Teraki launches AI and edge processing technology to meet exploding data analytics demands of the automotive industry

Teraki's breakthrough AI technology enters market using Infineon's AURIX™ line of automotive microcontrollers

Teraki's 10X plus increase in automotive chip, communications and learning performance makes highly accurate AI applications possible in existing embedded environments

OktoberTech 2018, Palo Alto, Calif., October 11, 2018 – Teraki, a technology leader in AI and edge processing, today announced the immediate availability of its AI and edge processing technology to meet the exploding data analytics demands of the automotive industry. Teraki's Intelligent Signal Processing software delivers a more than 10X increase in automotive chip, communications and learning performance, making highly accurate AI applications possible in embedded environments.

The company brings a more than tenfold increase in efficiency to the components and systems used in the Global Automotive Electronics Market, estimated to reach $395 billion by 2024[1], with 70 percent of cars sold in 2025 expected to be connected cars.[2] The data processing challenge of self-driving cars is illustrated by the fact it will generate 60,000X more data than the average smartphone today.

The company also announced that Infineon's AURIX™ microcontrollers will be the first to market with an integration of Teraki's breakthrough AI technology.

Teraki is taking technology honed at the highest end of data analytics accuracy requirements and scaling it efficiently for the highly-constrained automotive infrastructure and, over time, other data-intensive IoT markets.

Today, the automotive industry and its OEMs and insurance providers face an incredible opportunity to deliver innovative, cost-effective ways to use the vast amount of data generated by in-vehicle sensors, electronic control units (ECUs) and AI to improve vehicle safety and lower operational costs.

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[1] "Automotive Electronics Market Size By Application," Global Market Insights, September 2017.
2 "Connected Vehicles," Navigant Research, Q1 2017.

The problem, however, is that the high cost of expensive AI chips and the high computing demands of neural networks are preventing the widespread scaling of automotive AI applications. In addition, the limited processing power of ECUs, the bandwidth constraints of the in-vehicle CAN Bus, the data communication costs of car-to-cloud networks, and the time required to train AI and machine learning components have been significant barriers to developing and scaling new – and often real-time – applications.

Teraki vaults these barriers with its breakthrough, edge processing technology. Teraki down scales the cloud analytics models to fit and operate in or with resource- and cost-constrained automotive ECUs and networks. The result is more than a **4-10X** factor increase in edge processing solutions for automotive chip and data communications and more than a **10X** faster in AI or machine learning time performance.

”The biggest challenge for automotive system designers when implementing AI-driven applications is to find the balance between growing amounts of sensor data and the constraints of communication and processing technology. Utilizing Infineon’s AURIX™ microcontrollers that support ASIL-D systems, Teraki delivers an innovative approach that significantly improves data analytics and enables true low-latency mobility services,” said Ritesh Tyagi, head of the Infineon Silicon Valley Automotive Innovation Center. “For applications such as accident detection, driver behavior identification and predictive maintenance, the combination of these technologies translates into greater accuracy in detecting and responding to real-time events, resulting in higher levels of system reliability.”

Teraki has already generated significant momentum, completing several pre-production validations by premium automotive manufacturers and their chip suppliers, as well as having many ongoing proofs of concept with additional OEMs.

“The performance leaps our technology provides using Infineon’s AURIX™ microcontrollers usher in a new era of innovation possibilities for the automotive industry,” said Daniel Richart, cofounder and CEO of Teraki. “Our Intelligent Signal Processing software allows conventional sensors and ECUs to do far more, makes AI more practical, affordable and scalable, and significantly reduces CAN Bus and car-to-cloud bandwidth constraints.”

The mathematics behind the technology comes from co-founders Daniel Richart and Markus Kopf, and a talented team consisting of more than 10 researchers. Richart comes from the Max Planck Institute of Quantum Optics in Munich working under Nobel Prize-winning atomic physicist Theodor W. Hänsch. Richart led research projects in quantum computing, a new field

challenged by analyzing enormous volumes of data representing the multiple possible simultaneous combinations of quantum states of a particle.

Teraki recently announced it has raised $3 million in cumulative seed financing and government grants, with new investors Paladin Capital Group and GPS Ventures GmbH joining previous investors including Deutsche Telekom hub:raum.

For more information, visit https://www.teraki.com/.

Video Resource:
Teraki Introduction Video (2:30 in length)

About Teraki
Teraki provides breakthrough edge data processing software to meet the exploding data demands of the $395 billion automotive electronics industry. The company's AI-based Intelligent Signal Processing software delivers a more than 10X increase in automotive chip, communications and learning performance. This makes highly accurate AI applications possible at scale in embedded environments.

These leaps in performance enable the automotive industry to develop new, innovative and cost-effective ways to use the vast amount of data generated by in-vehicle sensors and control units (ECUs, MCUs, TCUs) to improve vehicle safety and autonomy at lower operational costs. Teraki has completed several pre-production validations by premium automotive manufacturers, as well as successful integrations on a variety of microcontrollers.

Headquartered in Berlin, Teraki is privately held and funded with seed investments from Paladin Capital Group, GPS Ventures GmbH and Deutsche Telekom hub:raum.

About Infineon
Infineon Technologies AG is a world leader in semiconductor solutions that make life easier, safer and greener. Microelectronics from Infineon is the key to a better future. In the 2017 fiscal year (ending 30 September), the Company reported sales of around €7.1 billion with about 37,500 employees worldwide. Infineon is listed on the Frankfurt Stock Exchange (ticker symbol: IFX) and in the USA on the over-the-counter market OTCQX International Premier (ticker symbol: IFNNY).