

CONFERENCE & EXPO
JUNE 20 - 22, 2018
PORTLAND, OREGON

SUPPORTED BY
GLOBAL CITY
TEAMS CHALLENGE
NIST

Galway Smart City – IoT Enabled

(Securing Data Protection, Preserving Privacy)

Smart Traffic System using Air Quality and Noise Monitoring

June 2018, Portland, Oregon, USA

NIST

GLOBAL CITY
TEAMS CHALLENGE

Galway Smart City Cluster

Caitriona Morgan

Community and Enterprise Officer

Galway City Council
City Hall, College Road
Galway City, IRELAND

Dr. Sharon Carroll

Housing Department Officer

Dr. Martin Serrano

Principal Investigator and Data Scientist
Internet of Things and Smart Cities
Insight Centre for Data Analytics - NUIG

Sir. Niall O' Brolchain

eGovernment, former Ireland's senator
and ex-Mayor of Galway City
Insight Centre for Data Analytics - NUIG

CEO, Shivakumar Mathapathi

Dew Mobility
Fremont Silicon Valley, San Jose, CA. USA.

CEO Dr. Antonio Jara

Hop Ubiquitous
Ceuti, Murcia City - SPAIN



INSIGHT Centre for Data Analytics

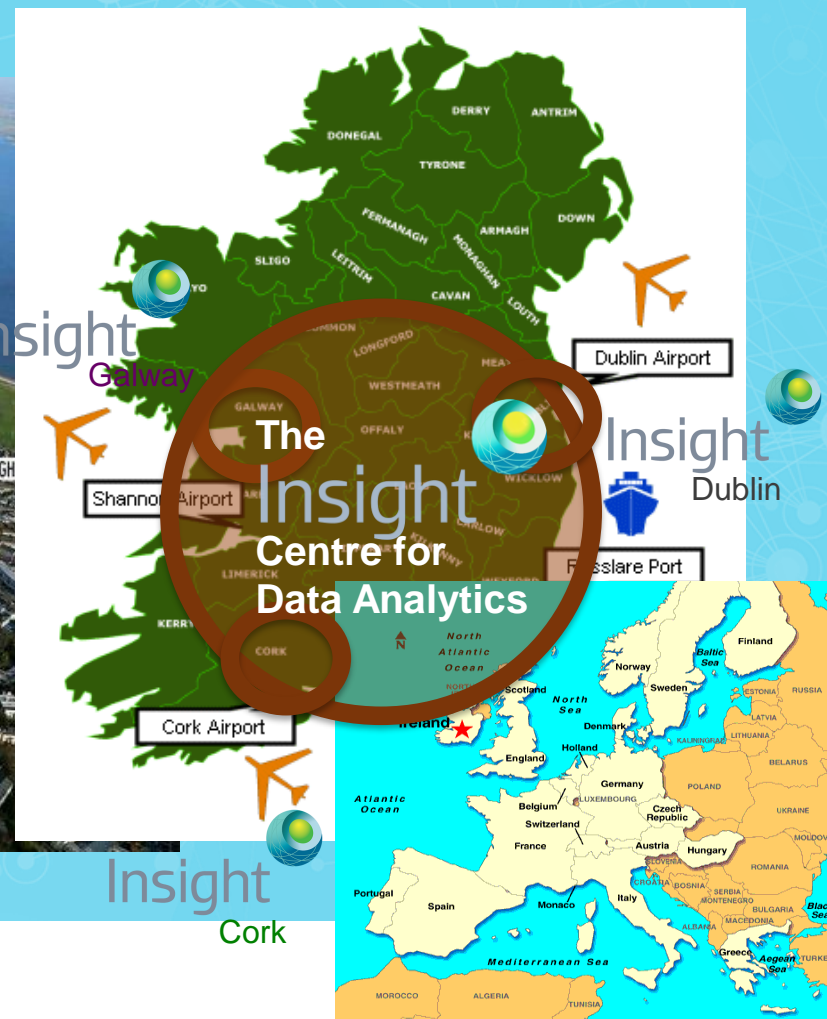


NUI Galway
OÉ Gaillimh

National University of Ireland Galway

Internet of Things and Stream Processing Unit

Insight



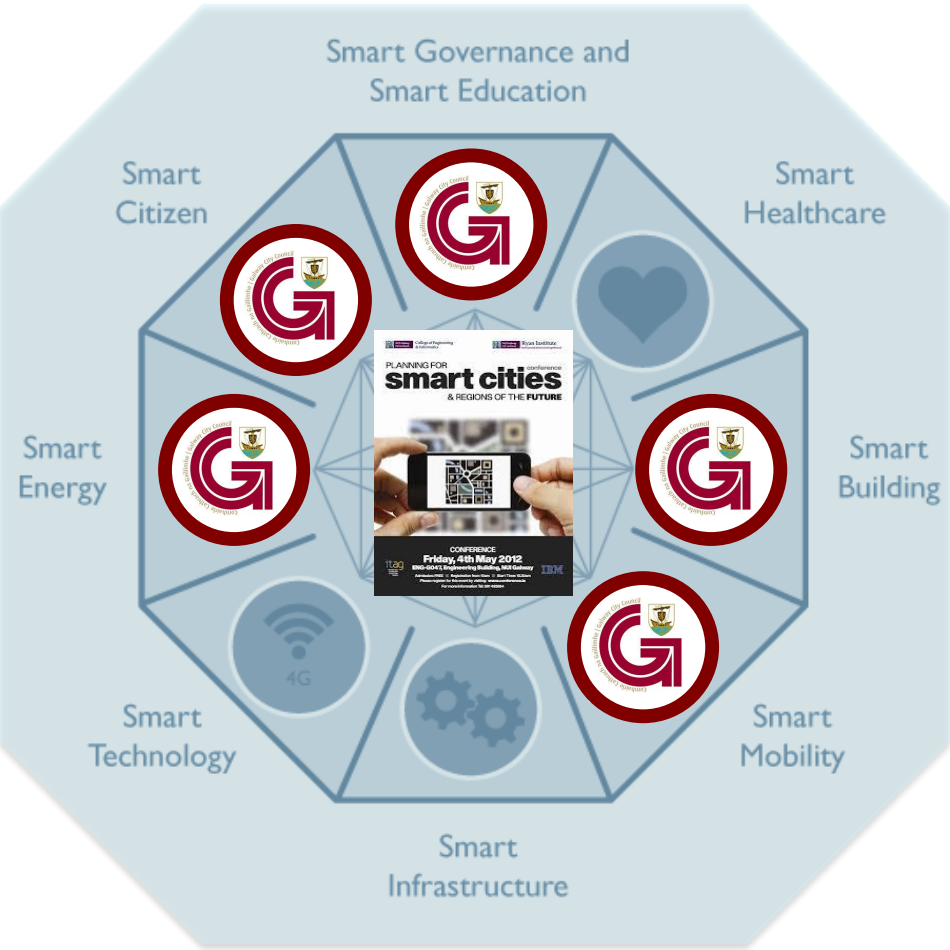
Ireland's EU Structural Funds
Programmes 2007 - 2013
Co-funded by the Irish Government
and the European Union



Insight Centre for Data Analytics

Galway Smart City Cluster - Ireland

SMART CITY CONCEPTS



PRIVACY and Data Protection

Design Principles

- CYBER-SECURITY*

- is the mitigation of threats that expose the integrity of data, systems and infrastructure.
- is the protection of computer systems from the theft and damage to their hardware, software or information, as well as from disruption or misdirection of the services they provide.

*Consensus build on Microsoft, IBM, Oberthur, Gemalto and Apple.

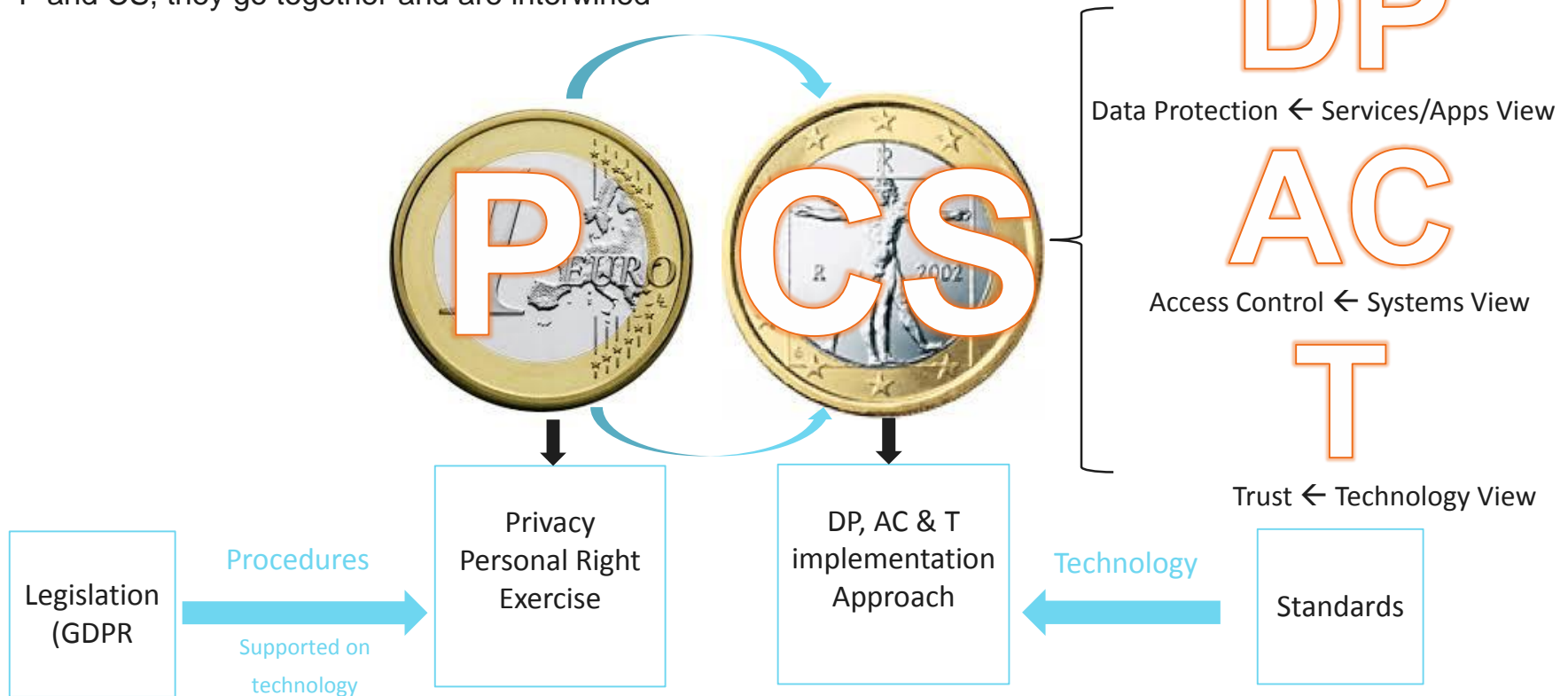
- PRIVACY**

- is the ability of an individual or group to seclude themselves, or information about themselves, and thereby express /share by themselves or consent to other parties selectively.

**Consensus build on ICO (information Commissioner's Office).

Galway Samart City approach to deal with Privacy & Data Protection

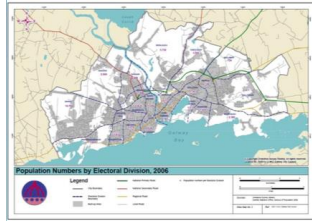
- Privacy (P) and Cyber-Security (CS) are the two faces of the same coin.
- Data Protection (DP) is a data-related activity for Cyber-security compliance.
- Access Control (AC) is a system/platform feature related to Cyber-security.
- Trust (DT) is a technology-related feature for Cyber-security compliance.
- P and CS, they go together and are intertwined



Open Data



eGovernment

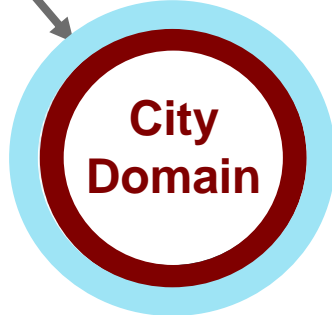


Healthcare

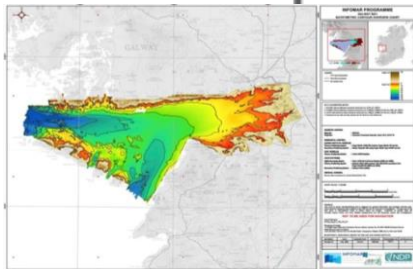
Infrastructure



Education



Energy



Technology



City Data



Mobility



Sensors

Transport

Applications

Devices



The Problem

Smart Traffic System using Air Quality and Noise Monitoring

Healthcare/Environmental Smart Cities

Galway Smart City Traffic Diversion Scheme Programs



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#eGov #OpenData



Galway Smart City Development Plan

The City of Innovation

Securing Data Protection, Preserving Privacy

Pioneering eGovernment and Open Data



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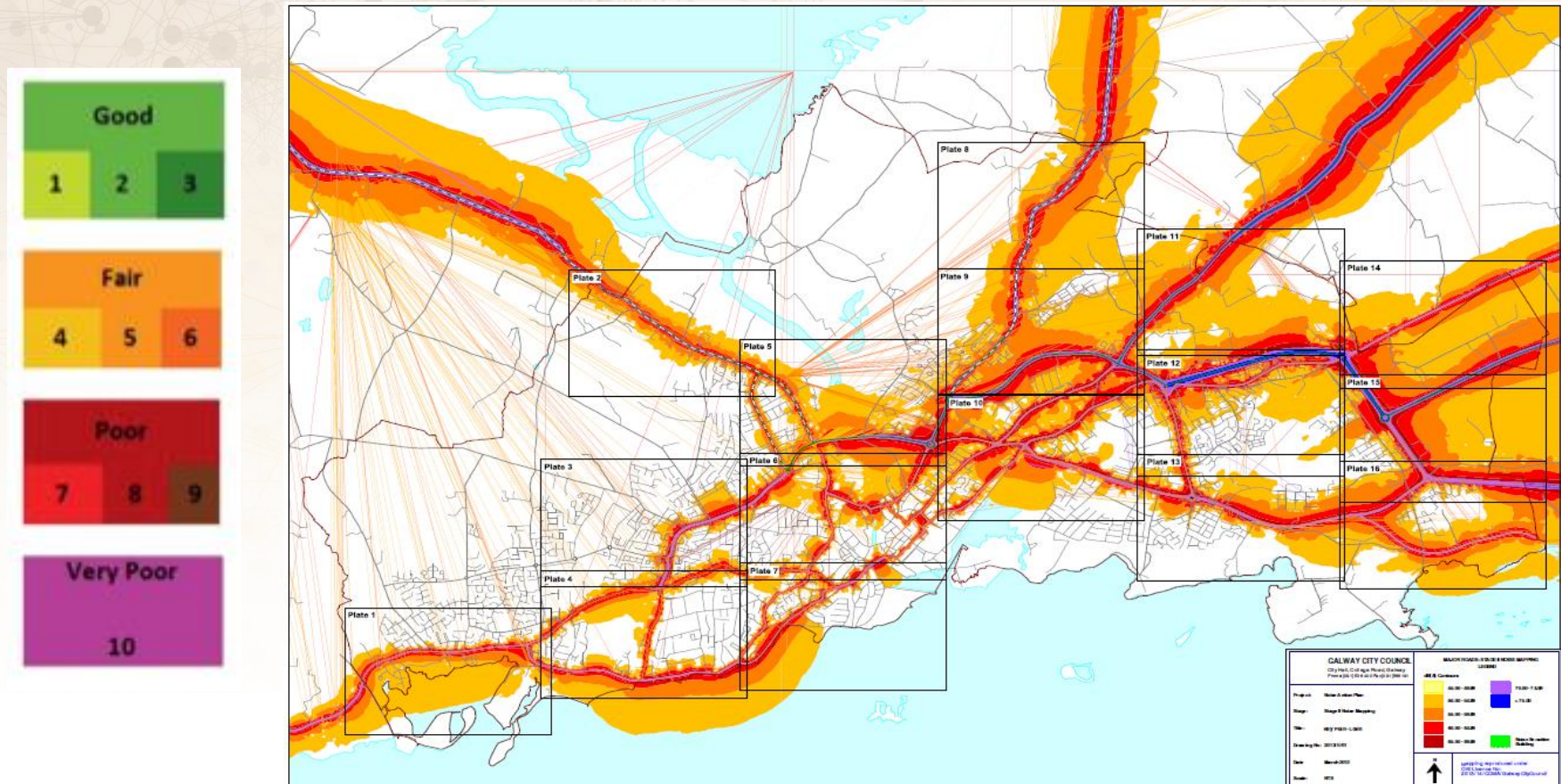
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Ireland #SmartCityPlatform Dimensions





Galway City Noise Pollution Action Plan 2013 - 2018

Implementation of the EU Environmental Noise Directive 2002/49/EC



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#IoTData #IoTPlatforms

National University of Ireland Galway Development & Implementation Plan Enabling Modern Data-Driven Society and the Digital Single Marketplace



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Ireland Smart City Vision

Services and Infrastructure



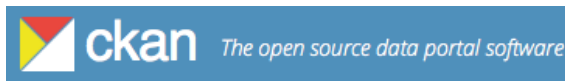
Connecting Sensor Systems to the City



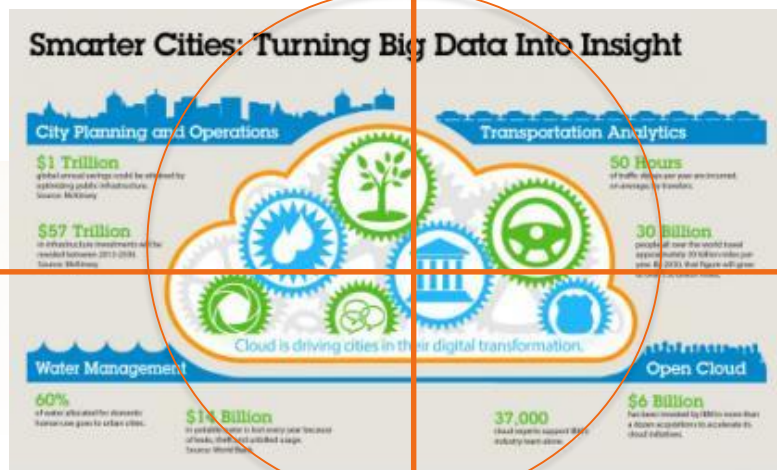
Connecting Future Cities via Data



The Web to connect related Smart City data



Mobile services / devices for the Citizens' needs



<http://smartcitiescouncil.com>



Citizens & Technology



Data Openness & Interoperability

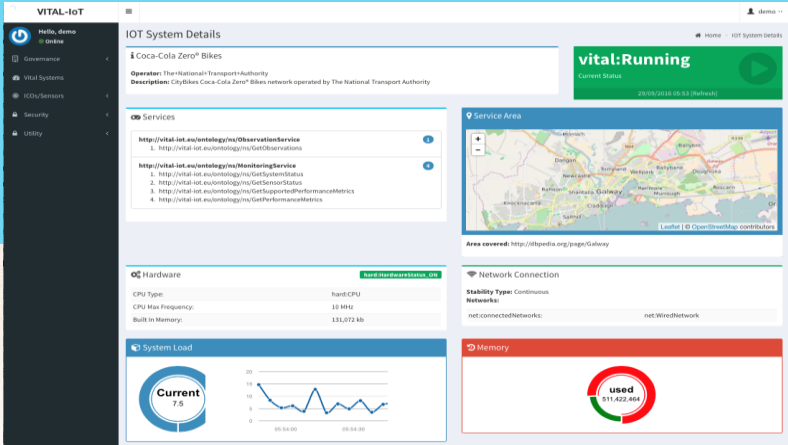
Policy & Good Government



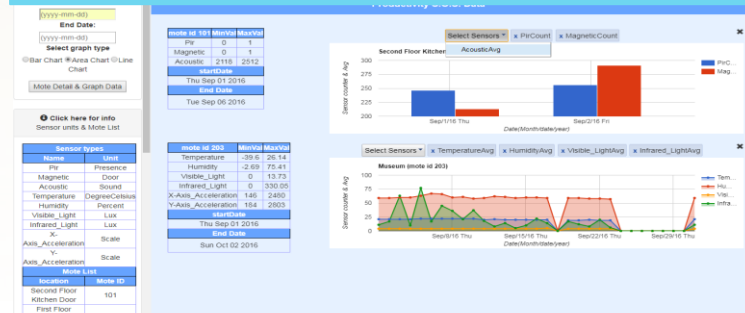
Connecting Future Smart Cities VITAL-OS / OpenIoT / FIWARE



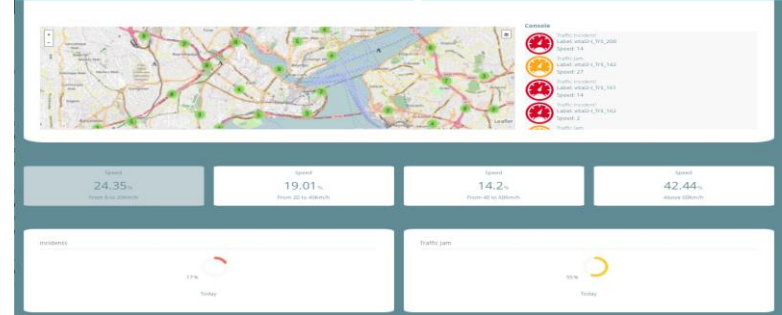
Galway Smart City



Deep Learning for Improving People's Productivity in Smart Buildings



The Future of Ireland Transformation to Smart Regions using Internet of Things





Galway Smart City

#Community #Creation/Participation

The Technologies for Future Cities



IoT Smart Cities

(DEPLOYMENT & IMPLEMENTATION)



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Galway Smart City

Smart Traffic Diversion Scheme Demonstrator

Phase 1
Design and Prototype

Phase 2
Data Collection and Deployment

Phase 3
Solution and Product Partnerships
Data Analytics Platforms
OpenIoT / VITAL-OS / FIWARE

Phase 4
Ensuring Security
and Data Protection

Phase 5
Solution and Product Partnerships
Data Analytics Solutions



Insight Car Park Demonstrator

Hardware Security – Software Security



HW and SW for complete drop-in solution for IoT security



Smart POI
Sensors & Physical Web ready to be used

Sensing & Monitoring
(Internet of Things)

Noise pollution
monitoring
(30dB - 130 dB)



Crowd monitoring
(Wi-Fi devices)



Measure energy
consumption
(non-invasive)

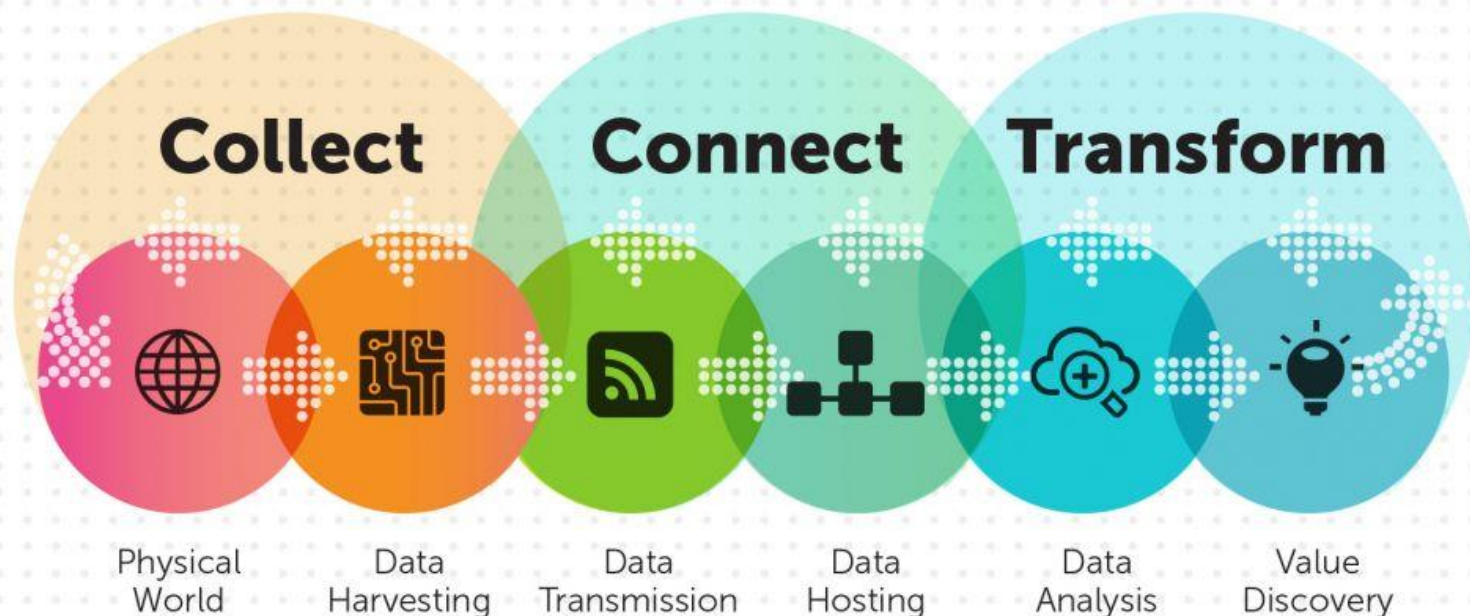


Air Quality monitoring
NO₂, CO₂, SO₂, NO, O₃
temperature & humidity
(Calibrated sensors)



#Insight #LivingLabs #DataSets

Internet of Things, **#IrelandofThings**



Thank You!

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Thank You!

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Insight
Centre for Data Analytics

dew
MOBILITY



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hop
WORKSPACES



OPENIoT
www.openiot.eu



VITAL
www.vital-iot.eu

