IoT World

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- Alstom
- Altran
- Axa
- Continental
- Eolane
- NXP Semiconductors
- Sagem
- Schneider Electric
- Sorin,
- STMicroelectronics
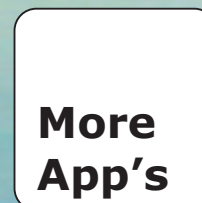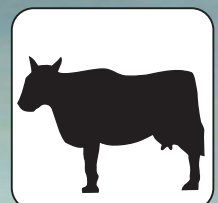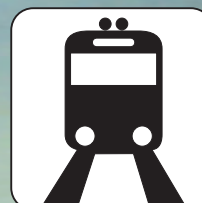- SurTec
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Technology Platform incl.
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■ The Right Middleware for Industrial IoT

■ Making a clear distinction between M2M and IoT

■ Bluemix the latest Cloud offering from IBM

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Digital Signage

More App's

Much More App's

The Internet of Things will connect Billions of Devices,
IoT World is connecting you with your Next Customers & Partners TODAY
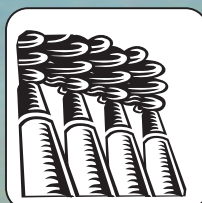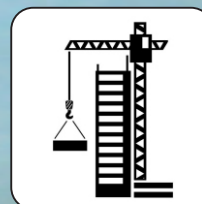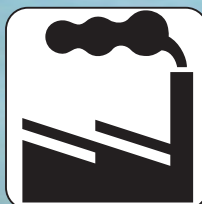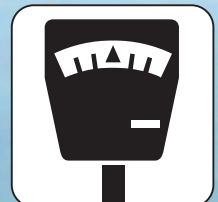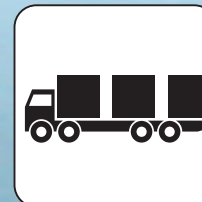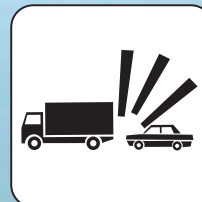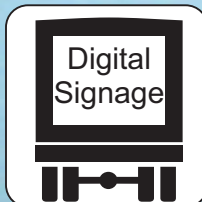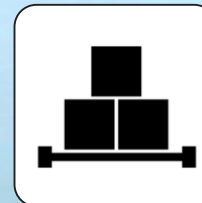
DDS: the Right Middleware for the Industrial Internet of Things?

A Whitepaper from RTI - Real-Time Innovations, USA

The Industrial Internet of Things is the Exciting Future

By connecting people to vast stores of information, the Internet and smartphones made a profound impact on the world. There are about 1 billion nodes on the Internet, including laptops, computers, and servers. The mobile revolution added about 5 billion smart phones.

However, these pale in comparison to the next wave of connectivity. The Internet of Things (IoT) promises to connect up to 50 billion devices in just 5 years. The IoT will dwarf the Internet by a factor of 50, and the mobile revolution by a factor of 10. The profundity of that statement is difficult to overstate. The IoT will revolutionize everything from how you live to how the electric grid generates power.

Some IoT applications are still about people, such as wearable smart glasses and smart home thermostats. But the vast new opportunity is about infrastructure in industry. Smart machines will change the w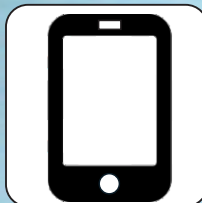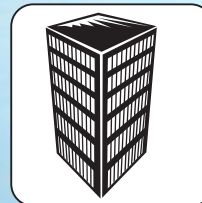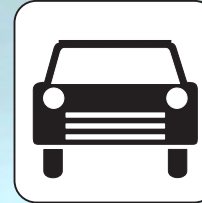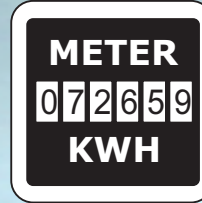orld economy more than anything since the industrial revolution. These smart machines will combine to form an Industrial Internet of Things (IIoT) that connects devices into truly intelligent distributed systems.

This paper focuses on that IIoT opportunity. In particular, it introduces a networking standard called the **Data Distribution Service (DDS)**. DDS powers real-world IIoT applications in medicine, transportation, energy, SCADA and more. It is capable of building full "sensor-to-cloud" integrated systems that connect operational systems with cloud analytics. This system-wide integration is the key to enabling the IIoT.

What is the Industrial Internet of Things?

Industry leaders are all positioning around the IoT and the IIoT:

• **Cisco** calls it the "Internet of Everything…the latest wave of the Internet -- connecting physical objects… to provide better safety, comfort, and efficiency."
• **IBM** says, "the Internet of Things…is a completely new world-wide web, one comprised of the messages that digitally empowered devices would send to one another. It is the same Internet, but not the same Web."
• **GE** coined the term, "Industrial Internet." Their vision is the "…convergence of machine and intelligent data…to create brilliant machines."

Cisco's position is broad and absolutely true. But by focusing on everything, it doesn't capture the nature of the change to industry. IBM correctly points out that while the foundational infrastructure of the Internet is unchanged, the IoT is not a human-controlled web. The IIoT requires new protocols that marshal the information that devices need in the way they need them. However, it talks about how to implement the change, not the change itself.

GE's vision beautifully captures the real change: brilliant machines. The current Internet is about people. The IIoT is about smart machines. More specifically, the IIoT is about the futuristic systems that will drive the physical world. GE's vision recognizes the key step: connecting machine control with cloud analytics and optimization. GE envisions a platform for truly intelligent, distributed machines.

S3P - Smart, Safe & Secure Platform Consortium of Industry Leaders for IoT

Consortium of Industry Leaders launches the "S3P" Major Collaborative Project and Alliance S3P Project aims at developing a Smart, Safe and Secure Software Development and Execution Platform for the "Internet of Things"

PARIS, France — December 8th, 2015

Consortium Leader:
• Esterel Technologies (wholly owned affiliate of ANSYS)

Technology Platform Partners:
• CEA Tech
• Krono Safe
• MicroEJ
• Prismtech
• Prove & Run
• SYSGO
• Telecom ParisTech
• TrustInSoft

Industrial Users Partners:
• Airbus
• Alstom
• Altran Connected Solutions (World Class Center of Altran)
• Axa France
• Continental
• Eolane
• NXP Semiconductors
• Sagem
• Schneider Electric
• Sorin
• STMicroelectronics
• SurTec
• Thales

Together are creating the S3P Consortium to develop an IoT Software Development and Execution Platform, S3 Platform.

The S3P Platform aims at enabling the rapid development and exploitation of IoT-capable devices and applications, combining unprecedented safety, security, agility and portability.

The S3P Consortium also creates with the support of the Embedded France Association, the Cap'tronic Association and the Eclipse Foundation the S3P Alliance ecosystem to foster the wider national and international deployment of its initiative with the aim at further expanding its usage by other leading consumer and industrial brands.

The development of the S3 Platform is supported by the S3P Project, a 45 M€ investment project, that is financially supported by the S3P Consortium members and by the French Government "Nouvelle France Industrielle" initiative with a 18.3 M€ government funding, under the "Programme d'Investissements d'Avenir".

" The creation of S3 Platform, Project and Alliance is a key contribution to building a smart, safe and secure software development and execution platform for the worldwide deployment of IoT", said Eric BANTEGNIE, CEO of Esterel Technologies and Vice President of ANSYS, Inc., "it also contributes directly to the objectives of building a comprehensive "Digital Trust Solution" for the development of the economy, a key objective of the French government".

Full Press Release and Info Click Here

Making a clear distinction between M2M and IoT

From our colleague: Mark Newman/Ovum

There's nothing that analysts like more than debating the merits of a new technology, product, or service. And when it comes to a subject as rich in promise as the Internet of Things, debates get pretty heated.

At Ovum we are fortunate to have analysts covering the breadth of the TMT sector. Some of us focus on service providers and their technology suppliers while others are experts on enterprise IT. They sit squarely between enterprise and technology vendors. At the start of this year we launched a new service covering IoT (called the Internet of Things). But we continue to use the term M2M specifically for tracking contracts and operator revenues.

Those of us who have a background in telecom tend not to make a clear distinction between the two terms, although there is a general acceptance that M2M sits within the larger IoT category (I have heard the CEO of one large technology vendor use the term IoT to refer to digital transformation more broadly). We have observed the evolution of M2M for the last 10 to 20 years.

We have seen its transition from a niche market with dedicated service providers buying connectivity from telecom operators into a far larger market, as well as the entry of large IT firms and systems integrators.

Within enterprise and IT circles there is a much clearer distinction between IoT and M2M. For M2M, read "connectivity." And for connectivity, read "telecom operator." The term M2M specifically refers to the connectivity element of an IoT solution. And telecom operators are not really viewed as players in IoT beyond the provision of the connectivity layer.

Even telecom operators themselves seem to be unsure of how far they should be attempting to extend their competence beyond connectivity. Speaking at an event in London earlier this month, Vodafone CEO Vittorio Colao said that for the time being Vodafone's aspirations in the broader ICT services market were limited to connectivity and extensions of connectivity. However, he added that Vodafone was moving into IoT IT services. Tellingly, Colao said that he expected systems integrators to continue to compete aggressively and that Vodafone would seek to partner with players such as IBM and Accenture to define solutions.

Ovum is forecasting that mobile operators will generate $13.8 billion from M2M services in 2015 (equivalent to 1.5% of total mobile operator revenues). Most of this revenue stems either from connectivity (the sale of SIM cards for M2M) or managed connectivity. The connectivity share of total M2M service revenues is small and declining as a result of the falling cost of cellular data. Furthermore, new low-cost alternatives to cellular connectivity are emerging. This week Orange announced the rollout of a national IoT network using low-power LoRa technology. Within the home, Wi-Fi will predominantly provide connectivity.

Ovum has settled on definitions for M2M and IoT that make a distinction between connections using licensed- or operator-managed spectrum and connections using unlicensed spectrum. We have defined M2M as connected devices that are of sufficient individual value to justify the embedding of discretely paid-for, point-to-point, subscription-based connectivity. These devices will either be high-value end-point assets, such as items of industrial equipment, or points of concentration where data from numerous LAN-attached devices is aggregated for backhaul. The smartphone could also act as one such point of concentration.

Surrounding the M2M center and constituting the bulk of all IoT end-points is a nebulous cloud of LAN-attached devices. These LAN devices may be little more than sensors, with the hardware and data collected by them being insufficiently valuable for paid-for point-to-point connectivity to be economical. Unlike M2M connections, these devices utilize unlicensed spectrum.

The connected car is a good illustration of how to apply this definition. The car itself is the concentrator, connected to a cellular network, but the whole IoT solution contains a number of different services and applications such as diagnostics, entertainment, and insurance telematics.

This definition does not necessarily provide the clear distinction between M2M and IoT that many people outside the telecoms sector would like to see. And we retain the option of revising it should, for example, the cost of licensed-managed or operator-managed connectivity fall to such a low level that it accounts for the majority of connections.

Over time it is inevitable that the term M2M will fall by the wayside as volumes of connected devices grow and M2M businesses rebrand themselves as IoT companies. Whether telecom operators expand their role beyond connectivity is the bigger question – one which analysts will continue to debate.

About OVUM

We are part of Informa Group, the world's leading provider of business intelligence. Informa has over 6,000 employees and delivers specialised information to companies operating in sectors including agriculture, consumer, commodities, energy & utilities, financial services, healthcare & pharmaceuticals, maritime, telecoms, media, and IT. http://www.ovum.com/about-us/

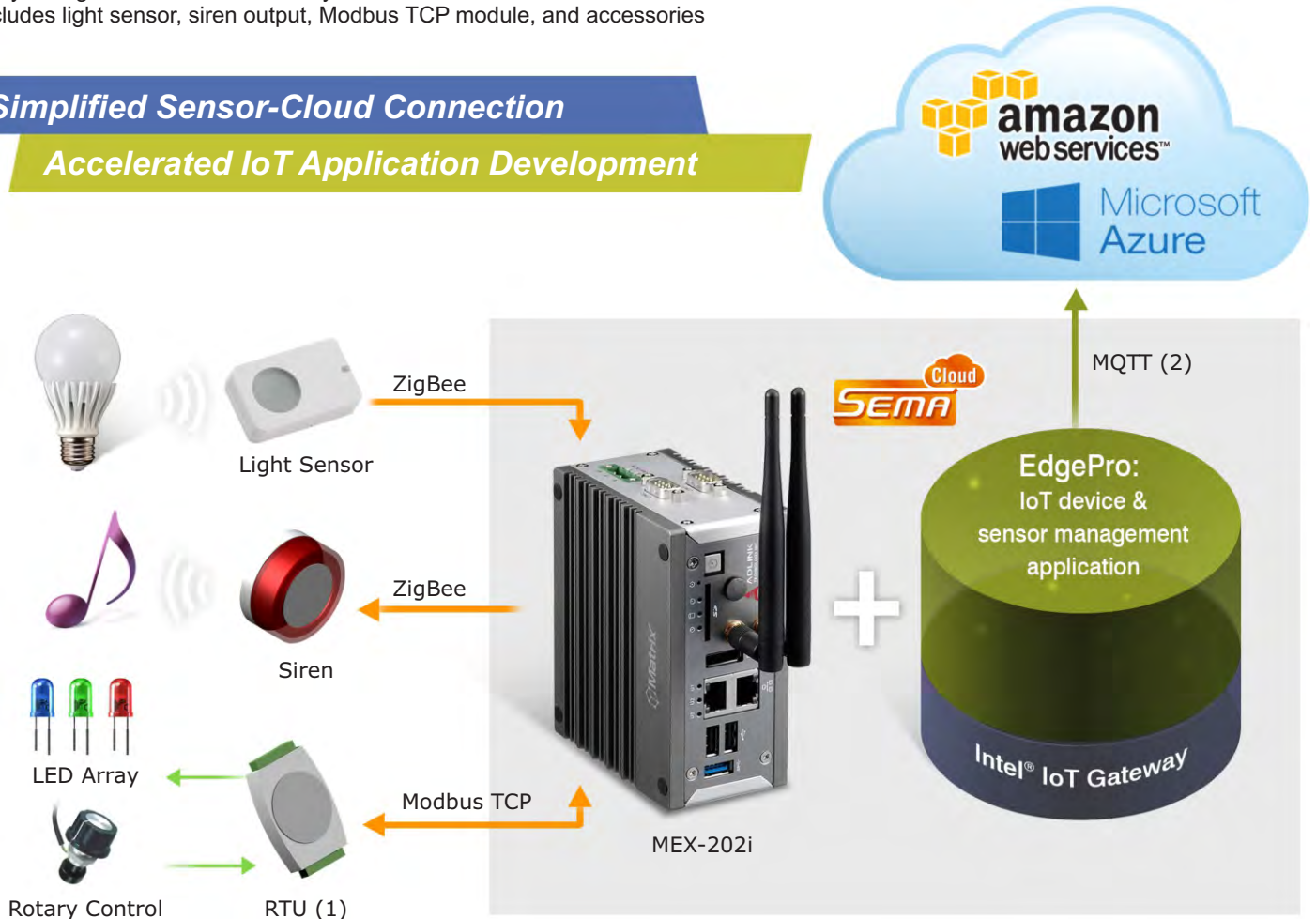# Intelligent IoT Gateway Starter Kit End-to-End Solution from ADLINK

The Starter Kit contains Intelligent IoT Gateway MXE-202i, EdgePro IoT Device and Sensor Management Application based on Intel® IoT Gateway

Features:

- Provides a complete IoT connection solution for accelerated IoT application development
- Equipped with MXE-202i (Box Computer)dual-core Intel® Atom™ SoC processor E3826 IoT Gateway on Wind River® IDP XT 2.0
- Preloaded ADLINK EdgePro IoT device & sensor management application
- Easy configuration with user-friendly administrator interface and dashboards
- Includes light sensor, siren output, Modbus TCP module, and accessories

Simplified Sensor-Cloud Connection

Accelerated IoT Application Development

(1) RTU: Remote Terminal Unit
(2) MQTT is a machine-to-machine (M2M) "Internet of Things" connectivity protocol

The Intelligent IoT Gateway Starter Kit includes:

- MXE-202i with dual-core Intel® Atom™ SoC processor E3826 IoT Gateway on Wind River® IDP XT 2.0 + 8G SD card
- Preloaded ADLINK EdgePro IoT device & sensor management application
- WiFi/BT Kit (pre-installed)
- ZigBee / 802.15.4 Module USB Adapter
- Modbus RTU module
- ZigBee wireless light sensor
- ZigBee wireless siren
- Rotary control
- LED array
- Ethernet cable
- 40W AC/DC adapter

More:

- Press Release Click Here
- Technical overview Click Here
- Datasheet Click Here

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64% of U.S. Car Owners Want Connected Activity Built Into Their Next Car

Parks Associates Analysts Announce Top Five Connected Car Trends for 2016 Before CES

DALLAS, TX--(Marketwired - Dec 29, 2015) - Over 40 million U.S. vehicles will be connected to the Internet by the end of 2015, and that number will steadily increase through 2016, according to Parks Associates. New research from the firm reports 64% of car owners in U.S. broadband households would like built-in support for at least one connected activity in their next car. That demand is in contrast to current connected activities in the car, the majority of which are done on a smartphone without any connection to the car.

"Automakers are keying into this demand by embedding connectivity in new vehicle models. Many are also supporting Apple CarPlay and Android Auto -- they do not want these mobile-centric solutions to be differentiators for their competitors," said Jennifer Kent, Director, Research Quality & Product Development, Parks Associates. "Many of these solutions will be on display at CES® 2016 in January and Autonomous Car Detroit in March. With the exception of smartphones, no other device touches so many points in a person's life as the car, from home to work to family and community interaction. Car-generated data will increasingly enrich connected solutions outside the car, while also offering an interaction touch point for those external solutions from within the car."

Parks Associates will address developments and technologies affecting the connected consumer at the firm's CONNECTIONS™ Summit: IoT, Entertainment, and the Connected Consumer at CES from January 6-7, in the Venetian Hotel, Level 4, Room Marcello 4501. Ahead of this event, the firm released its top-five trends for connected cars for 2016:

1. Automakers embrace Apple and Android.
2. Connected cars lead the way in crossing boundaries between different Internet of Things (IoT) ecosystems.
3. Connected technologies enable a shift in vehicle ownership models to one defined more by experience.
4. Autonomous driving features will come to market system by system, such as emergency braking services.
5. Privacy concerns will remain in the headlines until connectivity becomes indispensable to driving.

Parks Associates research shows 44% of car owners in U.S. broadband households have some kind of advanced connected car feature and 61% of car owners prefer to bundle vehicle data consumption with smartphone data consumption. Nearly 25% of vehicle drivers in U.S. broadband households find the ability for a connected car to automatically set a home "away mode" very appealing, and more than 50% of U.S. broadband households express privacy and safety concerns regarding connected cars.

"The increase in connected vehicles creates a larger addressable market for hackers, so privacy and security breaches will also increase. Consumers and regulators will continue to focus on the issue until connected car features are ubiquitous and necessary to the driving experience," Kent said. "Only then will the consumer evaluation of the security/value trade-off relent, as it has with online banking, e-commerce, and others."

Connected Cars and the Smart Home: Crossover Opportunities assesses smart home-connected car crossover opportunities, profiles early initiatives, and highlights the significant complexities inherent in bridging the ecosystems. The report includes a five-year forecast of connected cars in the U.S. market.
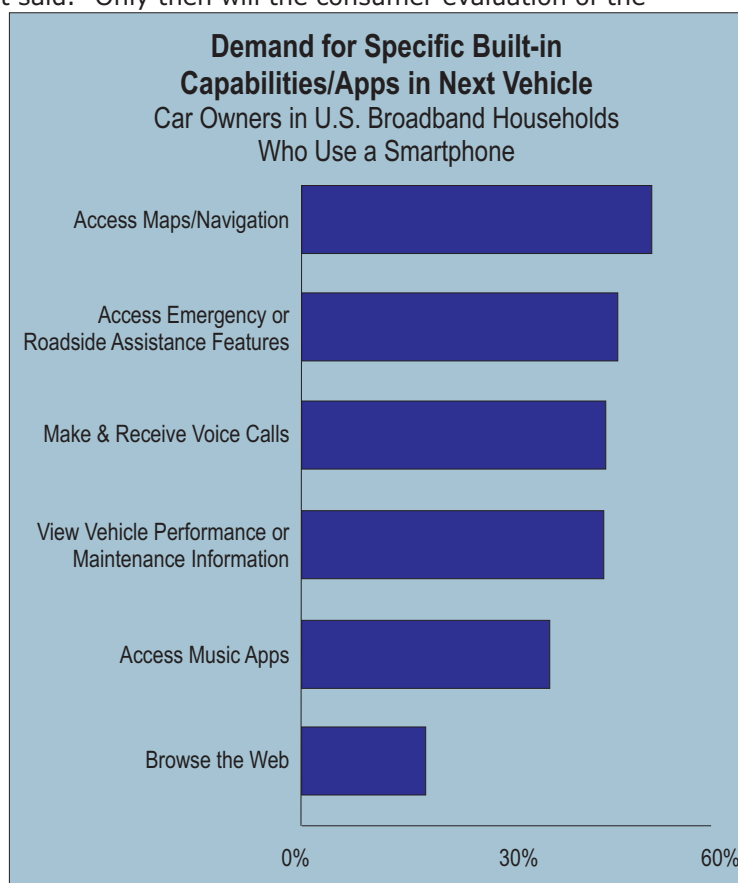
For information on Parks Associates' research or events, visit www.parksassociates.com, or contact sales@parksassociates.com, 972-490-1113. To schedule an interview with an analyst or to request specific research data, contact Holly Sprague at hsprague@gmail.com.

About Parks Associates
Parks Associates is an internationally recognized market research and consulting company specializing in emerging consumer technology products and services.

The company's expertise includes the IoT, digital media and platforms, entertainment and gaming, home networks, Internet and television services, digital health, mobile applications and services, support services, consumer apps, advanced advertising, consumer electronics, energy management, and home control systems and security.
http://www.parksassociates.com

Demand for Specific Built-in Capabilities/Apps in Next Vehicle
Car Owners in U.S. Broadband Households Who Use a Smartphone

Bluemix the latest Cloud offering from IBM

Bluemix is the latest cloud offering from IBM. It enables organizations and developers to quickly and easily create, deploy, and manage applications on the cloud. Bluemix is an implementation of IBM's Open Cloud Architecture based on Cloud Foundry, an open source Platform as a Service (PaaS). Bluemix delivers enterprise-level services that can easily integrate with your cloud applications without you needing to know how to install or configure them.

IBM Bluemix fundamentals

Introductory videos and tutorials for Java, Node.js, and PHP developers

1. Discover IBM Bluemix
Take a tour of Bluemix, hear what developers love most about it, and experience it yourself in a free trial account.

2. Deploy your first app on Bluemix
Walk through the steps to deploy your first Java, Node.js, or PHP app, using a sample business app as a starting point.

3. Set up team collaboration and automated deployment
Set up a pipeline to build, test, and automatically deploy your app whenever you or a teammate pushes code to the repository.

4. Add a database service and other cloud services to your app
Get an overview of the many Bluemix services to power your app, and add a popular database service to your app.

More: https://developer.ibm.com/bluemix/

DDS: the Right Middleware for the Industrial Internet of Things?

Just as the Industrial Revolution was about harnessing engines and electricity to enable new classes of physical infrastructure, the IIoT is about harnessing the information flow that will enable new classes of physical machines. And the most profound is "big-iron infrastructure." Smart freeways, distributed power generation, connected hospitals, and even autonomous flying cars with intelligent air traffic control are the future. This infrastructural transformation will dominate the next 100 years of technical evolution. Technologies don't get more profound than that.

Recently, Cisco, IBM, GE, Intel and AT&T, created an organization called the Industrial Internet Consortium (IIC). The IIC is managed by the Object Management Group (OMG), the world's largest systems software standards organization. The OMG is the same standards group that specifies system languages such as UML. Less than 4 months after its founding by the big five, the IIC has over 80 members. The RTI CEO was elected to a seat on the Steering Committee.

Placing the IIC inside the OMG is a brilliant move. The IIoT needs a get-your-hands-dirty, drive-a-specificationto-closing, concrete-standards driver. It needs an organization with real systems perspective. The OMG is exactly that.

The OMG also manages the Data Distribution Service (DDS) middleware protocol standard. DDS middleware is specifically designed to handle Industrial Internet applications. DDS is playing a key role in the Industrial Internet of Things.

How does DDS Enable IIoT Communication?

There is no way to build large distributed systems without connectivity. Enterprise and human-centric communications are too slow or too sparse to put together large networks of devices that need ultrafast connections.
These new types of intelligent machines need a new technology. That technology has to find the right data and then get that data where it needs to go on time. It has to be reliable, flexible, fast and secure. Perhaps not as obviously, it also must work across many types of industries. Only then can it enable the efficiencies of common machine-based and cloud-based infrastructure for the IIoT.

DDS is not like other middleware. It directly addresses real-time systems. It features extensive fine control of real-time QoS parameters, including reliability, bandwidth control, delivery deadlines, liveliness status, resource limits and security. It explicitly manages the communications data model, or types used to communicate between endpoints. It is thus a data-centric technology. Like a database, which provides data-centric storage, DDS understands the contents of the information it manages. DDS is all about the data. In fact, RTI calls DDS a "DataBus."

At its core, DDS implements a connectionless data model with the ability to publish and subscribe to data with the desired quality of service (QoS). Participants are either publishers of data, or subscribers to data.

A DDS-based system has no hard-coded interactions between applications. The DataBus automatically discovers and connects publishing and subscribing applications. No configuration changes are required to add a new smart machine to the network. The DataBus matches and enforces QoS.

DDS overcomes problems associated with point-to-point system integration, such as lack of scalability, interoperability and the ability to evolve the architecture. It enables plug-and-play simplicity, scalability and exceptionally high performance.

Perhaps the best way to understand DDS is to examine the systems that use it. Applications span the healthcare, energy, defense, transportation, industrial automation and communications industries.

Download the 12 Pages WHITEPAPER from RTI
http://www.rti.com/whitepapers/Right_Middleware_for_IIoT.pdf
It includes application examples in: Energy - Healthcare -Transportation
and: Lessons Learned from DDS Applications - Sensor-to-Cloud Integration

About Real-Time Innovations
RTI is the world leader in fast, scalable communications software that addresses the challenges of building and integrating real-time operational systems. RTI Connext solutions meet the needs of enterprise-wide integration—from the operational edge to the enterprise data center. The RTI standards-based software infrastructure improves the efficiency of operational systems while facilitating better decisions, actions and outcomes for the business enterprise.
For over ten years, RTI has delivered industry-leading products and solutions for customers in markets ranging from aerospace and defense, process automation, financial services, energy, automotive, health sciences and transportation management.
Founded in 1991, RTI is privately held and headquartered in Sunnyvale, California. https://www.rti.com/