

# TEST BEDS and LARGE SCALE PILOT DEPLOYMENTS

## AREAS OF INTEREST

The choice of test beds and large scale pilots are open. There is considerable interest in autonomous transportation, healthcare for the community, smart cities, manufacturing (robotic self-organizing self-assembly) in addition to precision farming, nanotech systems, data analytics and cybersecurity.

## TEST BEDS IN THE CONTEXT OF THE EU – but the intent is applicable worldwide

The [Industrial Internet Consortium](#) is keen to pursue projects in the EU including the H2020 framework as well as engagements with national governments (worldwide). We are seeking guidance and introduction to groups in the EU which are forming coalitions in order to submit H2020 proposals for 2016-2017. We wish to explore how IIC (and its members) may become coalition partners with these groups which are preparing to submit proposals to the EU H2020 for large scale deployments in 2016-2017 (<http://bit.ly/EU-ICT-2016-IoT>). Due to the global scale of the IIC, we are keen to pursue H2020 projects in EU by building key EU coalitions with EU members of the IIC and non-members, as well, if necessary.

## CONFLUENCE OF IDEAS for INTEROPERABILITY and IMPLEMENTATION

IIC is interested in global convergence (see <http://bit.ly/IIRA-IIC>) to promote interoperability between standards and cooperation with other global initiatives ([AIOTI](#) and [Industrie 4.0](#)). IIC is not seeking to directly receive any money/funding. The goal is to find creative partners to pursue innovative and transformative collaborative projects (as a part of one or more EU coalitions who are preparing projects for 2016-2017 funding from H2020 or EU national governments). IIC wishes to be a part of PPP (public-private partnerships) for large scale deployments (<http://bit.ly/EU-ICT-2016-IoT> is the IoT section from <http://bit.ly/EU-ICT-2016-2017-DRAFT>) which may be funded by entities within the EU and will be executed in the EU with EU industry and EU academics for economic development in the EU nations. The same is applicable for IIC's intent in other regions (China, Japan, India, APAC, EMEA, South America).

Page 1 • Expression of Interest and Intent • This document attempts to summarize the inclination of the Industrial Internet Consortium ([www.iiconsortium.org](http://www.iiconsortium.org)) to pursue innovative test beds which will lead to or be a part of large scale deployments of pilots embedded in the real world. This is only one of the test bed related streams within the IIC. There are other types of test bed activities and not all test beds may lead to large scale pilots or deployments. The expression of intent in this document is applicable to any or all geographies of the world since IIC is a global organization. IIC is keen to be part of coalitions with national governments and/or regional governments as well as local and global industry and academia. The modus operandi discussed here may be relevant to countries in the EU but the pursuit of test beds is applicable worldwide. Coalitions necessary for creating test beds and implementing large scale deployments must be initiated by industry, academics or other organizations who may be members of the Industrial Internet Consortium, in any country of the world. Funding rules and eligibility are decided by the funding organizations and not by IIC. For more information write to Mr Michael Lee, Director of Test Beds for IIC ([lee@iiconsortium.org](mailto:lee@iiconsortium.org)) or Dr Shoumen Palit Austin Datta, Senior Vice President, IIC ([datta@iiconsortium.org](mailto:datta@iiconsortium.org)). All errors in the document related to facts or interpretation of facts is the sole responsibility of the author (SD) and due only to the author. It is not attributable to the Industrial Internet Consortium or its management or its members.

## COALITION BUILDING

In order to be a part of the EU coalition for potential future H2020 funding, we are in conversation with DG CONNECT and groups who may pursue H2020 proposals (CEA-LETI, Grenoble; UNINOVA, Lisbon; VTT, Helsinki). This is perhaps the most important step in the process for submission of proposals for H2020.

## IIC LARGE SCALE TEST BED EFFORTS IN THE US

We (IIC) are pursuing similar large scale deployments in the US with IIC members (and non-members, if and when necessary to complete the value chain of the coalition to deliver the solution) made up of industry, academics and organizations. Recently we submitted a grant application (<http://bit.ly/DOT-DOT-DOT>) to the US Department of Transportation for ~US\$20 million. We shall find out soon if our proposal was successful. We are pursuing other (<http://bit.ly/US-FUNDING-EU-H2020>) US funding opportunities. For healthcare (<http://bit.ly/HIP-HIP-HIP>) we are seeking a spectrum of convergence including the RF advances from [Professor Dina Katabi](#) with that of [www.mdnpn.org](http://www.mdnpn.org) and potential implementation with [www.pih.org](http://www.pih.org) and [www.ariadnelabs.org](http://www.ariadnelabs.org) as partners.

## OTHER

We are also exploring opportunities in JP, CN and IN. IIC in the US is not applying for or receiving funds from any country. We are focused on building coalitions or being part of teams who are capable of execution and implementation of innovative tools and technologies in the broad spectrum of the IoT space which offers creative solutions for the industry, consumer services and various business verticals in quest of new lines of profitability as well as stimulating global economic growth by accelerating the pervasive diffusion of the industrial internet of systems (IIS).

## IDEAL MODUS OPERANDI

If you have an idea or you wish to pursue an idea that may be transformative, please contact us, irrespective of your geographic location. IIC will try to find partners from industry, academia and governments with the aim of creating a coalition for test bed creation and/or large scale deployment. Jointly we shall explore sources of funding to transform the collective vision into tangible reality.

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## RATIONALE

A part of the activities within the IIC is focused on test beds which will lead to large scale local and global collaborations for real-world deployment. One aim is to try to forge PPPs in order to deploy creative, innovative and pragmatic technologies which are naturally diverse, enormously difficult and almost impossible to converge. This audacious approach is based on the premise that implementation of quantum change may be quintessential for disruption.

We must be bold enough to adequately disrupt the status quo to enable the diffusion of ubiquitous connectivity and sufficient interoperability between platforms to generate ambient intelligence. The latter is the Holy Grail in the IoT view of the internet as a systems tool to improve lives and deliver business value leading to global economic growth and development.

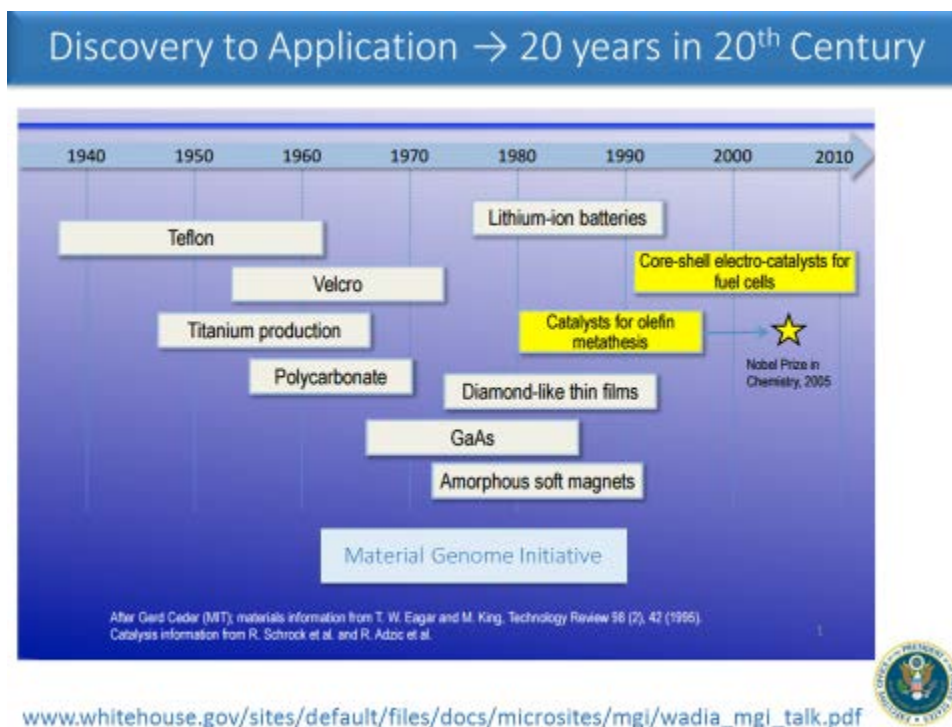
However, we are often constrained by certain agencies which seek business value propositions BEFORE execution of the funding. In my opinion (personal opinion, not attributable to the IIC) that is detrimental to pursuit of grand ideas and inhibits innovation. The deployment of innovative tools and technologies often acts as a trigger to fuel new business models or new lines of growth which may be difficult to perceive before the deployment of test beds leading to large scale pilots in the real world. Our (IIC) US\$20 million proposal to the US Department of Transportation is an example of the convergence of grand themes in intelligent transportation that we have converged. If deployed (if awarded) it will create future business opportunities which may be only limited by our imagination. This proposal did not ask for a business model and the funding agency (US DoT) did not mandate the need for an economic value added section. Hence, it allowed room for imagination.

The financial projections of the industrial internet (to the tune of US\$14.4 trillion or US\$19 trillion) may remain a mirage unless we are able to imagine far beyond the shrink wrapped ideas of the past or the present. We cannot see the future if our imagination is out of focus or distorted by artifacts or artificial barriers. New tools for acquisition of data coupled with noise filtration is a fundamental step before we extract the cryptic intelligence from data and turn it into actionable information, exactly when required, avoiding the perishability abyss for analytics. For example, in healthcare, it equates to saving lives in the community or the elderly before the precipitation of congestive heart failure or diabetic glaucoma or glomerular nephritis. These require focus on confluence of science and engineering with medicine and the networked society. A similar approach is necessary if we are to migrate from autonomous vehicles as experiments to autonomous transportation as a part of real-world mix of vehicular traffic integrated in situations with the most problems, highest uncertainty, chaotic complexity and vulnerability to physical security as well as cybersecurity (for example, compliance with NIST cybersecurity [framework](#)).

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Some of these thoughts, albeit imperfect and incomplete, may be found scattered among these URLs:

- Transportation – <http://bit.ly/DOT-DOT-DOT>
- Manufacturing – <http://bit.ly/SOSA-MODULAR-ROBOTICS>
- Smart Cities – <http://bit.ly/IIC-NIST-SIM-GLOBAL-CITIES-JUNE-1>
- Healthcare – <http://bit.ly/HIP-HIP-HIP>
- Security – <http://bit.ly/NIST-Cybersecurity>
- General – <http://bit.ly/US-FUNDING-EU-H2020>
- Other – <http://bit.ly/MIT-IOT>
- Also – <http://bit.ly/MIT-SD>



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