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Major Positions of the Task Force 5G

For optimally supporting the needs of the manufacturing and process industries, the Task Force 5G recommends that future mobile networks and in particular 5G should provide:

1) Industry-grade quality of service with very low end-to-end latencies (<1 ms), high synchronicity between different devices (<1 µs), high data rates (up to several Gb/s) and potentially ultra-high communication service availability (>99.9999%), even for challenging industrial propagation conditions with very rich multipath propagation and potentially significant interference.

2) The ability to deploy and operate private 5G networks (i.e., without the involvement of traditional MNOs) in well-defined areas (e.g., within a factory) using dedicated spectrum.

3) Standardized, open and flexible interfaces for a seamless interoperability and seamless handovers between public networks (i.e., networks operated by traditional MNOs) and private 5G infrastructures.

4) End-to-end network slicing across heterogeneous technologies, countries and network operators, with the ability to dynamically establish and release fine-granular, application-specific network slices characterized by well-defined QoS and security properties in an easy-to-use manner.

5) Seamless integration into the existing connectivity infrastructure (e.g., with technologies such as Industrial Ethernet and TSN), taking the special characteristics and requirements of industrial applications into consideration.

6) Globally harmonized spectrum, for both licensed and license-exempt allocations.

7) A very flexible and versatile air interface, which may satisfy the highly varying requirements of diverse use cases and applications, ranging from ultra-reliable low-latency communication over massive machine-type communication to enhanced mobile broadband.

8) Support of multiple (well-separated) tenants using the same physical connectivity infrastructure in a factory.

9) The ability to continuously monitor the current network state in real-time even as a user, to take quick and automated actions in case of problems and to do efficient root-cause analyses.

10) In-built indoor and outdoor user equipment localization with an accuracy of at least 10 cm.

ZVEI - German Electrical and Electronic Manufacturers´ Association • Lyoner Straße 9 • 60528 Frankfurt am Main • Germany
Automation Divison
Telephone: +49 69 6302-392 • Fax: +49 69 6302-279 • E-mail wiesner@zvei.org • www.zvei.org

President: Michael Ziesemer • The Management: Dr. Klaus Mittelbach (CEO), Frank Bechtloff (COO)