

The Industrial Internet Consortium (IIC) held its second quarter member meeting of 2019 on May 20th ~ 23rd in Cork, Ireland. It was as busy and productive as ever, with 75 working sessions, 19 breakout sessions, 17 testbed sessions, four panels, and 197 people in attendance.

The meeting was held in partnership with the Cork Institute of Technology (CIT). CIT was founded in 1973 specifically to ensure that students were well-equipped in science, technology, engineering and math (STEM) to meet the needs of the city's largest industrial contributors such as Apple, Dell EMC, VMWare, Pfizer and Boston Scientific. Cybersecurity, medical devices and manufacturing are the mainstays of the city's industrial landscape.

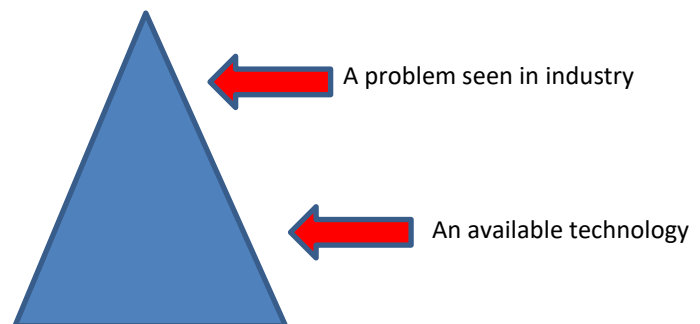
CIT's raison d'être is to create a feedback loop from industry to academia and back again. Its board comprises industry representatives and it designs its courses with the assistance of industrial organizations so as to fill their skills needs. CIT-owned subsidiaries such as Nimbus Research Centre play a supportive role in linking industry with academia. In this instance Nimbus provides consultancy, research and business services in IoT, drawing on the institute's talent pool to assist with its work and then feeding this back into the academic experience.

This forms an ecosystem of industry and academia and we took full advantage of this experience as we think about how better to serve our members through co-creation with industry.

### CO-CREATION

Nine months ago, we initiated "focus areas". These are areas in industry on which we could focus (hence the name) to bring technology to bear in that vertical. Relating information and operational technology is one problem, but relating a pain point in a specific vertical to technology that might address it is even more difficult.

Our first focus area was Intelligent Transportation Systems (ITS) and we set about allocating a track for a complete day to look only at ITS. Of course, ITS is still huge, covering automotive, metro systems, infrastructure, marine and air, but you have to start somewhere! Interest centered primarily around automotive (especially security) and over-the-air updates (OTA), obviously an issue in automotive where you don't want to bring your car into the garage to increase the lifetime of your battery during a [hurricane](#).



We continued our focus on ITS through the fourth quarter last year and this year's first quarter, gaining momentum as we went. This quarter we selected smart manufacturing as our next focus and allocated over half a day to it. Sessions included "Additive Manufacturing-Improving Process Understanding and Viability Through the Application of Digital Technologies" from Professor Denis Dowling, Director of the [I-Form Advanced Manufacturing Research Centre](#), "Business Outcomes of IIoT at a Midsize Packaging Manufacturer" from Roger Richardson a co-founder and commercial director for [Corlina](#), a panel on "Biggest Challenges, High Priority Solutions for Smart Manufacturing" and a joint session with the End-User Leadership Council to discuss IIC plans to further address the needs of IoT end users, manufacturing pain points and blockers followed by a discussion on what assets should be developed and in what priority to help with manufacturing.

We also maintained momentum in ITS, continuing the work in security and OTA.

The purpose here is to *accelerate the development of the industrial internet*, and that can surely only be done by working with industry verticals to make them successful. The focus area is one way to contact those industries, but we need to be more systematic and support industry across the entire project lifecycle.

When Sir Tim Berners Lee invented the universal resource locator (URL) in 1989, he would have had little idea of the kinds of applications, features and uses of his invention 30 years later. We are in a similar position with respect to the industrial internet. We can see the immediate applications, but working out how to make the most of this technology in industry is less obvious. A first step that could help then is *ideation*, coming up with ideas and prioritizing them. (The IIC's [Business Strategy and Innovation Framework](#) covers some of these ideas.) This step yields one or more ideas for projects that can be carried out.

Next, we need to bring technology supplier and industry user together. This is what the IIC ecosystem (and corresponding ideas at CIT and Nimbus) is for. We can then begin to execute. The incentive for the technology supplier is to demonstrate the usefulness of the technology; the incentive for the industry user is to relieve that pain point and learn from the experience.

Is this a testbed? No. Testbeds typically provide an environment for companies and multi-disciplinary stakeholders to team up to identify best practices, insights, priorities, use cases and recommendations for standards development organizations. Yes, it is a scaled-down real-world project (just like a testbed) but the goal is to go to market, prove out the system and gain real-world experience.

This represents a developing program to connect technology with industry and co-create systems that benefit both industry users and technology vendors, and, in so doing, accelerate the development of the industrial internet, which is our mission in life, after all.

## RESOURCE HUB

We have added a [Maturity Assessment tool](#) to help understand your organization. Check it out!

## TESTBEDS

Our testbed program has grown to 26 [Approved IIC Testbeds](#) and more in the pipeline. You can also visit the [Resource Hub's Testbeds Webpage](#) for more detailed information.

The [Time Sensitive Networking for Flexible Manufacturing Testbed](#) published its second recent white paper [Characterization and Mapping of Converged Traffic Types](#) on 2019-03-28. The white paper describes application traffic types that are found in industrial and process control systems, including different types of critical control traffic and other traffic that may be in a manufacturing network.

## GLOBAL EVENT SERIES

We held a public [Smart Manufacturing Forum](#) hosted on the campus of IIC member, [Cork Institute of Technology](#) (CIT), in Cork, Ireland. Speakers and panelists contributed to an outstanding agenda and a successful event. The audience was treated to thought leadership from IIC members and our event partners, all of which included: [Confirm Research Center](#), [Corlina](#), [Cork Institute of Technology](#), [Dell EMC](#), [Entrust Datacard](#), [Hamilton Institute at Maynooth University](#), [Huawei](#), [I-Form Advanced Manufacturing Centre](#), [MITRE](#), [Siemens](#), [Stryker](#), [University of Limerick](#) and [Wanxiang Group](#). Technology demonstrations were offered over the lunch hour in the CIT Student Centre. Our next event in the series is an [Industry IoT in Action Forum](#) on 2019-09-12 at [Disney's Grand California Hotel & Spa](#) in Anaheim, California and the agenda will be posted in the coming weeks. Also during the week of 2019-09-09 in Anaheim and the agenda will be published in the coming weeks. Keep an eye on our [Events Page](#) as the agenda and speakers are finalized.

Details about this and past Global Event Series events can be found on the [IIC Events page](#).

## GROUP ACTIVITIES

Our groups continue to make progress on their various activities and deliverables. You can find a complete list of IIC publications on the [Technical Papers, Publications and White Papers](#) webpage.

The Ecosystem Task Group held another [IIC Connect](#) event in Cork, Ireland during our second quarterly member meeting. 14 hours of meeting slots were allocated to the event where 13 one-on-one sessions were scheduled with 50 total participants. More sessions will be scheduled at future quarterly member meetings to give members greater opportunity to connect with one another. In addition, the Task Group unveiled two innovative approaches to feature member companies via an hour-long No PowerPoint Zone session where members provided three-minute overviews of their respective organizations to attendees and a Laptop Fair where members displayed their organizational offerings on their laptops.

The Architecture Task Group published the [Industrial Internet Reference Architecture v1.9](#) on 2019-06-19.

## Co-creation

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The Innovation Task Group together with the [Republic of Work](#) in Cork, Ireland hosted a Pitch Night event on 2019-05-21 consisting of 111 members, 4 IoT startups ([ApisProtect](#), [meetingRoom.io](#), [Remote Signals](#) and [Wia](#)) and a panel of 5 IIC member judges as the startups pitched their IoT business ventures. Though all 4 startup pitches were exceptional, in the end, it was ApisProtect who was declared the winner and awarded a one-year membership to the IIC.

The Thought Leadership Task Group published its 11<sup>th</sup> edition of the [Journal of Innovation](#) showcasing *Artificial Intelligence* on 2019-06-20.

The Liaison Working Group expanded the number of active liaisons to forty-seven by adding [5G-ACIA](#), [AECC](#), [AIM](#), [GMG](#) and [TloTA](#).

## PAST EVENTS

### **IIC Member Pavilion, Hannover Messe, Germany (1-5 April 2019)**

We kicked off the start of the second quarter with our IIC Member Pavilion at [Hannover Messe](#) in Germany where nine members showcased their technology under our eye-catching canopy, alongside the [TSN Testbed](#), the [Smart Factory Web Testbed](#) and the Automotive Security Demonstration. The booth had high traffic throughout the week, [announcements](#) of IIC collaborations, industry-leading innovations and demonstrations highlighting the IIC's influence in the adoption of the Industrial Internet.

### **Over-the-Air Special Interest Group (OTA-SIG) Workshop, Mountain View, CA (2019-05-12)**

Our OTA SIG Workshop was an invitation-only event for members and cross-industry OEM or Tier 1 suppliers. The attendees conveyed they found great value in the discussions and look forward to continuing the conversation within the IIC's OTA-SIG Task Group. OEMs and Tier 1 suppliers across all relevant industries interested in joining the OTA-SIG can find details and contact information on the [Event Webpage](#).

### **Intelligent Transport Systems Forum, IoT World, Santa Clara, CA (2019-05-13)**

We hosted a booth and a pre-event workshop at IoT World Santa Clara. The forum presentations are available on the [Event Webpage](#). Our pre-event workshop had the greatest attendance of all concurrent workshops and our booth on the exhibit floor hosted a great numbers of visitors interested in the work of the IIC.

## UPCOMING EVENTS

### **IIC Member Pavilion, IoT Solutions World Congress, Barcelona, Spain (29-31 October 2019)**

Pedestals within the IIC Member Pavilion of this event are still available and may be reserved by 2019-06-28 by contacting [Matt Sexton](#). Opportunities to [exhibit](#) at and [sponsor](#) the event are also available.

### **Open Edge Symposium, Long Beach, CA (11 ~ 12 December 2019)**

The [Open Edge Symposium](#) was formerly the Fog World Congress. The conference, *Exploring Intelligent Edge-Fog Solutions for the IIoT*, will include three tracks: Research, Academia & Standards, Technical, and Business Outcomes. Dr. Mung Chiang, John A. Edwardson Dean of the College of Engineering, Purdue University, and IIC Steering Committee member, will deliver the keynote for Open Edge Symposium 2019. The call for participation and speakers is open until 2019-07-19.

### **4<sup>th</sup> Smart Factory Expo, IIC Member Pavilion, Toyko, Japan (2 ~ 14 February 2020)**

The [Smart Factory Expo](#) is a specialized exhibition that showcases the latest technologies and solutions such as IoT solutions for realizing smart factories, smart logistics, AI, FA and robots. We are hosting an IIC Member Pavilion at this event for the first time and pedestals are available for reservation now by contacting [Matt Sexton](#).

### **TESTBED AWARD WINNER**

The winner of the Q2 Testbed Award is Paul Didier, Solutions Architect Manager, Cisco System's Industries Product Group. The award was presented to Paul in absentia by the Steering Committee during the opening session of the Q2 member meeting in Cork, Ireland. Paul was recognized by his peers for his overall leadership and continued dedication to the IIC by:



- Driving and coordinating the [Time Sensitive Networking \(TSN\) Testbed](#) since its 2015 inception with more than 30-member company contributors as well as multiple instances of the Testbed (US and Europe). The Testbed has won multiple awards including the [2017 IoT Solutions World Congress Best Testbed](#) and is continuously producing valuable insights that are shared with other IIC groups and the general industry. The testbed has produced two [white papers](#) and feedback to standardization bodies. This [brochure](#) details the testbed and its accomplishments.
- Ensuring all 30+ members of the testbed cooperate with each other and have their needs addressed.
- Maximizing the testbed's exposure and its findings to the industry and the public, from demonstrating it at [Hannover Messe](#) to publishing white papers including the most recent, [Time Sensitive Networking for Flexible Manufacturing Testbed: Characterization and Mapping of Converged Traffic Types](#).

Congratulations Paul!

## NEW MEMBERS

Please welcome new members this quarter:

- [ApisProtect](#)
- [BIAC](#)
- [Brightsight BV](#)
- [Clarity, Inc.](#)
- [FreeWave Technologies](#)
- [iExec Blockchain Tech](#)
- [Industrial Technology Research Institute](#)
- [Institute for Information Industry](#)
- [Ivado Labs](#)
- [Moabi](#)
- [Nanyang Technological University](#)
- [National Taiwan University](#)
- [Shanxi Research Institute for Clean Energy, Tsinghua University](#)
- [StealthPath](#)
- [Tianjin Anjie Public Facilities Service Co., Ltd](#)

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*The Industrial Internet Consortium, incorporating OpenFog, is the world's leading organization 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.
- **Establish a vision**—Members work to define future architectures and innovate technologies for IIoT.
- **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.

