

IPFGI 2018 – Aveiro – 17 October 2018

IPFGI 2018

Universidade de Aveiro

Session on

**GOVERNANCE, TRUST, PRIVACY AND CHALLENGES
IN THE IOT AGE**

Key messages

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Key Messages

- There is an exponential growth on the number of interconnected *things* in the Internet, a market in accelerated development and where most regulatory principles are still ill defined. In particular, most IoT users are still not aware of reliability, security and privacy issues, which are key components of a sustainable IOT landscape, where a reasonable balance between different visions, usefulness and goals of all participants and stakeholders is a main requirement.
- One of the main problems that IoT needs to address is interoperability, in order to benefit from a more efficient communication infrastructure. This will also enable IoT to benefit from the best practices concerning interoperability, communications and security standards at the several IoT operation layers: from peripheric technologies (*things / edge-IoT communication environments*) to convergence and its integration in platforms of services and solutions available in the Internet.
- It is mandatory to articulate and promote the cooperation and synergies in a multi-stakeholder framework, which may contribute to the expansion of a sustainable IoT. This will enable IoT adoption in critical services where reliability, security and privacy are increasingly demanding mandatory requirements.
- IPv6, with its enlarged address space and native security support through IPSec, as well as related technologies (such as EDGE and 6LowPan), and its capability of encapsulating different protocols layers, namely data-link and network layers, is crucial for the development of IoT. IPv6 may also contribute to smooth out difficulties on the interoperability of different communication protocols, since it supports more flexible addressing and routing solutions.
- It is crucial to follow the standardization efforts developed in the scope of IETF with impact on the interoperability and security of IoT, namely the initiatives developed by IETF for IoT with impact on network, session and application protocol layers.
- The *digital twin* and the extension of digitalization to many society activities and areas enabled by the explosion of IoT devices encompass privacy and security risks. However, it will also open a vast number of possibilities, for which it will be required to anticipate and discuss societal impacts, namely on the sustainability, security and privacy fronts.