



5G security and IoT

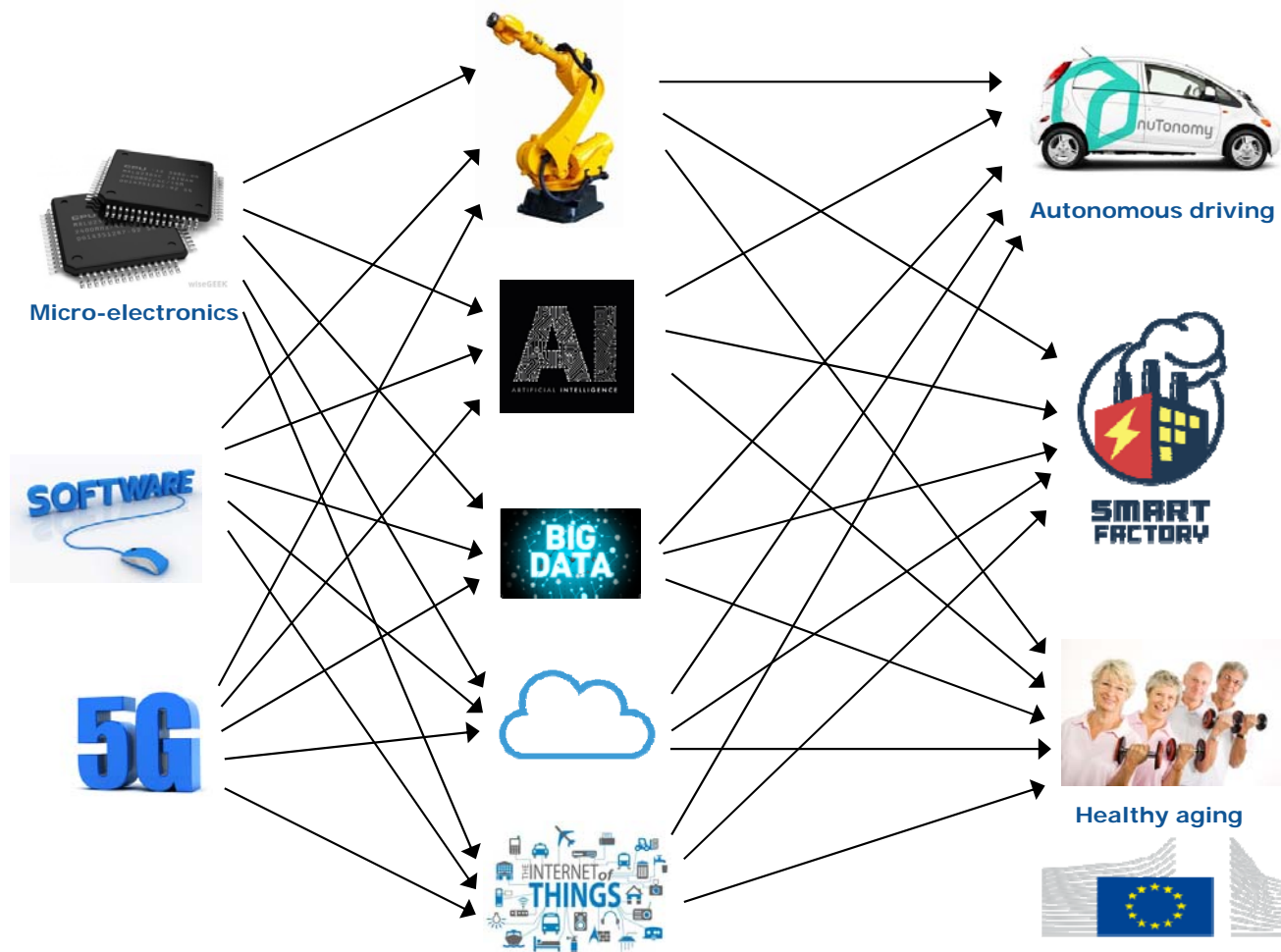
"Controlling the beast!"



ETSI Cyber Security Week
"Future-Proof IoT Security and Privacy"
Sophia Antipolis, June 13, 2018

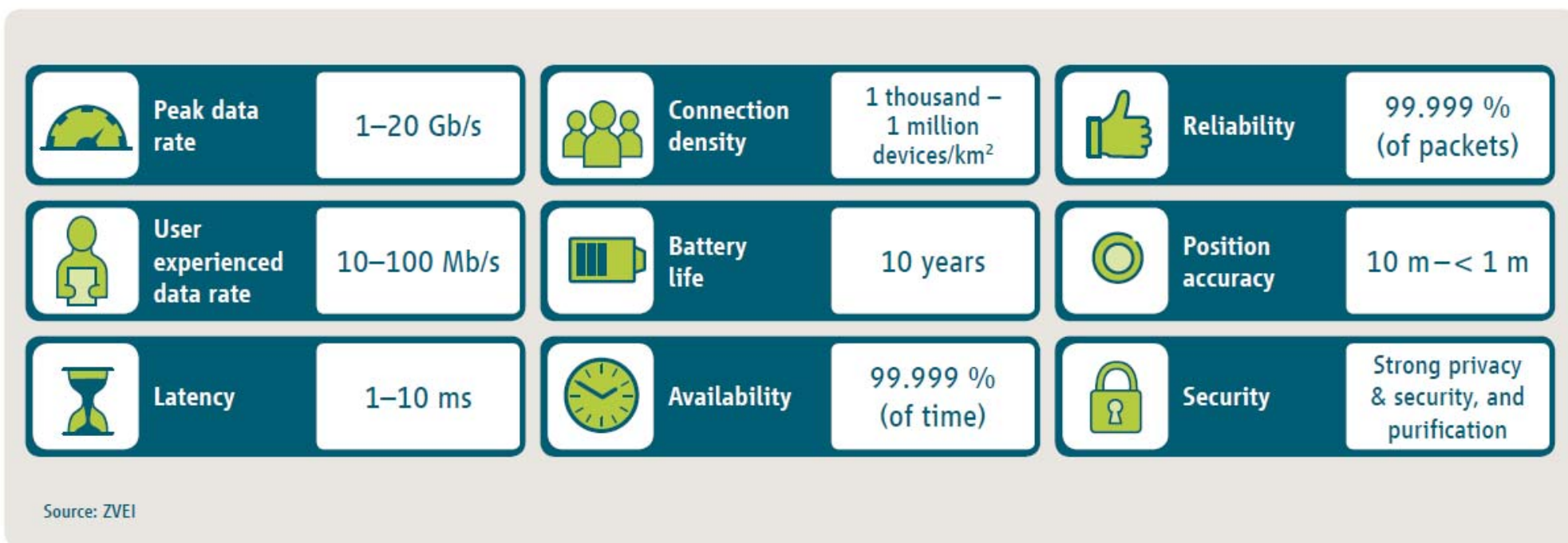
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European Commission, DG CONNECT/E4-E1

New technology value chains



Attractive 5G KPIs for Internet of Things

Figure 1: Selected target key performance indicators of 5G according to ITU-R (cf. [1])



Key 5G "novelties" raising great opportunities as well as security challenges

Softwarisation
(NFV/SDN)

Infrastructure Sharing
(MVNOs/multi-tenant)



Heterogenous
Access Nodes
+ Device to Device Communication

Edge/fog Computing



5G & IoT Standards: Challenges

- **Interoperability** – essential for a Digital Single Market, with seamless flow of data across sectors and value chains.
- **Chicken and egg** – supply- and demand-side are both struggling to define standards at appropriate level.
- **Innovation** – open innovation systems move fast, and the standards processes struggle to keep up.
- **Non-technical aspects** – solutions should be more than technical solutions, existing standards should be refined.
- **Policy & Legislation** – security and privacy are still a limiting factor.
- **Acceptance** – communities are sceptical, and often with good reason.

Tremendous potential for convergence

- ***Dramatic economies of scale:*** *Global mobile ecosystem / Holistic framework for reuse of IoT platforms / Avoid dedicated spectrum band*
- ***Disruptive business model innovation:*** *5G core network capabilities as important as 5G radio performance → Network slicing/ direct third party management of IoT*
- **But concerns about progress/strategy in 3GPP!**
 - No clear time table -> delays / fragmentation
 - Unclear IoT roadmap from LTE to 5G
 - Evolution of core network functions ?
 - Demand Side engagement

A wealth of complementary technical expertise available in various Public-Private Partnership



The 5G Infrastructure Public-Private Partnership

<https://5g-ppp.eu/white-papers/>



Alliance for Internet of Things Innovation

<https://aioti.eu/resources-new/>



<https://www.ecs-org.eu/working-groups/news>

