industrial internet
CONSORTIUM

http://bit.ly/OPPORTUNITIES

WIP ● March 25, 2015

www.iiconsortium.org

Test Beds   ● Smart Cities, Transportation, Healthcare, Autonomy, Manufacturing, Others

Co-Hosts   ● Lynne Canavan, Michael Lee, Stephen Mellor

Q&A   ● Shoumen Datta

Doc   ● http://bit.ly/RESTON-PDF

Guide to Work in Progress and Emerging Test Bed Ideas / Funding

Summary of potential funding opportunities – http://bit.ly/OPPORTUNITIES

What we are pursuing – Work in Progress – pages 5-14

What we are thinking – pages 15-20

What are you thinking?

Risk is the cost to create opportunity.
Reward from risk is cryptic in the pursuit of opportunities.

AGENDA ● http://bit.ly/RESTON-PDF

8:45 – 9:30	**Smart Cities** (Shoumen Datta/IIC, Jeff Fedders/Intel, Narayanan Ramanathan, TechMahindra Smart Cities offer the opportunity to improve the quality of life and economic competitiveness of our cities and are an area of interest shared by many IIC members. This session will provide an update about potential projects and opportunities in this area.

IIC Coalition for NIST Global Cities includes TechMahindra, BOSCH, Vanderbilt University and Dr Zafer Sahinoglu (Mitsubishi)

9:30 – 10:15	**Approved Testbed: Transportation Grand Challenge: Research Collaboration** (Shoumen Datta/IIC, Stan Schneider/RTI, Dr. Janos Sztipanovits/Vanderbilt University) (Regency A) Enterprise Web, National Instruments, Microsoft, TechMahindra, Galois, MIT, others This branch of the Transportation Grand Challenge is focused on a research collaboration with various academic institutions and municipal agencies to submit proposals for a DoT BAA issued January 30, 2015. This session will report on the work done by the IIC members on this and the proposals submitted.
10:15 – 10:30	**Coffee Break** (Regency Foyer)
10:30 – 12:00	**Healthcare Initiative** (Shoumen Datta/IIC, Michael Lee/IIC, Dr. Julian Goldman/Massachusetts General Hospital/Harvard Medical School, Dr Richard Voyles/OSTP/White House) (Regency A) In liaison with IEEE ICE Alliance and OIC Putting additional effort into testbed opportunities in Healthcare is a 2015 initiative for the Testbed Working Group. This session will brainstorm possibilities in the vast landscape of healthcare to identify potential targets for further consideration.

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● **Vision, Mission and Opportunities**

  https://hbr.org/2014/11/setting-standards-for-the-internet-of-things

● Challenges

☑ Transportation (SDV)

☑ Smart Cities

☑ Healthcare

☑ Data

IoS

In progress   http://bit.ly/OPPORTUNITIES

SMART CITIES ● http://bit.ly/GLOBAL-SIM-CITIES

TRANSPORTATION ● http://bit.ly/DOT-DOT-DOT

HEALTHCARE ● http://bit.ly/HIP-HIP-HIP

Seismic and Infrastructure Monitoring

Buildings

Bridges and Roads

Water/Sewer

Surface trace of San Andreas Fault

Fault Zone

Pilot hole

SAFOD

0   3 KILOMETERS

Sensor Data

Incident Data

Communications Network Data

Infrastructure

Algorithms Modelling & Simulation

Data Fusion and Sense-Making Platform

FEMA

Wireless Carriers
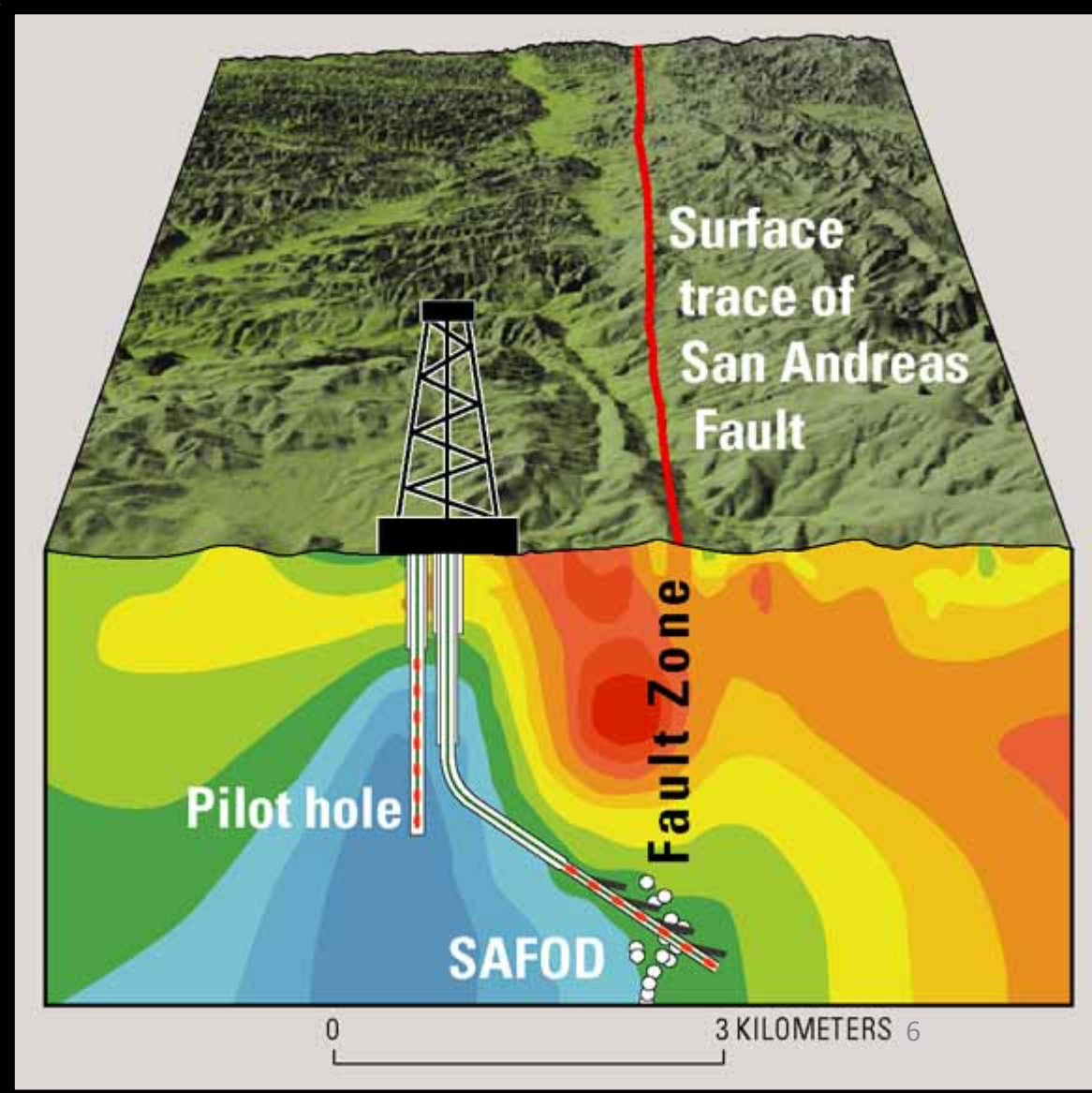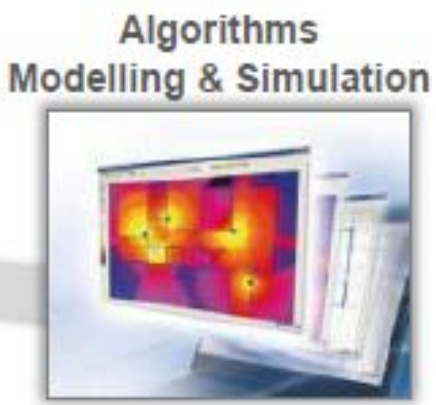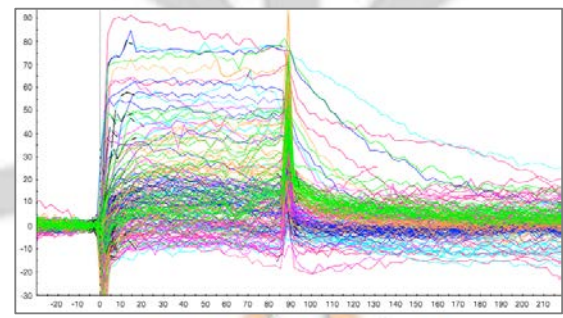
Domain 1

Domain 2

. . .

Domain N

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⚙ SMART CITIES ● http://bit.ly/GLOBAL-SIM-CITIES

The next big thing in infrastructure monitoring

EU Critical Infrastructure Protection DRS-15-2015 ● August 27, 2015 ● Funding €82M
http://bit.ly/H2020-INFRASTRUCTURE

EU Critical Infrastructure Protection DRS-03-2015 ● August 27, 2015 ● Funding €50M
http://bit.ly/H2020-ICT-INFRASTRUCTURE

TRANSPORTATION ● http://bit.ly/DOT-DOT-DOT

ENTERPRISE WEB
GALOIS
MSFT
MIT
NI
RTI
TECHMAHINDRA
VANDERBILT UNIVERSITY

⚙ TRANSPORTATION ● http://bit.ly/DOT-DOT-DOT

www.wired.com/2015/03/delphis-self-driving-car-taking-cross-country-road-trip/

WIRED

An Autonomous Car Is Going Cross-Country for the First Time

ALEX DAVIES   GEAR   03.13.15   6:19 PM

AN AUTONOMOUS CAR IS GOING CROSS-COUNTRY FOR THE FIRST TIME

MARCH 22, 2015

S	**Semi**
A	**Autonomous**
F	**Freight**
T	**Transportation**
I	**Initiative**

HEALTHCARE ● http://bit.ly/HIP-HIP-HIP

Grand Challenge Healthcare

- It is an umbrella term for healthcare test beds IIC may pursue

HIP - abbreviation for Healthcare Integrated Platforms

- Concept for healthcare test beds related to data integration

GCH may include HIP test bed(s) such as ICE as well as other test beds:

- Device and Imaging
- Data and Analytics
- Precision Medicine
- Wearables

Who is eligible to participate ? ● http://bit.ly/HIP-HIP-HIP

Members of the Industrial Internet Consortium (IIC), corporations, government agencies, academics and non-profit organizations are eligible to participate but eligibility criteria may be decided by funding industries / agencies in US, EU, APAC.

Criteria for participation ● http://bit.ly/HIP-HIP-HIP

Expertise and ability to contribute technical components and/or qualified human resources to work as a part of the team to execute specific work tasks related to:

[a] creating tools to extract & integrate data from medical devices and equipment

[b] understanding the quintessential role of security and privacy in medical data

[c] depth of expertise in real-time data distribution service from many sources

[d] familiarity with data as a service (DaaS) and platform as a service (PaaS)

[e] development of software, API generation, testing and evaluation

[f] familiarity with the healthcare industry and prior experience

How to use the MDPnP / ICE test bed?

- Identify the areas/domains of expertise/contribution

- Identify your human resources and attach CV or resume

- Match your expertise with ideas in http://bit.ly/HIP-HIP-HIP

- Please write to Dr Shoumen Datta ● datta@iiconsortium.org

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What we are thinking – Revisiting Transportation Grand Challenge

On March 27, 2015 we submitted the first major proposal for grant funding from the IIC coalition to the US Department of Transportation in the area of Intelligent Transport Systems (ITS) under the US DoT domain of connected vehicles (CVRIA).

This submission is a subset of what we planned in our original attempt to deploy semi-autonomous freight transportation (SAFTI). We did not succeed the first time because the US DoT BAA guidelines excluded autonomous transportation from the scope of funding in the ITS focused deployment.

Hence, we are trying again. This time we are planning to create a business focused coalition and invite US DoT to participate in a pre-competitive collaboration which will advocate standards and interoperabilities necessary to deploy (SID) software defined vehicles (SDV) which includes any/all semi-autonomous vehicles. Would you like to join this coalition and contribute to SID SDV?

Please send your comments and criticisms to Dr Shoumen Datta ● datta@iiconsortium.org

What we are thinking – Transportation – SID SDV SCENARIO

This time the concept of SAFTI may be expanded in scope to form a broad spectrum coalition.

Imagine a semi-autonomous freight transportation scenario where we address risk of autonomy by creating a phased "first mile and last mile" approach. In this modus operandi, a semi-autonomous freight vehicle will be driven by a human operator from an urban location to a local transfer point on a highway. Vehicle engages the "auto pilot" for the highway segment and arrives at the periphery of an urban destination (last mile) where it is navigated by a human operator to its final location.

In another scenario, your autonomous-capable vehicle is at your home. You are in the office. Your pre-teen daughter needs a ride to her ballet class. You ask your daughter to sit in the vehicle. You flip open your laptop, log on to your car app and "drive" the car from your home to the location of the ballet class. Your smart phone alerts you when your daughter is seated in the car after her class. You drive her back to home from the comfort of your office chair or hotel room or airport lounge.

What we are thinking – YES2SDV – Software Defined Vehicles

Tesla Model S: Summer Software Update Will Enable Autonomous Driving

By Evan Ackerman

Share | Email | Print

Posted 23 Mar 2015 | 14:00 GMT

Cars That Think

IEEE Spectrum's blog about the sensors, software, and systems that are making cars smarter, more entertaining, and ultimately, autonomous.

Contact us: p.ross@ieee.org

What we are thinking – Transportation – SID SDV PARTNERS ?

At this time the wish list of potential partners are (as it states) a "wish list" based on competency:

Intel	US Department of Transportation
National Instruments	Massachusetts Institute of Technology
Ottomatika	Carnegie Mellon University
Ford	Instituto de Biomecánica de Valencia
Jaguar-Land-Rover	Loughborough University
Navistar	Arada Systems
TechMahindra	Delphi
Caterpillar	Bosch

What we are thinking – Precision Farming Test Bed Initiative

IoT and IIoT in agriculture is a part of the broad fabric of the Smarter Planet movement which catalyzed the "farm to fork" and "seed to mouth" scenarios. Major farm equipment manufacturers are leading the charge in this domain by introducing sophisticated data communication with farming equipment (eg John Deere). In this new attempt, we may also include NASA SMAP data.

Precision Farming attempts to synthesize the data relevant to users (farmers) in an accessible visualization template which can connect to or may be in addition to on-board data and analytics.

For a preview, please explore "Internet of Systems" under the Smart Cities section – see page 3 (please download the PDF which is at the bottom of the list here http://bit.ly/MIT-IOT)
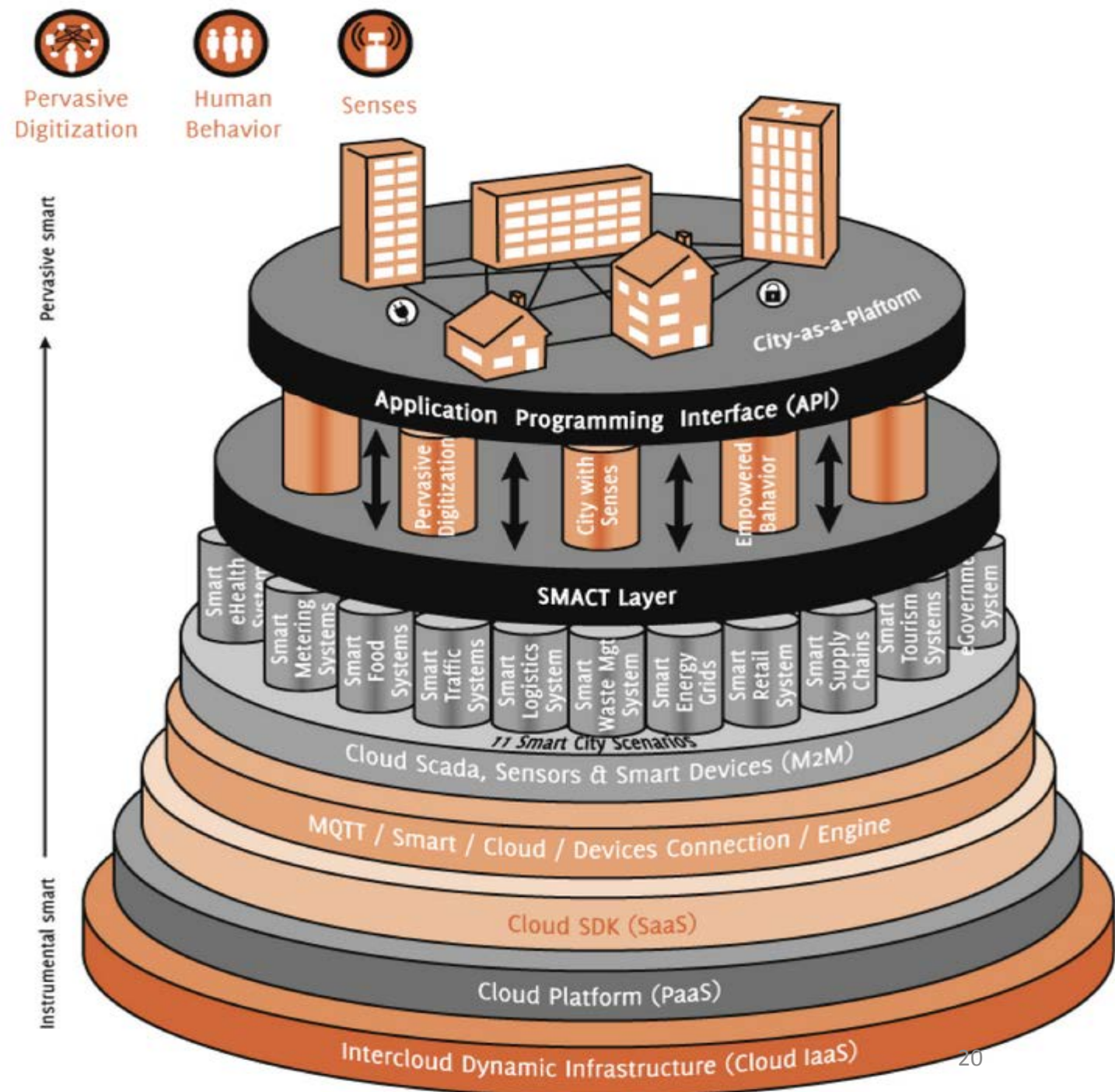
Would you like to join this coalition and contribute to the precision farming test bed initiative?
US Department of Agriculture - NIFA ● September 30, 2015 ● Funding $116M
http://bit.ly/PRECISION-FARMING ● http://smap.jpl.nasa.gov/
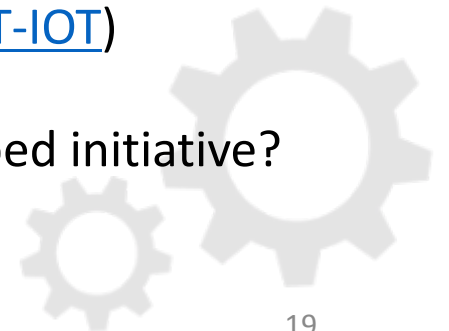
SMART PLATFORMS

So many grand challenges, so little time, even less money

This is the true joy in life, the being used for a purpose you consider a mighty one, the being a force of nature rather than a feverish, selfish clod of ailments and grievances complaining that the world won't devote itself to making you happy.   [GBS]

Please send your questions, comments and criticisms to Dr Shoumen Datta

datta@iiconsortium.org