

The Industrial Internet Consortium (IIC) held its 2018 third-quarter member meeting September 10th ~ 13th in Chicago, Illinois, USA. It was as busy and productive as usual, with 24 testbed sessions and 73 working sessions.

For the two first quarters of 2018 we focused on energy, specifically with the Global Event Series. We are now shifting to Intelligent Transportation Systems (ITS) and stepping it up to include multiple technical sessions. We have:

- established Automotive and Automotive Security groups,
- laid the groundwork for ITS-related testbeds,
- heard from a panel of end-user experts,
- kicked off discussions for ITS-related liaisons and
- launched an End-User Leadership Council including members from the transportation sector.

We focus on vertical domains to add value to operational experts who work in them. By exploring and testing aspects of security, trustworthiness, interoperability, connectivity and business strategy, and tapping the insights of end-users, the IIC ecosystem helps to understand the demands of, and lay the groundwork for, succeeding in that vertical domain.

To this end, we devoted a complete track for a full day to discuss ITS. Each group was requested to identify areas in which their work might be valuable in ITS and to identify things they thought they might learn from the challenges that ITS faces. We also ran separate sessions on:

- over-the-air (OTA) updates, which is important for updating the software in vehicles,
- validation and verification (V&V), which is needed to ensure that everything works, especially after an update,
- automotive security, as a pressing and immediate need, and
- automotive, one area of ITS especially important to our members.

The liaison working group also allocated some time to identify potential liaisons, which will be followed up this quarter.

We will focus on ITS for at least the next two quarters.

### PUBLICATIONS AND GROUP ACTIVITIES

Our groups continue to make progress on their activities and deliverables. Find a complete list of IIC publications at the IIC [Technical papers, publications and white papers page](#).

The technology group published these documents during the third quarter:

- a technical report, the [Industrial Internet of Things: Key System Concerns](#), which highlights key system concerns in industrial internet systems. It analyzes special topics to assist those involved in designing and implementing IIoT architectures.
- an update to the vocabulary technical report, [the Industrial Internet of Things Vocabulary Technical Report v2.1](#), which specifies a common set of definitions for effective communication within the Industrial Internet ecosystem. This update defines several terms that are important in the field of edge computing, data management, interoperability, connectivity and IT/OT convergence.
- the [Industrial Networking Enabling IIoT Communication](#), which introduces industrial networking for industrial internet of things (IIoT) system designers and network engineers, and offers practical solutions based on key usage scenarios.
- and [Introduction to Edge Computing in IIoT](#), which provides practical guidance on edge computing, architectures and the building blocks necessary for edge computing implementations.

The technology working group continues activities focused on architecture and edge computing as well as with a newly commissioned focus on distributed ledger and IIoT systems management.

Trustworthiness is a key cross-cutting system concern. It is the degree of confidence one has that the system performs as expected, accounting for security, safety, privacy, reliability and resilience. Trustworthiness is especially important in safety critical systems, such as automotive and ITS. Members across groups, and especially from the security working group, contributed to the publication of articles focused on trustworthiness in the [September 2018 edition of the Journal of Innovation \(JOI\)](#). The articles cover a range of topics from basic introduction to advanced application in IIoT systems.

The liaison program has expanded to include forty liaisons. Most recently the IIC welcomed new liaisons [Internet of Things Alliance Australia](#) (IoTAA), [GlobalPlatform](#), and [International Data Spaces Association](#).

A joint liaison workshop, *Intelligent Transportation System Liaisons: Driving External Collaboration through the ITS IIoT Ecosystems*, was conducted with liaison organization EdgeX Foundry. Joint workshops with IIC liaison organizations are organized to foster relationships that generate requirements for new standards to accelerate the adoption of the industrial internet.

Expanding the IIoT ecosystem is a key benefit of IIC membership. Another [IIC Connect](#) event, a business-to-business IIC member connection event, was held during the third quarter meeting. It attracted 56 participants and resulted in 28 interactive sessions. Demand was high and more sessions will be scheduled at future meetings to offer members even greater opportunity to connect with one another.

The German Regional Team continues to connect German IIC members and support IIC's visibility in the German market. It has made significant progress on the German translation of [Vocab v2.1](#).

### END-USER LEADERSHIP COUNCIL

Senior-level end-users and implementers of IIoT technology were invited to join a council of peers for an inaugural meeting of the IIC's *End-User Leadership Council* launching this month. Representatives from Boeing, B&R Automation, Bosch Rexroth, GE Aviation, GE Transportation, TRUMPF, Deere & Co. and Church & Dwight discussed insights and implementation challenges along with strategic positioning of the IIC community, taking steps toward setting the vision for the industry.

### TESTBEDS

Testbeds provide an environment for companies and multi-disciplinary stakeholders to team up, prove out complex systems and gain real-world experience. With 27 approved IIC testbeds and more in the pipeline, participants are generating best practices, recommendations and priorities for standards organizations.

Shortly after the prior meeting, the IIC approved the [Optimizing Manufacturing Processes with Artificial Intelligence](#) testbed. This testbed establishes an end-to-end industrial internet platform comprising an edge computing platform and a cloud computing platform. The edge platform supports connectivity to and data collection from the equipment, then runs AI models and edge applications for the local optimization of manufacturing processes. The cloud platform supports historical data accumulation and storage and supports AI model building and collaboration between AI/IT developers and plant engineers in creating, testing and running data/AI model-driven industrial applications for global and long-term optimization across production lines and plants. The testbed is sponsored by Wanxiang Group and supported by Thingswise, DELL EMC, Xilinx, China Unicom and CAICT.

The latest approved testbed is the [Smart Printing Factory Testbed](#). The testbed automates print production and predictive maintenance for factory-based printing equipment. The testbed is led by Fujifilm and supported by IIC members Fujitsu, IBM, RTI and Toshiba.

Testbeds are publishing results. The most recent results are published as [Results, Insights and Best Practices from IIC Testbeds: Smart Manufacturing Connectivity for Brown-field Sensors Testbed](#). The main objective of this testbed is to provide a high volume of sensor data from brownfield manufacturing installations to enterprise IT systems in near real-time. The publication describes challenges, results, standards, and experiences of the testbed.

### Global Event Series

The IIC recently hosted an [Intelligent Manufacturing Solutions Forum](#) in the Solutions Theater at Hannover Messe USA, Chicago (US version of Hannover Messe run by Deutsche Messe). IIC member representatives from B&R, Microsoft, SAS and Xilinx presented along with their customers from IMA Automation Technology S.p.A., Emerson, GE Transportation and Perrone

Robotics. A representative from Wipro led a panel discussion with additional participation from UL LLC, Fraunhofer iOSB and Entrust Datacard.

## Webinars

We held an [Edge Computing Jam Session](#), which focused on the rapidly growing role of edge computing in IIoT, and published four new webinars, [A Framework for Turning IoT into Operational Capability](#), [the Benefits of Securing Industrial IoT Endpoints](#), [Cognitive Computing in Energy & Utilities](#) and [Digging In – Preparing for IoT in Mining](#). You may receive notification about upcoming webinars by subscribing to the IIC [BrightTALK channel](#).

## News and Milestones

With over 6,200 media mentions and press coverage in the last eight months, IIC testbeds and member companies generate significant recognition. Find media coverage at the [IIC recent news page](#).

## INDIVIDUAL CONTRIBUTOR AWARD

We are pleased to announce that Sven Schrecker, Vice President and Chief Architect of Cybersecurity at LHP Engineering Solutions, is the winner of the IIC's Q3 Individual Contributor Award. Sven was recognized by his peers for his leadership and contributions as the co-chair of the Security Working Group, Automotive Security Task Group, Security Liaisons Contributing Group, Security Framework Editors and Joint Task Group 5 (Security) with Plattform Industrie 4.0, and his guidance to the Automotive Task Group. His nomination cited his dedication to IIC expansion efforts, the past year's ramping up of the Automotive Task Group and his continued efforts in the Security Working Group and Auto-ISAC.



Congratulations, Sven!

## IoT Solutions World Congress

The IIC and Fira Barcelona will once again host the [IoTSWC](#), October 16<sup>th</sup> ~ 18<sup>th</sup>. This event is dedicated to joining IoT providers with industry to help the latter increase productivity via this disruptive technology.



After three editions, the event has grown to become the global reference for industrial IoT, and the annual meeting for industry stakeholders to establish new partnerships. With an exhibition covering 32,000 m<sup>2</sup>, the 2018 edition will continue to explore the latest industrial IoT innovations to bring visitors the necessary cutting-edge expertise and strategies to capitalize on IoT featuring over 300 exhibitors and 14,000 visitors.

Now in its fourth year, the event has become the global reference for IIoT where IIC members and IoT industry leaders participate in presentations, exhibits, session leadership, panel discussion.

Our IIC Member Pavilion includes seventeen members' innovations, one testbed and an automotive security demonstration.

## NEW MEMBERS

Please welcome new members this quarter:

- [AASA \(USA\)](#)
- [Augmate Corporation \(USA\)](#)
- [Linaro Ltd. \(UK\)](#)
- [China Industrial Control Systems Cyber Emergency Response Team \(CICS-CERT\)](#)
- [Confia Systems](#)
- [Echelon Corporation](#)
- [Oak Ridge National Laboratory \(USA\)](#)
- [Owl Cyber Defense Solutions](#)
- [Prasaga LLC \(USA\)](#)
- [Quartic.ai, Inc. \(USA\)](#)

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*The Industrial Internet Consortium is the world's leading membership program transforming business and society by accelerating the Industrial Internet of Things. Our mission is to deliver a trustworthy Industrial Internet of Things in which the world's systems and devices are securely connected and controlled to deliver transformational outcomes. Founded March 2014, the Industrial Internet Consortium catalyzes and coordinates the priorities and enabling technologies of the Industrial Internet. The Industrial Internet Consortium is a program of the Object Management Group® (OMG®). Visit [www.iiconsortium.org](http://www.iiconsortium.org).*

IIC members gain experience they could never have as a non-member. They experience member meetings unlike any local meet-up groups. Here are some key benefits of membership:

- **Networking**—Make the connections; find the needed expertise.
- **Information & News**—A fast pass to newsworthy industry developments.
- **Competitive edge**—Stay ahead of the competition or take advantage of changes and developments that might otherwise have passed you by.
- **Create a market**—Join a collective voice supporting a single mission; create the disruption in the market and develop the business opportunities.
- **Success**—Members are building businesses and dedicating their professional lives to IIoT. They want to be successful, and they want others to succeed.
- **Professional development**—Grow your career, meet mentors and mentees, career prospects.
- **Solve important problems**—and help your partners and customers.
- **Events** – Capitalize on opportunities for continuous exposure to industry developments.