



Alliance for  
Internet of Things  
Innovation

IoT Week Bilbao 2018, 4<sup>th</sup> June 2018

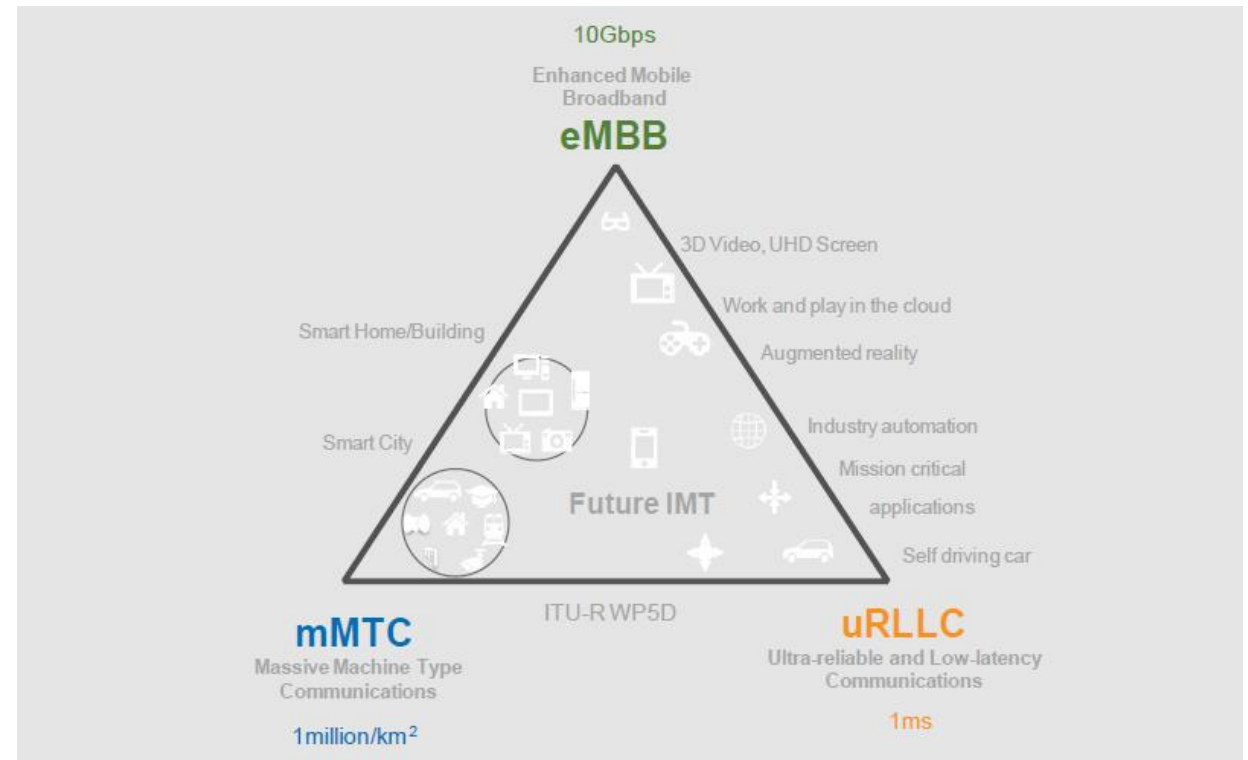
# Relations and Synergies between 5G and IoT

Georgios Karagiannis

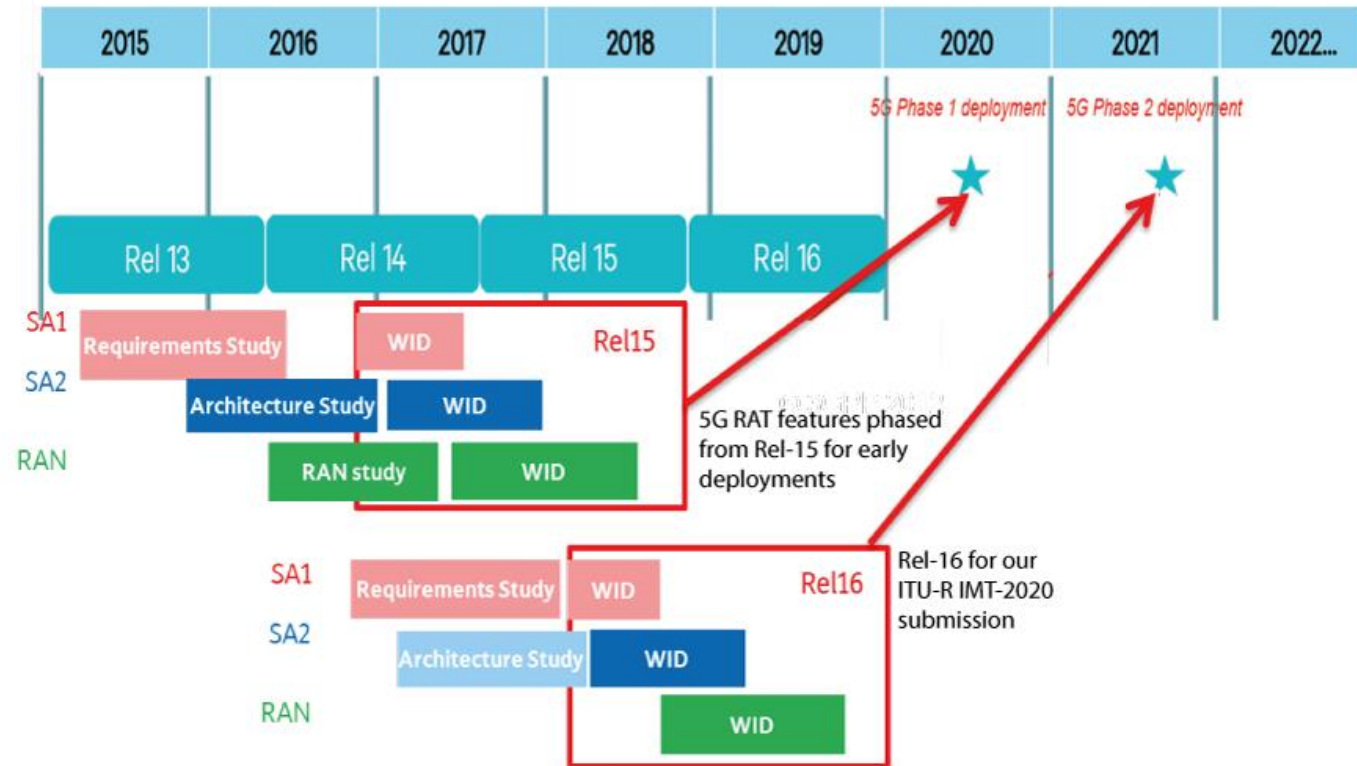
Huawei / AIOI WG03 Vice-Chairman

# Key 5G System Characteristics

- Scalable and customizable network
- Advanced Key Performance Indicators (KPIs) (e.g., availability, latency, reliability, user experienced data rates, area traffic capacity)
- Flexibility and programmability (e.g., network slicing, diverse mobility management, Network Function Virtualization)
- Resource efficiency (both user plane and control plane)
- Seamless mobility in densely populated and heterogeneous environment
- Support for real time and non-real time multimedia services and applications with advanced Quality of Experience (QoE)



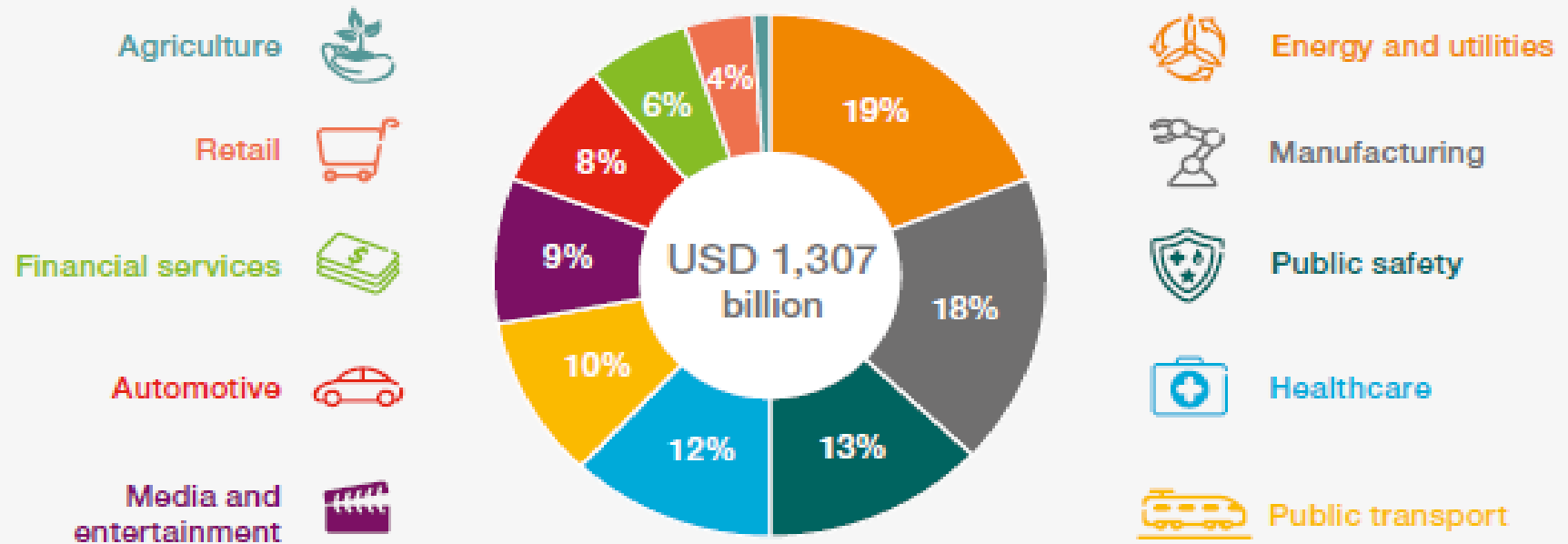
# 3GPP 5G Roadmap



# 5G enabled Revenues for 10 key industries

Digital revenue for ICT players:  $\approx$  USD 3.5 trillion by 2026 across the 10 key industries studied

5G Enabled Revenue: USD 1.307 billion



Source: Ericsson and Arthur D. Little

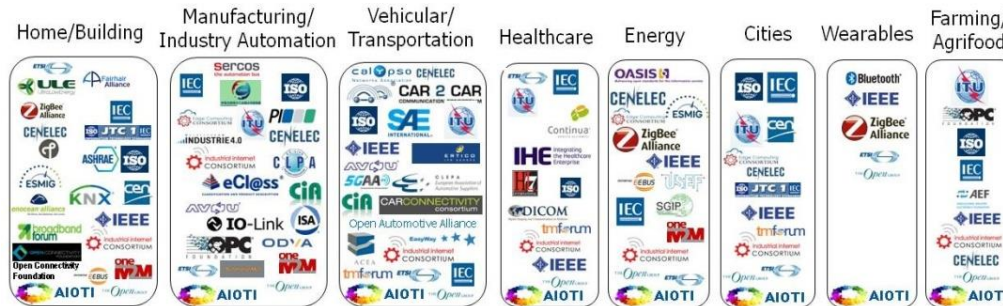
# SDOs/Alliances that stimulate relation and synergy between 5G and IoT

<b><u>3GPP</u></b>	<b>3GPP</b> is currently working on the requirements for automation in verticals focusing on critical communications ( <a href="#">TR-22-804</a> )
<b><u>TMForum</u></b>	Projects: <b>ODA (Open Digital Architecture)</b> <a href="https://www.tmforum.org/resources/technical-report/tr276-monetizing-5g-r17-5-0/">https://www.tmforum.org/resources/technical-report/tr276-monetizing-5g-r17-5-0/</a> <a href="https://www.tmforum.org/wp-content/uploads/2017/10/TM-FORUM-Open-Digital-Architecture-FINAL.pdf">https://www.tmforum.org/wp-content/uploads/2017/10/TM-FORUM-Open-Digital-Architecture-FINAL.pdf</a> <a href="https://www.tmforum.org/resources/whitepapers/open-digital-architecture/">https://www.tmforum.org/resources/whitepapers/open-digital-architecture/</a> <a href="https://www.tmforum.org/resources/collection/agile-ossbss-toolkit/">https://www.tmforum.org/resources/collection/agile-ossbss-toolkit/</a>
<b><u>IEC</u></b>	<b>IEC</b> started working on the relation and synergy between 5G and OT (operational technology) in the following groups: <a href="#">IEC SEG 8</a> (Communication Technologies and Architectures of Electrotechnical Systems) <a href="#">IEC MSB</a> (Market Strategy Board) <a href="http://www.iec.ch/msb">www.iec.ch/msb</a>
<b><u>ITU-T</u></b>	<b>No work yet started</b> , only studied the business-role based models perspective Question 20 of <a href="#">SG13</a> , ITU-T draft Recommendation Y.IMT2020-BM "Business role-based models in IMT-2020"
<b><u>GSMA</u></b>	Projects: <b>GSMA: M-IoT and NB-IoT Forum</b> <a href="https://www.gsma.com/iot/mobile-iot-5g-future/">https://www.gsma.com/iot/mobile-iot-5g-future/</a> <a href="https://www.gsma.com/iot/mobile-iot-innovators/">https://www.gsma.com/iot/mobile-iot-innovators/</a> <a href="https://www.gsma.com/iot/wp-content/uploads/2018/05/GSMALoT_MobileIoT_5G_Future_May2018.pdf">https://www.gsma.com/iot/wp-content/uploads/2018/05/GSMALoT_MobileIoT_5G_Future_May2018.pdf</a> <b>GSMA Network Slicing (NEST) and Future Networks</b> <a href="https://www.gsma.com/futurenetworks/5g/network-slicing-use-cases-requirements/">https://www.gsma.com/futurenetworks/5g/network-slicing-use-cases-requirements/</a>

# SDOs/Alliances that stimulate relation and synergy between 5G and IoT

<b><u>AIOTI</u></b>	<b>AIOTI WG03</b> (IoT Standardization) focuses on identifying key requirements imposed by vertical industry sectors and define their impact on the 5G architecture and features
<b><u>5GAA</u></b>	<b>5G Automotive Association (5GAA)</b> was created to connect the telecom industry and vehicle manufacturers to develop end-to-end solutions for future mobility and transportation services ( <a href="#">5GAA position papers</a> )
<b><u>5GACIA</u></b>	<b>5G Alliance for Connected Industries and Automation (5GACIA)</b> ensures the best possible applicability of 5G technology and 5G networks for the manufacturing and process industries by addressing, discussing and evaluating relevant technical, regulatory and business aspects ( <a href="#">5GACIA white paper</a> )
<b>5GAS</b>	<b>5G Slicing Association (5GSA)</b> focuses on how Network Slicing can enable and accelerate digital transformation in industry verticals ( <a href="#">5GSA Position paper</a> )

# AIOTI brings together Vertical and Horizontal industries



- **AIOTI supports the Win-win Opportunity**
  - Industry digitization is driving great demands for all-connectivity, triggering increasing interest from vertical and horizontal industries for sustainable networking solutions with scalability, flexibility and inter-operability
- Enabling technologies like 5G, IoT, Big Data and Artificial Intelligence (AI) support the industry digitization:
- relying, on robust connectivity of trillions of devices and open sharing of data
  - is new engine for economic growth and social development
- AIOTI WG03 focuses on identifying key requirements imposed by vertical industry sectors and define their impact on the 5G architecture and features



Horizontal/Telecommunication

