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## SPECIAL SESSION ON SECURITY & PRIVACY FOR INTELLIGENT, 5G-ENABLED IOT ECOSYSTEMS

### CALL FOR PAPERS

Europe is faced with economic and societal challenges such as ageing of population, ensuring societal cohesion, and sustainable development. The introduction of digital technologies in economic and societal processes is key to address these challenges and, while the fifth generation (5G) mobile communications are already upon us, the next steps in their evolution will be key in supporting this societal transformation, while also leading to a fourth industrial revolution that will impact multiple sectors. 5G is expected to transform our lives and unleash enormous economic potential. There is now the opportunity to define and develop 5G networks technologies with the long term and sustainable support of new and diverse connected devices and services, towards the realization of the pervasive computing vision. Nevertheless, some important challenges and complexities will have to be addressed in the way towards the provision of pervasive mobile 5G services, such as: sustaining massively generated network traffic with heterogeneous requirements; providing networking infrastructures featuring end-to-end connectivity, security and resource self-configuration; enabling trusted information sharing between tenants and hosts systems, and, ultimately; enabling new services and applications (e.g., communications with smart vehicles, high-speed trains, drones, industrial robots). These present diverse and often-conflicting needs for high bandwidth, lower latency, better reliability, massive connection density and improved energy efficiency. Moreover, this increasing complexity of the smart environments and the unprecedented levels of data sharing and cyber systems interoperability, have also led to increasingly sophisticated, stealthy, targeted, and multi-faceted cyber-attacks. In light of the latter, the provision of effective management of the associated cyber security risks in organizations and enterprises is becoming even more important, due to the sheer complexity of cyber systems that need to be secured and the ever-increasing number and level of sophistication of cyber-attacks.

In this context, this Special Session seeks original and unpublished work on research topics including, but not limited to, the following:

- Techniques for intent-driven end-to-end secure traffic steering and massive-scale 5G network slicing
- Novel mechanisms to ensure the trustworthiness and general security of IoT platforms and their components

- Security, Privacy, Dependability, Interoperability and performance monitoring, modeling and simulation of 5G-enabled IoT environments and the underlying communication networks
- Innovative technological building blocks that can contribute to the co-design of secure and sustainable distributed intelligent assets
- Novel model-driven methods and execution platforms for extreme-scale analytics, deep analysis, precise predictions and decision-making support in IoT and Industrial IoT environments (e.g. for predictive maintenance)
- Protocols to support the interconnectivity of large numbers of heterogeneous software and hardware smart objects, as well as other platforms/systems of similar nature
- Data anonymization, encryption and authenticity preserving mechanisms to ensure that user/object sensitive information is not disclosed to third parties without user consent
- Advanced security posture assessment tools and security training frameworks to adequately prepare stakeholders with responsibility in defending high-risk IoT cyber-physical applications to counter cyber-attacks
- Smart Object Semantic interoperability techniques, including data type mapping and transformation methods, towards secure smart object orchestrations
- IoT and 5G communication technologies and applications as enablers for a sustainable, Circular Economy

## ORGANIZERS

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