Industrial Internet Consortium Publishes the Industrial Internet Reference Architecture V 1.8

by **Gary Mintchell** on February 3, 2017 in **Internet of Things**, **News**, **Organizations**

Committee co-chair Mark Crawford of the The Industrial Internet Consortium (IIC) told me yesterday that its Industrial Internet Reference Architecture is a living document. The committee revises frequently in order to stay current with rapidly moving technology and use cases.

Therefore, it is no surprise that the organization has published version 1.8 of the Industrial Internet Reference Architecture (IIRA). This new version builds on version 1.7, originally published on June 17, 2015. The document is applicable both for systems architects and business leaders who wish to incorporate the Internet of Things into their corporate strategies.

The IIRA is a standards-based architectural template and methodology designed by a broad spectrum of IIC members, including system and software architects, business experts, and security experts, to assist IIoT system architects to design IIoT solution architectures consistently and to deploy interoperable IIoT systems. It is important to note that the IIRA itself is not a standard.

"The IIC is committed to delivering practical deliverables to the IIoT community that represent the latest thinking about IIoT," said John Tuccillo, Senior Vice President of Global Industry and Government Affairs, Schneider Electric and IIC Steering Committee Chair. "The IIRA, like all IIC deliverables, is a living document. The IIRA and the now the IIRA v1.8 are the first steps toward an open, innovative and thriving technology development ecosystem across industrial sectors of the IoT."

"We have already seen customers who are using the IIRA to define and deploy their IIoT systems," said Dr. Tanja Rueckert, Executive Vice President, IoT and Digital Supply Chain at SAP SE and IIC Steering Committee Vice Chair. "The IIRA and the other IIC deliverables provide significant value to IIC members as well as the broader IIoT and IoT communities."

IIRA v1.8 Benefits

The IIoT core concepts and technologies addressed in the IIRA v1.8 are applicable to the depth and breadth of every small, medium and large enterprise in manufacturing, mining, transportation, energy, agriculture, healthcare, public infrastructure and virtually every other industry. In addition to IIoT system architects, the plain language of IIRA v1.8 and its emphasis on the value proposition and enablement of converging Operational Technology (OT) and Information Technology (IT) enables business decision-makers, plant managers, and IT managers to better understand how to drive IIoT system development from a business perspective.

"It has been widely recognized that IIoT delivers value and transforms business. A main challenge for many enterprises now is how to get started," said Shi-Wan Lin, CEO & Co-Founder, Thingswise, LLC and Co-Chair of the IIC Architecture Task Group. "The IIRA provides a framework to drive IIoT projects from a business viewpoint. This is valuable for enterprises to build IIoT systems that can deliver the expected business value."

Technology vendors can use the IIRA concepts and methodologies to build interoperable system components that address the broadest possible market. System implementers can use the IIRA as a starting point to shorten system development by deploying reusable, commercially available, or open-source system building blocks to reduce project risk, associated costs, and time-to-market. Ultimately, the IIRA will help the IIoT community to realize an open, innovative IIoT ecosystem, thereby reducing the cost of design and operations.

"The value of the IIC is that it brings together a set of diverse, talented people with an extraordinary set of knowledge to develop innovative technology to solve corporate-level industrial challenges," said Todd Edmunds, Global Manufacturing Solutions Architect – Internet of Things at Cisco Systems and Co-Chair of the IIC Edge Computing Task Group. "The IIRA accelerates the development of solutions to digitize business and realize IIoT's true potential to transform industry."

Journal of Innovation

Capping a busy week, the IIC has also published the Third Edition of the Journal of Innovation. A publication written by IIC members, the third edition of the Journal of Innovation is dedicated to the "Smart Factory," and includes articles on designing, retrofitting, and applying IIoT technologies within the manufacturing industry.

"Manufacturers are challenged to make factories more efficient, safer and greener than ever before," said Erik Walenza-Slabe, CEO, IoT One and Co-chair, IIC Smart Factory TG. "While no single organization can solve all the problems of the IIoT, the IIC is helping to revolutionize manufacturing through its many activities, including the innovations described in the third edition of the Journal of Innovation dedicated to the 'Smart Factory.'"

New to this edition are two articles summarizing interviews with two IIC testbed leads, describing insights, outcomes and lessons learned. These articles highlight the innovations taking place in the Time Sensitive Networking (TSN) Testbed and the INFINITE Testbed.

"Testbeds are at the very core of what we do in IIC and we aim to feature testbeds in all of our future editions," said Edy Liongosari, Chief Research Scientist of Accenture Labs and co-chair of the IIC Thought Leadership Task Group.

The Journal of Innovation includes the following articles authored by IIC member companies:

- "Blurry Box Encryption Scheme and Why it Matters to Industrial IoT"
- "Results, Insights and Best Practices from IIC Testbeds: Time Sensitive Networking (TSN) Testbed"
- "Making Factories Smarter through Machine Learning"
- "Driving Innovation in Product Design and Manufacturing using 3D Printing"
- "Results, Insights and Best Practices from IIC Testbeds: INFINITE Testbed"
- "Smart Factories and the Challenges of the Proximity Network"

Authors and interviewees within the third edition include Cisco, Cork Institute of Technology, Dell EMC Research Europe, Ikergune, IT Research Center, Karlsruhe Institute of Technology, Plethora IIoT, QualiCal, Synapse Wireless, System On Chip Engineering, Xilinx, Wibu-Systems

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