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TALK TO US

5G Campus Network Leverages Industry 4.0

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Ruggedized 3D printers for medical use in harsh military environments

Can 3D printers treat soldiers on the battlefield? Yes — sort of. A recent pilot program conducted by the Uniformed Services University (USU) of the Health Sciences shows that 3D printers can be deployed in desert and remote environments to fabricate medical tools and biomaterials, where it's not practical to have soldiers carry hundreds of medical supplies in their packs.

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Samsung Touts Superiority of Stand Alone Version of 5G

Samsung and Intel are claiming a major breakthrough in the data processing capacity of 5G Stand Alone (SA) cores. The companies say they achieved 305 Gbps per server and latency capacity in a commercial network set-up.

The advance was achieved using software optimization on Intel's second-generation Xeon 8280 Scalable processor, as well as the chip company's E810 Ethernet Adapter, which includes enhanced dynamic device personalization (DPP) functions. These are said to simplify data processing, which typically needs a complex path using multiple cores, including packet distribution, transmission and processing cores.

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The project has been awarded with the University of Birmingham's Partnership Resource Funding, UK Quantum Technology Hub Sensors and Timing. The project team also includes the Universities of Strathclyde and Edinburgh as part of the consortium.

The project addresses a crucial need to increase energy density, durability and safety in batteries, thus driving the industrial revolution towards an increasingly green ecosystem. To achieve these and other green goals, intensive research and development in these areas are needed while implementing environmental policies.

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Speaking on the occasion, the Prime Minister termed today's event as an attempt to make urban development future ready. He said preparing the country for future needs is an important responsibility of governance. He lamented the fact that a few decades ago, when the demand of urbanisation was felt, there was not much attention given to the needs of the future, half-hearted work was done and confusion persisted. He said unlike this, modern thinking says that urbanization should not be seen as a challenge but used as an opportunity to build better infrastructure in the country, an opportunity through which we can enhance Ease of Living. He said this difference of thinking is seen now in every dimension of urbanization.

5G Campus Network Leverages Industry 4.0

5G accelerates the internet of things and supports Industry 4.0. As it is deployed in factories, sensor-based monitoring and maintenance systems, machinery, and logistics equipment benefit from faster, more reliable, and real-time wireless data transfers. To unleash the full potential of 5G, Bosch has installed its first 5G campus network at its main factory in Stuttgart-Feuerbach, Germany.

Operating a 5G campus network at Bosch's main Industry 4.0 factory in Stuttgart-Feuerbach was made possible after the German authorities allowed companies to set up their own local campus networks. The Bundesnetzagentur – the regulatory authority responsible for frequency allocation in Germany – recently changed its policy and now offers companies licenses for their private use. Bosch applied for 5G licenses for selected German locations and received operating licenses for its lead plant in Stuttgart-Feuerbach and research campus in Renningen.

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The pilot program, called Fabrication in Austere Environments, was developed under USU's federally-funded 4-Dimensional Bioprinting, Biofabrication, and Biomanufactuing (4D Bio3) Program, along with the U.S. Military Academy at West Point, the Geneva Foundation as well as two manufacturers — 3D printer maker NScrypt, Inc. and commercial space company Techshot, Inc. The goal is to fabricate medical products and tissues in harsh environments with a ruggedized 3D printer. Announced in 2018, the five-year program is tasked with researching, developing, and applying new bioprinting, biofabrication, and biomanufacturing technologies.