for 2018 after the adoption of the budget 2018 by the budgetary authority or, if the budget is not adopted, as provided for in the system of provisional twelfths.

Indicative timetable for evaluation and grant agreement signature:

For single stage procedure:

- Information on the outcome of the evaluation: Maximum 5 months from the final date for submission; and
- Indicative date for the signing of grant agreements: Maximum 8 months from the final date for submission.

Eligibility and admissibility conditions: The conditions are described in General Annexes B and C of the work programme.. The following exceptions apply:

	<p>Additional admissibility criterion:</p> <p>Participants in the EU collaborative projects are required to conclude a coordination agreement with the participants in the coordinated project funded by MSIT (Ministry of Science and ICT)/IITP (Institute for Information and Communications Technology Promotion). A final draft of this agreement has to be provided with the proposal.</p> <p>Additional eligibility criteria:</p> <ul style="list-style-type: none">• Proposals submitted to this call which do not include coordination with a South Korean proposal submitted to MSIT/IITP for evaluation will be considered ineligible.• The proposed project duration shall not exceed 36 months.• The Korean authorities can consider non-eligible proposals with participation of partners from third countries (countries other than South Korea, EU and Associated states). Consultation to MSIT/IITP representatives is highly advisable before submitting proposals involving third country organisations.• Proposals will only be selected on the condition that their corresponding coordinated South Korean project will be funded by MSIT/IITP.
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Evaluation criteria, scoring and threshold: The criteria, scoring and threshold are described in General Annex H of the work programme.

Evaluation Procedure: The procedure for setting a priority order for proposals with the same score is given in General Annex H of the work programme.

The full evaluation procedure is described in the relevant [guide](#) published on the Participant Portal.

Grant Conditions:

EUK-01-2018	<p>Grants awarded under this topic will be jointly funded with:</p> <p>MSIT (Ministry of Science and ICT)/IITP (Institute for Information and Communications Technology Promotion)</p> <p>The respective options of Article 2, Article 41.5 and Article 50.3.1 (i) (j) of the Model Grant Agreement will be applied.</p>
EUK-02-2018	<p>Grants awarded under this topic will be jointly funded with:</p> <p>MSIT (Ministry of Science and ICT)/IITP (Institute for Information and Communications Technology Promotion)</p> <p>The respective options of Article 2, Article 41.5 and Article 50.3.1 (i) (j) of the Model Grant Agreement will be applied.</p>

Consortium agreement:

EUK-01-2018, EUK-02-2018	<p>Members of consortium are required to conclude a consortium agreement, in principle prior to the signature of the grant agreement.</p>
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