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## 5G Mobile Edge Computing – Integrated, Secured Platform for Industrial Metaverse Use Cases

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### Abstract

The purpose of the presentation is to describe how 5G edge computing can be utilized in automated industrial processes that require real-time, immersive digital capabilities. It builds on recent experiences in planning and implementing use cases in the selected industry sectors that are seeking new business opportunities from the applications of industrial metaverse. The use cases are characterized with an ambition to strive for sustainable and digital operations without compromising security.

The presentation starts with a short analysis of the emerging industry digitalization (Industry 4.0) from real-time data and metaverse perspective. It contains the introduction of key concepts, terms, and definitions under the umbrella of industrial metaverse. The presentation focuses on the real-life use cases of selected industrial enterprises to improve customer satisfaction, efficiency, and sustainability with industrial metaverse applications.

The use cases are studied from the lens of five different industry sectors that have both similarities and differences in applying new digital capabilities. They provide new insight on the use of digital twins, video analytics, and AR/VR supported operations. In principle, all use cases require full mobility and are therefore to be implemented based on 5G standalone technology which allows high throughput and low latency with edge computing. As the interoperability between IT and OT systems play a significant role, meeting the requirements of cybersecurity become vital.

The 5G mobile edge provides industrial enterprises with a trusted, scalable connectivity and computing platform that enables the development of real-time metaverse applications in a sustainable and secure manner.

**Keywords:** Industrial Metaverse, 5G Standalone, Mobile Edge Computing, Cybersecurity