



Press Release  
EU, September 5<sup>th</sup> 2013  
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## **The 5G future scenarios identified by METIS –The first step toward a 5G mobile and wireless communications system**

*METIS, Mobile and wireless communications Enablers for the Twenty-twenty (2020) Information Society, has identified the 5G future scenarios.*

**European Union, September 5<sup>th</sup> 2013:** The launch of the METIS project last year, as the first international and large-scale research activity on 5G, has triggered extraordinary global interest on the topic of 5G. Moreover, in 2013 the EU announced research grants worth up to €50 million to develop '5G' technology.

That the interest is so high is not surprising as societal development has been leading to changes in the way mobile and wireless communication systems are used. In fact, it is predicted that smartphone subscriptions will grow from 1.2 billion in 2012 to 4.5 billion by 2018.

This in turn means an equally astonishing increase in mobile data traffic, which doubled between Q1 2012 and Q1 2013, and by the end of 2018 it is expected to be 12 times as large as it was at the end of 2012.

The surge in mobile data consumption is driven not only by growth in subscriptions, but also by people generating more and more data. The future information society users will demand and rely on a wide variety of applications and services, ranging from infotainment services, through increased safe and efficient usage of transportation, to completely new industrial applications.

Based on these user demands and on the already known challenges such as very high data rates, dense crowds of users, low latency, low energy, low cost and a massive number of devices, METIS has outlined the following 5G scenarios that reflect the future challenges and will serve as guidance for further work:

1. "Amazingly fast", focusing on high data-rates for future mobile broadband users,
2. "Great service in a crowd", focusing on mobile broadband access even in very crowded areas and conditions,
3. "Ubiquitous things communicating", focusing on efficient handling of a very large number of devices with widely varying requirements,
4. "Best experience follows you", focusing on delivering high levels of user experience to mobile end users, and
5. "Super real-time and reliable connections", focusing on new applications and use cases with stringent requirements on latency and reliability.

METIS has derived a challenging set of requirements from these scenarios, which can be summarized as:

- Ten to one hundred times higher typical user data rate where in a dense urban environment the typical user data rate will range from one to ten Gbps,
- One thousand times more mobile data per area (per user) where the volume per area (per user) will be over 100 Gbps/km<sup>2</sup> (resp. 500 Gbyte/user/month),
- Ten to one hundred times more connected devices,
- Ten times longer battery life for low-power massive machine communications where machines such as sensors or pagers will have a battery life of a decade,
- Support of ultra-fast application response times (e.g. for tactile internet) where the end-to-end latency will be less than 5 ms with high reliability, and
- A key challenge will be to fulfill the previous requirements under a similar cost and energy dissipation per area as in today's cellular systems.

In the coming months, METIS will continue to lay the foundation of the 5G mobile and wireless communications system. In particular, METIS is developing and evaluating the key technology components of 5G systems, and will integrate the technical components that address the requirements of this system.

## Contact

For any questions regarding METIS, please contact the project coordinator:

Dr. Afif Osseiran, Ericsson

E-mail: [contact@metis2020.com](mailto:contact@metis2020.com)

 [twitter.com/metis2020](https://twitter.com/metis2020)

 [facebook.com/metis2020](https://facebook.com/metis2020)

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## Partners



## Additional Information

METIS is co-funded by the European Commission as an Integrated Project under the Seventh Framework Programme for Research and Development (FP7). The project has a total budget of €27 million.

The strong METIS consortium includes telecommunications manufacturers, network operators, the automotive industry and the academic sector: Ericsson, Aalborg University, Aalto University, Alcatel-Lucent, Anite, BMW Group Research and Technology, Chalmers University of Technology, Deutsche Telekom, NTT DOCOMO, France Telecom-Orange, Fraunhofer-Gesellschaft, Huawei Technologies GmbH, KTH – Royal Institute of Technology, National and Kapodistrian University of Athens, Nokia Corporation, Nokia Siemens Networks, University of Oulu, Poznan University of Technology, RWTH Aachen, Institut Mines-Télécom, Telecom Italia, Telefónica, University of Bremen, University of Kaiserslautern, and Universitat Politècnica de València.

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