

Testimony of Dr. Gary D. Butler to the Subcommittee on Digital Commerce and Consumer Protection

United States House of Representatives

Committee on Energy and Commerce

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SUMMARY OF MAJOR POINTS:

- The Industrial Internet of Things (IIoT) is a key segment of the IoT market for business.
- Industrial IIoT applications represents a new form of intelligent systems that are driving revolutionary gains in business productivity and efficiency.
- Camgian's Egburt is an award winning IIoT platform that is being used for developing applications in areas related to condition based monitoring and maintenance of high value industrial assets.
- Industrial IIoT system architectures include industrial assets imbued with sensing, processing, software and communications technologies.
- Insights from industrial IIoT systems are driving better and faster decisions and delivering enormous business and economic advantages to companies and organizations worldwide.
- Camgian and its partners are leveraging Egburt in the development of new applications for managing the reliable operations of remote industrial assets such as civil infrastructure and marine power generation systems.
- Industrial IIoT enabled gains in productivity, cost reductions and worker safety are now driving the technology's widespread adoption throughout our society including transportation, manufacturing, oil and gas, healthcare, power distribution and agriculture to name a few.
- Fueling the future growth of industrial IIoT will be new innovations in advanced sensor and analytical processing technologies to exploit the untapped value of data from billions of new sensors.
- With Egburt, Camgian is tackling IIoT's big data challenge through a confluence of innovations in real-time signal processing, data analytics and machine learning with the aim of transforming today's human centric IIoT models into semi- and fully-autonomous, intelligent systems.
- The United States is positioned to take the lead role as innovator and provider of industrial IIoT technologies to the global economy.

WRITTEN TESTIMONY:

Good morning. Chairman Latta, ranking member Schakowsky, and members of the Subcommittee, thank you for the opportunity to testify today. My name is Gary Butler and I am the founder and CEO of Camgian Microsystems Corporation, a developer of advanced sensing and analytical processing technologies. Camgian, a Starkville, Mississippi based high tech company, has been recognized by leading technology analysts such as Gartner for our product innovation in the Internet of Things (IoT) sector.

While much of the attention in IoT has been focused around consumer applications, our efforts are addressing the commercial market. Sometimes described as the Industrial Internet of Things, this segment of the IoT space represents a new form of intelligent systems that are optimizing the dynamic of humans, data and machines to drive revolutionary gains in productivity and efficiency. From maximizing asset utilization to improving safety, industrial IoT technologies stand to transform business and drive a new wave of global economic expansion.

To address this opportunity, we developed Egburt, an award-winning IoT software platform built on an edge computing model. Egburt performs advanced multi-sensor data processing at the network's edge to enable efficient and scalable IoT operations with economical utilization of communications resources. In partnership with our clients, we are developing industrial IoT applications built on Egburt in areas related to condition based monitoring and maintenance of remote high value assets and equipment. Based on our experiences in developing and deploying such systems, I would like to offer the Subcommittee my perspective on the state of industrial IoT and its future.

At Camgian, we see IoT as a critical technology trend that doesn't merely connect the physical world, but powers it using advanced computing. That is to say, IoT extends the reach of today's software and data processing technologies far beyond traditional Internet boundaries and into the physical world around us. This is enabled through a system architectural model where industrial assets are imbued with sensing,

processing, software and communications technologies. The result is the generation of critical insights into the operation and maintenance of industrial systems that were previously unavailable. Today, such insights are driving better and faster decisions and delivering enormous business and economic advantages to companies and organizations worldwide.

A case study includes our work in condition based monitoring where we are partnered with clients responsible for managing the reliable operations of remote industrial assets. Examples include large civil infrastructure systems such as locks and dams and power systems for marine operations such as diesel engines and generators. In these cases, downtime due to unscheduled maintenance can represent millions of dollars of economic loss.

To address this problem, we are leveraging Egbert in the development of new applications that will provide operations and maintenance personnel the ability to remotely and efficiently monitor the condition of large numbers of industrial assets across their enterprise. Specifically, this includes the remote collection and analytical processing of large volumes of asset sensor data to identify failures before they happen and drive radical improvements in operational reliability and safety.

The potential value of eliminating unscheduled downtime across the industrial sector is enormous, but represents only one example of the economic power of this technology trend. Similar IoT enabled gains in productivity, cost reductions and worker safety are emerging in other industries and are now driving the technology's widespread adoption throughout our society in areas such as transportation, manufacturing, oil and gas, healthcare, power distribution and agriculture to name a few. Management consultant Accenture estimates that industrial IoT technologies could add \$14.2 trillion to the global economy by 2030 including \$7.1 trillion for the United States¹.

Looking ahead, fueling this growth will be new innovations in advanced sensor and analytical processing technologies. With billions of industrial sensors deployed today and growing, exploiting the untapped value of the massive data sets generated from these devices will be the next big leap in IoT's technology

evolution. With Egbert, we are tackling this big data challenge through a confluence of innovations in real-time signal processing, data analytics and machine learning with the aim of transforming today's human centric IoT models into semi- and fully-autonomous, intelligent systems. This will include automating the data to decision continuum, a tipping point in IoT's evolution that will spark a wave of automation, re-inventing industrial processes and transforming the future workforce.

As with earlier generations of the Internet, the United States is poised to take the lead role as innovator and provider of industrial IoT technologies to the global economy. Compared to previous emerging technology sectors, the potential financial implications of IoT are unprecedented. As such, I would urge members to promote the growth of industrial IoT through expanded federal research funding, adoption within federal agencies and the creation of a friendly regulatory environment.

Thank you and I look forward to your questions.

REFERENCES:

1. Winning with the Industrial Internet of Things: How to accelerate the journey to productivity and growth, Accenture 2015.