

IIC Liaison Report to 802.24

July 2016

Wael William Diab

Acknowledgments

- Stephen Mellor
- Eric Harper
- Will Sobel

Agenda

Update on Liaison Relationship

IIC Overview

Notable Updates Since Last Meeting

Final Thoughts

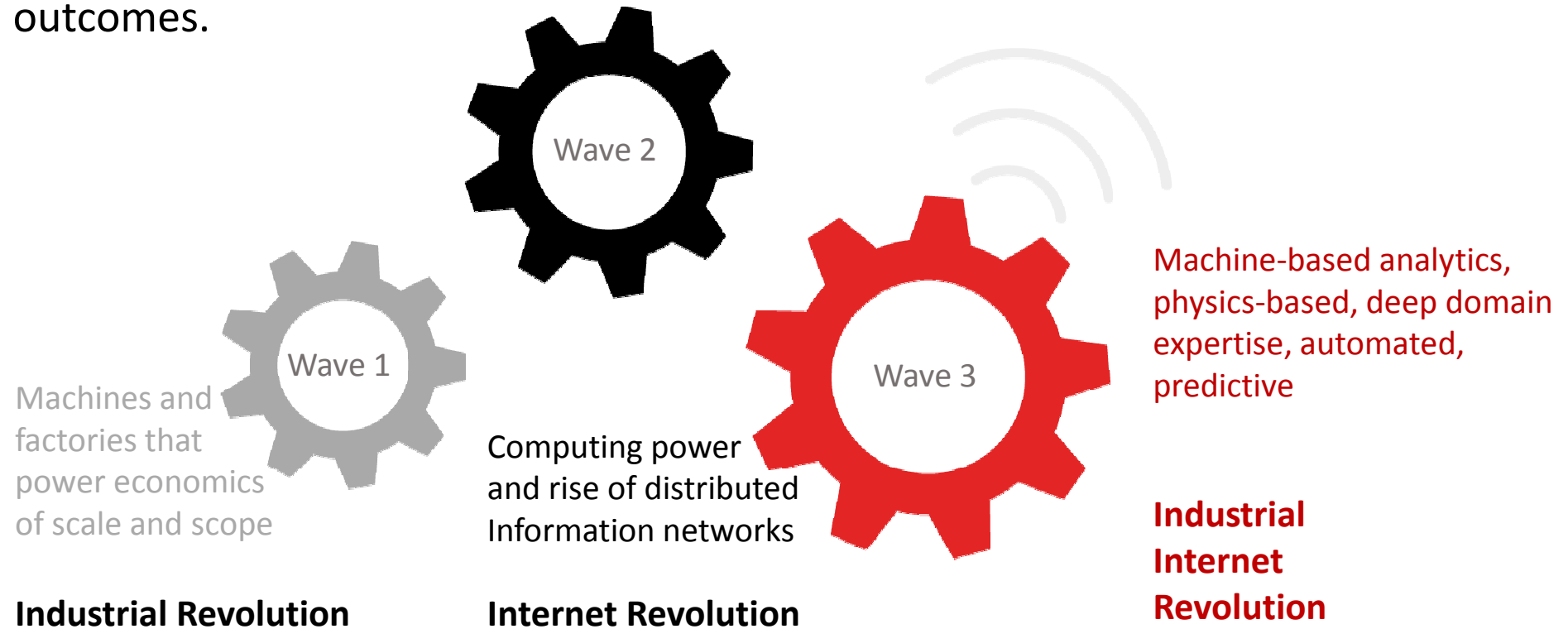
IIC:802.24 Liaison Relationship Approved!

- Approved
- First opportunity to see an overview

IIC Overview

The Industrial Internet

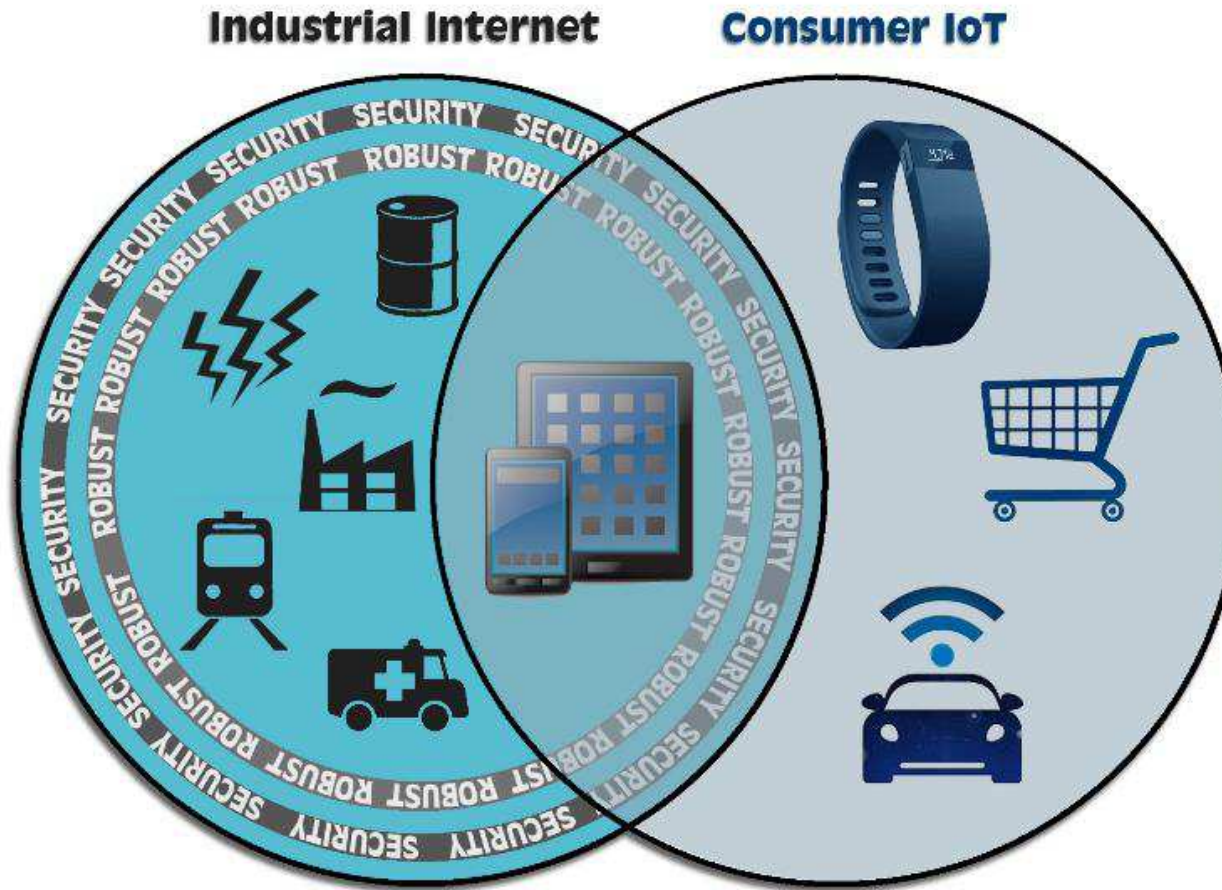
It's an internet of things, machines, computers and people, enabling intelligent industrial operations using advanced data analytics for transformational business outcomes.



Industrial vs. Consumer Internet of Things

Similar Technology Drivers

- Small inexpensive sensors & actuators
- Low cost processing power and data storage
- Smart devices
- Connectivity



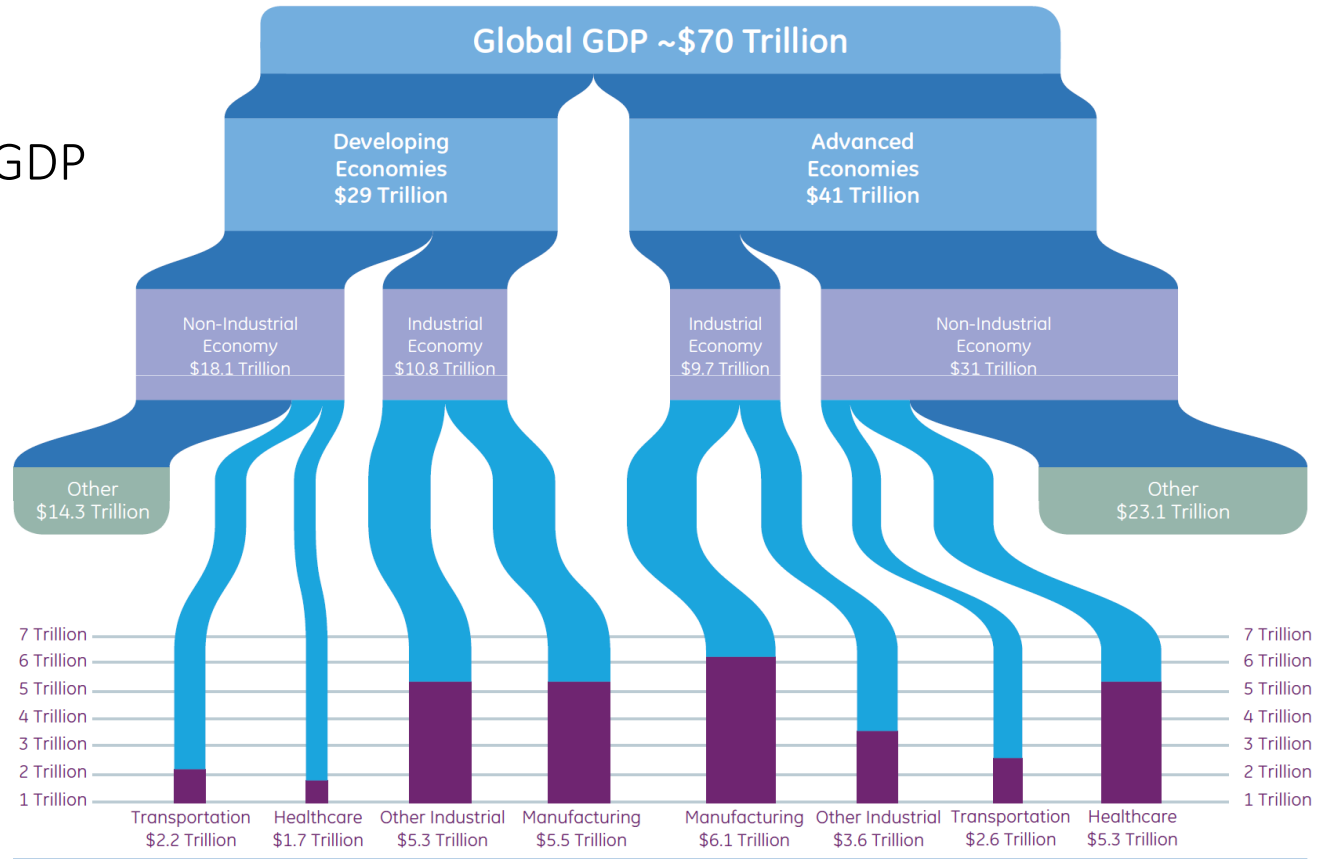
Different Business Drivers

- **Consumer**
 - Adequate Quality
 - Modest Security
 - Cost Sensitive
- **Industry**
 - QoS
 - Safety
 - Robust Security
 - ROI Sensitive
 - Efficiency
 - New Products
 - New Markets



Impact of Industrial Internet

46% of World GDP



Industrial Internet opportunity (\$32.3 Trillion) 46% share of global economy today



Savings and growth opportunities across every industry

1% savings from efficient Industrial Internet solutions could save billions in operational costs

\$30B

fuel cost saving
in aviation
industry

\$66B

fuel cost saving
in gas powered
fleets

\$63B

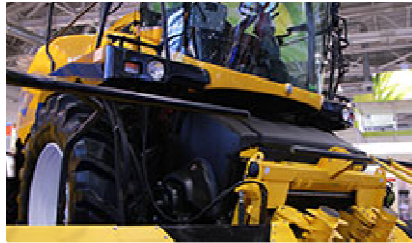
productivity
improvement in
healthcare

\$90B

reduction in
Cap X in oil & gas
exploration and
development

\$27B

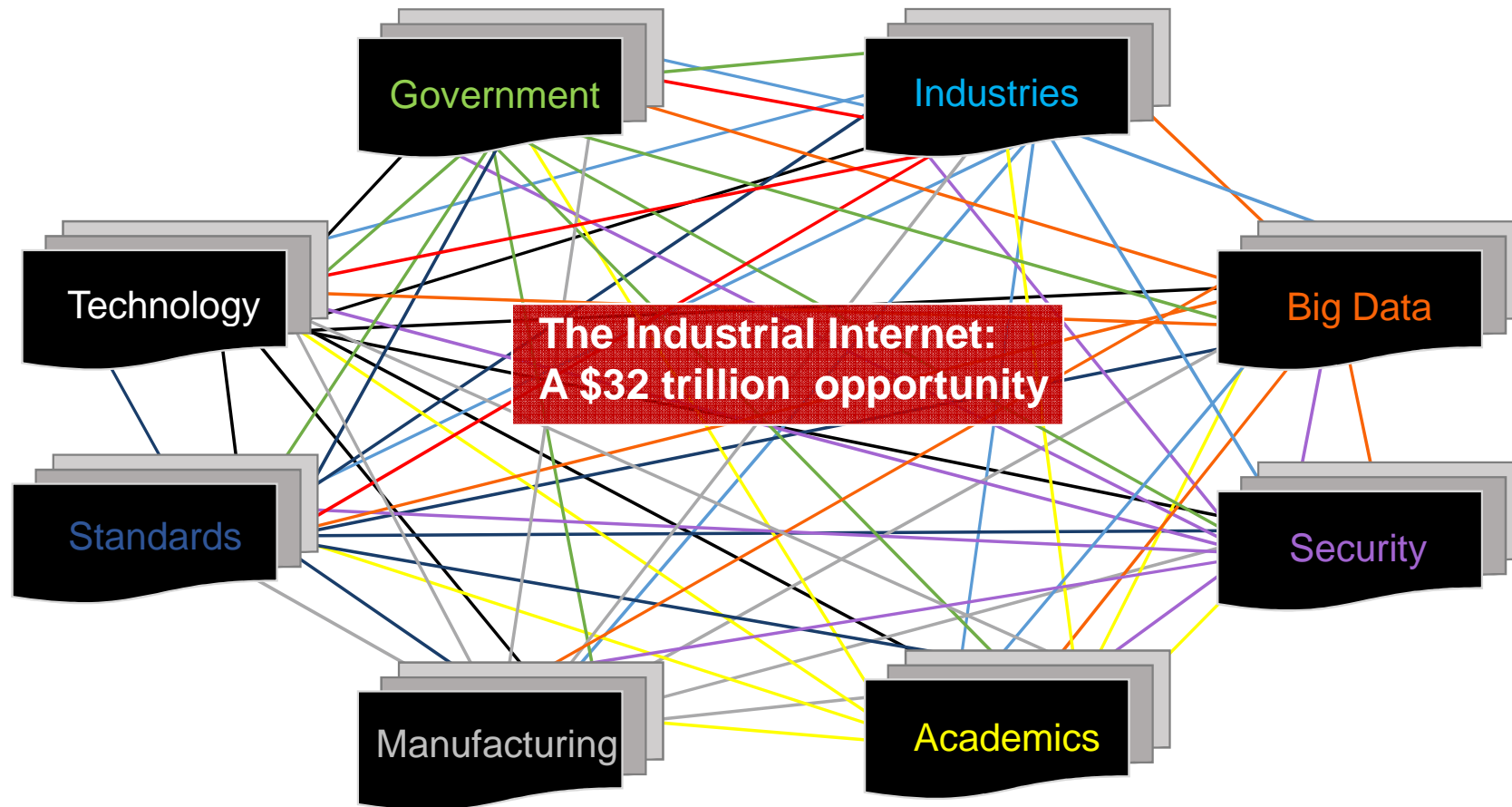
productivity
improvement in
rail industry



** Projected savings are based on 1% efficiencies/savings*



Roadblocks to growth





The Industrial Internet Consortium

The IIC brings together the organizations necessary to accelerate growth of the Industrial Internet by identifying, assembling and promoting best practices and technologies.

“To accelerate growth of the Industrial Internet by coordinating ecosystem initiatives to connect and integrate objects with people, processes and data using common architectures, interoperability and open standards that lead to transformational business outcomes.”

IIC Members (245 today)

IIC Founder Companies



Business Strategy and Solution Lifecycle



Business Strategy



Solution Lifecycle



Project Toolkit

IIRA

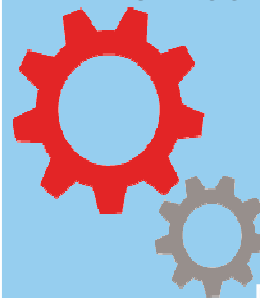
Security Framework



Requirements for Standards



Topics and Themes



Business Model, Project Mgmt, Practices



Project Specifications & Reports



Architecture & Design

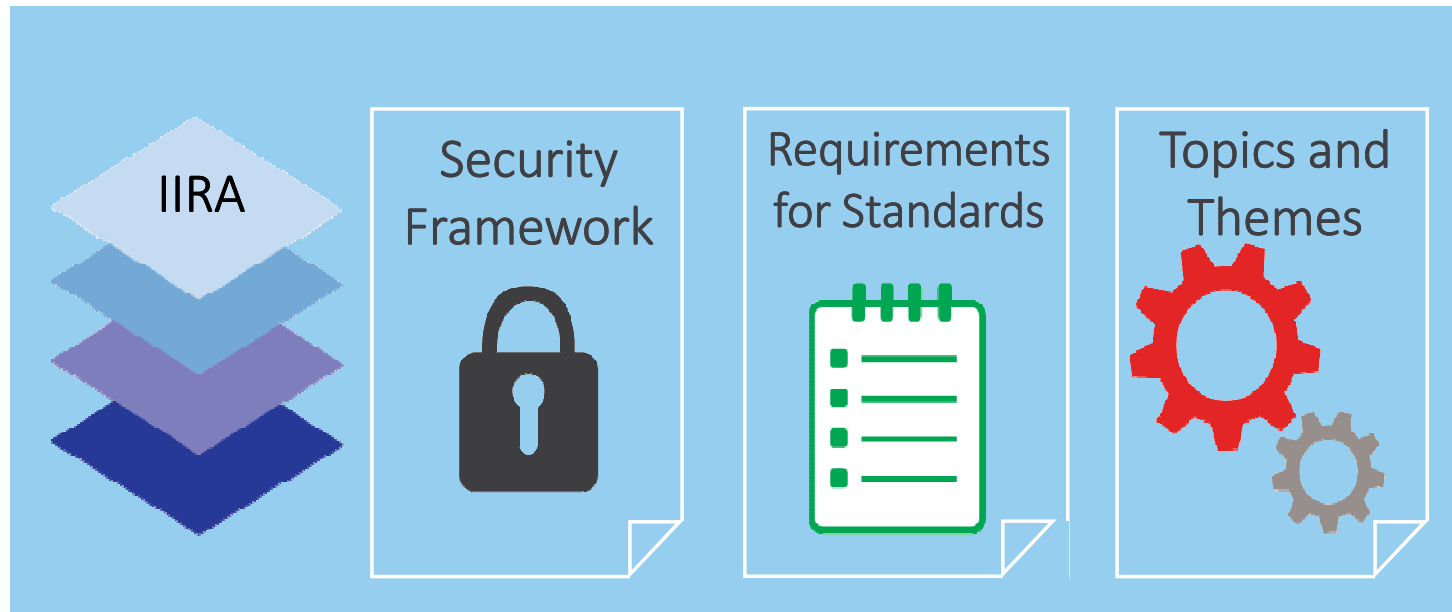


Testbeds & Projects

IIC

General IIoT Ecosystem







Business Strategy and Solution Lifecycle

Business Strategy and Solution Lifecycle



Business Strategy



Solution Lifecycle



Project Toolkit

Testbeds and Projects

- A testbed is a *controlled experimentation platform*, ~conforming to an IIC reference architecture, where solutions can be deployed and tested in an environment that *resembles real-world conditions*.
- Testbeds explore *untested technologies* or existing technologies working together in an *untested manner*.
- Testbeds can generate requirements and priorities for *standards organizations*.
- Testbeds' ultimate purpose is to culminate in innovative *products, services and methodologies*.

Business Model,
Project Mgmt,
Practices



Project
Specifications
& Reports



Architecture
& Design



Testbeds
& Projects

Business Strategy and Solution Lifecycle



Business Strategy



Solution Lifecycle



Project Toolkit

IIRA

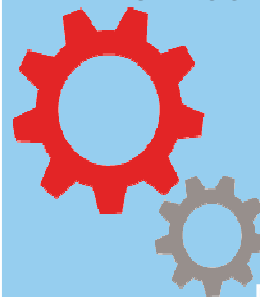
Security Framework



Requirements for Standards



Topics and Themes



Business Model, Project Mgmt, Practices



Project Specifications & Reports



Architecture & Design



Testbeds & Projects

IIC

General IIoT Ecosystem



Notable Updates Since Last Meeting

IIC Meeting Schedule

- IIC Meetings since the last report
 - Q1 2016 Meeting
 - Reston, Virginia, USA
 - March 14th – 17th
 - Q2 2016 Meeting
 - Tokyo, Japan
 - June 6th – 8th
- Upcoming IIC Meetings and Notable Events
 - Q3 2016 Meeting
 - Heidelberg, Germany
 - September 19th – 22nd
 - Q4 2016 Meeting
 - Coronado, California, USA
 - December 5th – 8th
 - IoT Solutions World Congress
 - Barcelona, Spain
 - October 25th – 27th

Select Topics of Potential Interest: IIC Industrial Analytics Group

- Part of the IIC Technologies Portfolio

- Charter

- Role

The Industrial Analytics Task Group is part of the Technology Working Group. This Task Group will comprehensively define the properties of realizable analytical techniques and methods for deriving meaning from, and adding value to, industrial systems. It will work closely with the various IIC groups to ensure their data analytic concerns are addressed. Its deliverables consist of a technical report detailing capabilities, requirements, existing and new open standards, and technologies, presented in an Industrial Internet Analytics Framework.

- Topics

The IIC Industrial Analytics Task Group's scope will include:

- Influence / drive requirements in other IIC teams and working groups
 - Catalog various technology choices for analytics
 - Analytics on both data in motion and at rest
 - Hierarchical and distributed considerations of industrial analytics
 - Data integrity interactions for analytics
 - Analytics for safety and security of operation

- Chairs

- Diab, Wael William (Huawei)
 - Harper, Eric (ABB)
 - Sobel, Will (System Insights)

Select Topics of Potential Interest: IIC Industrial Analytics Group

- Initial deliverable is Industrial Internet Analytics Framework
- Group has decided to parcel the initial work into two releases. This would allow
 - for a quick-time-to-market on the initial release
 - allow the group to brainstorm topics for the second release
 - deep dive technical areas in the second release
 - consider cross-cutting items in the second release
- Group's target schedule is
 - Q3 2016 for first release
 - Q2 2017 for second release
- Outline of framework parallel IIRA
- Scope of 1st release
 - The drivers of analytics in an industrial system
 - The requirements of industrial analytics
 - Architectural considerations to support industrial analytics
- Second release under brainstorming. Some topics to include
 - Deep dive into technical architecture requirements
 - Cross-cutting issues such as the use of empirical data from
 - Leveraging use-cases from external organizations
- The IIAF like many of the other fundamental frameworks IIC is working on, will work with it IIRA (Industrial Analytics Reference Framework)

Final Thoughts

Final Thoughts & Feedback on Report Format

- As this is the first liaison “report”, would appreciate feedback
 - Content
 - What you liked...
 - ...and did not like
 - Frequency
 - Report out at every WG meeting if there is something new
 - Detail
 - Less, more or about the same?
- Assuming the format is acceptable, in addition to any specific items, I will pick some topics of interest (e.g. Analytics portion this report)
- As your liaison, please do not hesitate to reach out for information and I will be more than happy to assist