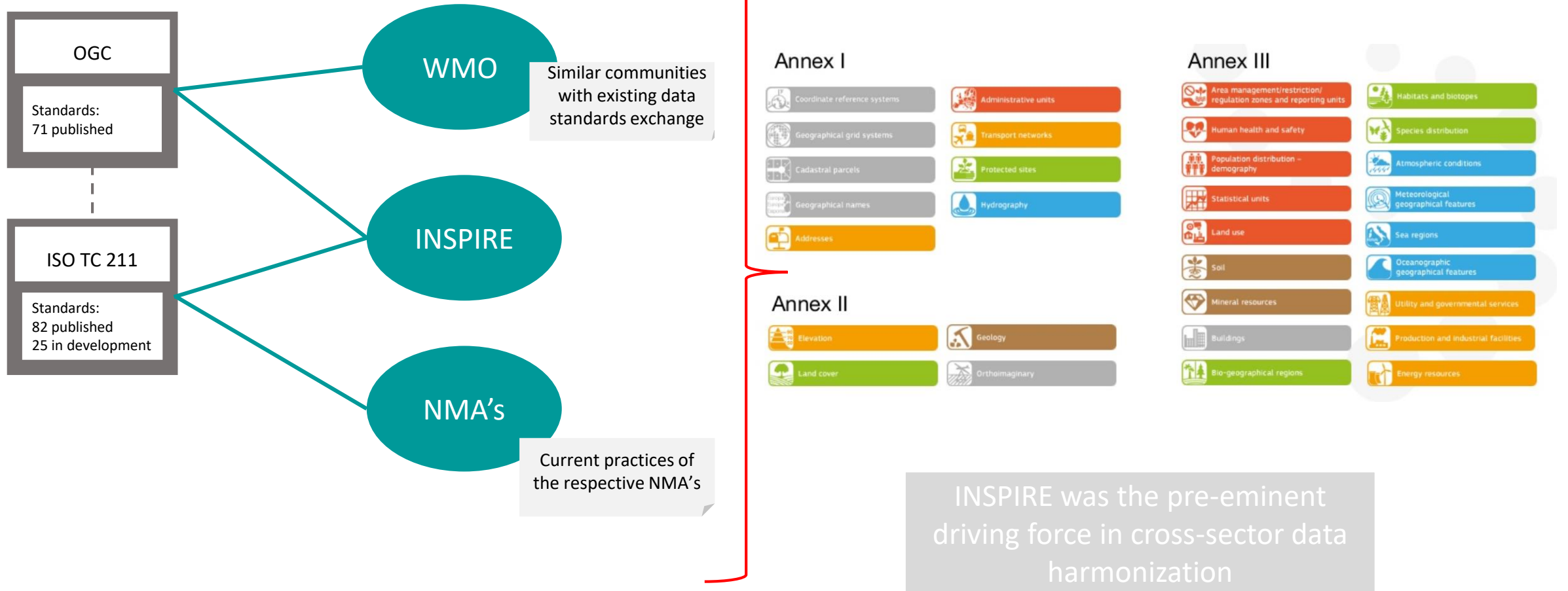


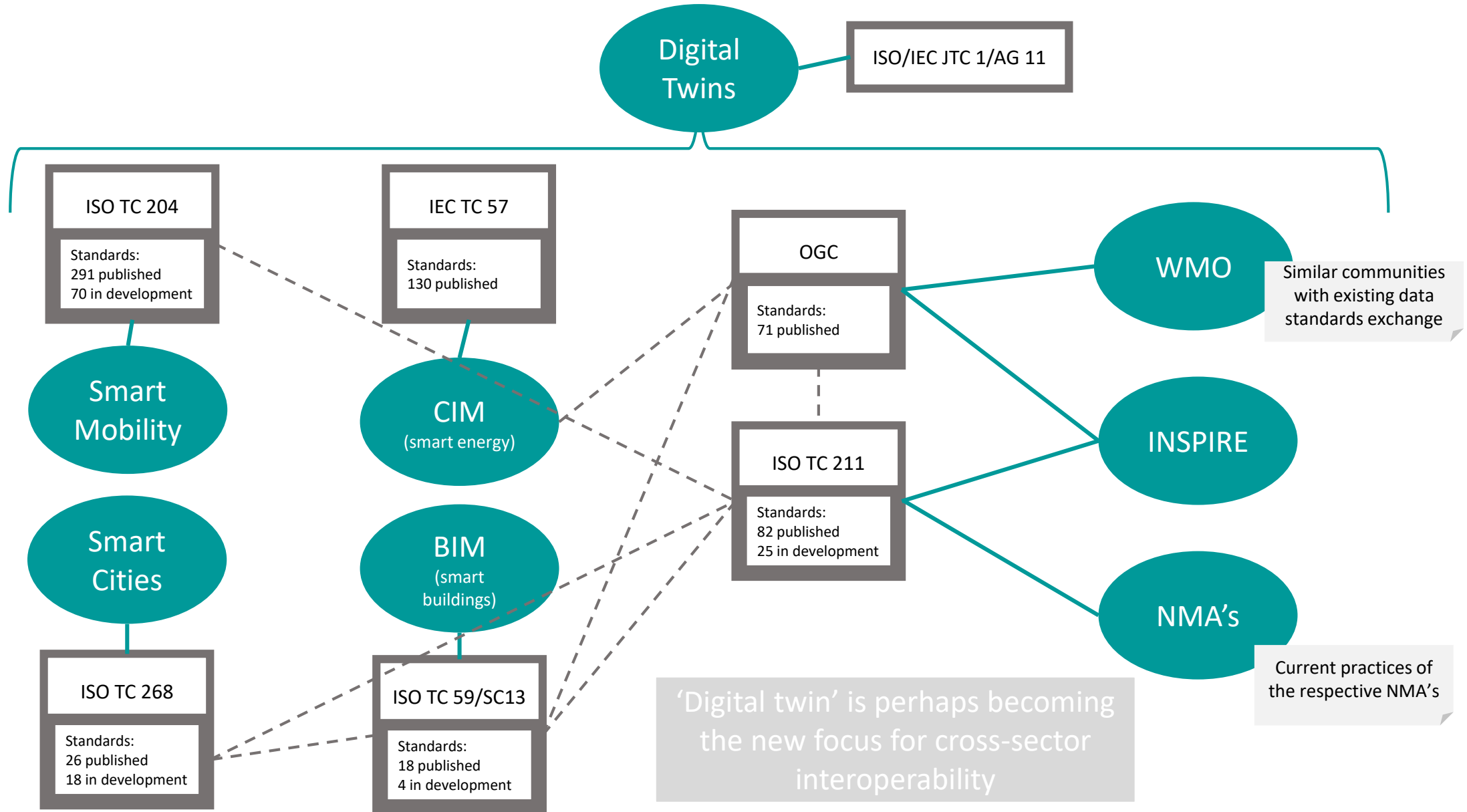
# INSPIRE in new application areas

Keiran Millard, Standards Consultant, BSI  
Data | Sensors | Energy | Environment

# 10 years ago, the world of interoperability was less crowded



# Now every sector is becoming 'smart'



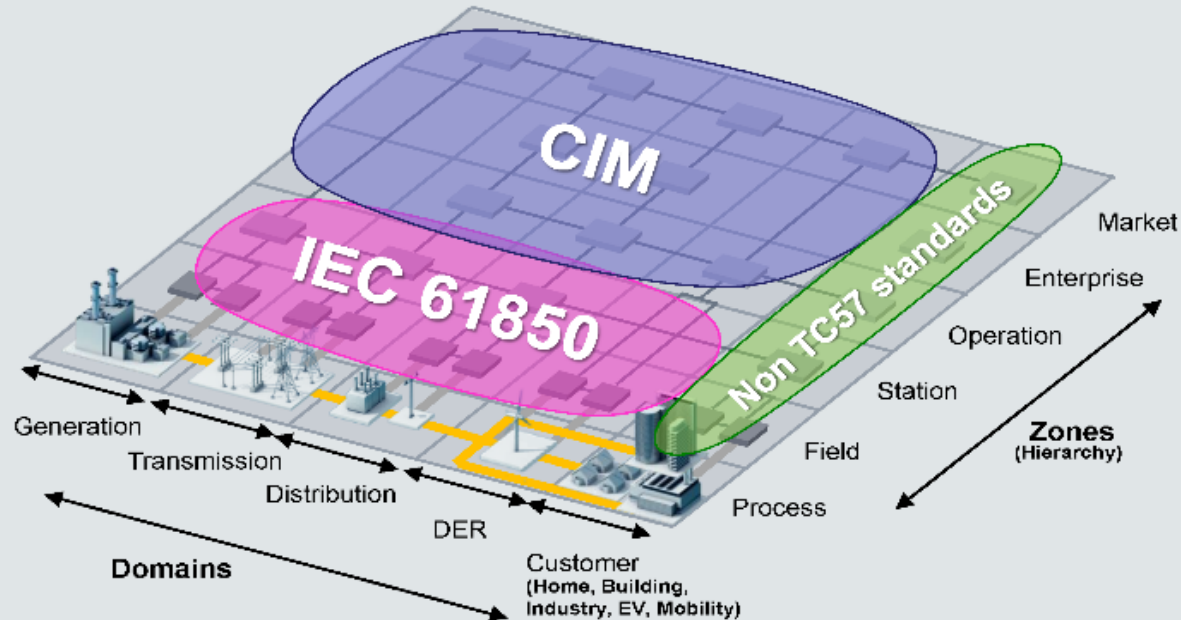
# Inspire is being used by these new sectors, but not as an established SDI

- New sectors with strong integration agendas underpinned by their own standards development activities
  - The visibility and use cases for cross-system interoperability is strengthened
  - Narrative changed from 'why?' to 'how?'
  - Alignment/liaison with ISO TC211 for standards development through established ISO/IEC cooperation rules
- When these sectors look at cross-sector interoperability they face the same issues as INSPIRE
  - Lessons from Inspire are being used (but not all the time)
  - INSPIRE is rarely mentioned as integral to solution development
  - INSPIRE services not being used; more borrowing for INSPIRE data models

# CIM and the Smart Energy Grid: Example of how a sector considers interoperability

## Core Semantic Standards for Smart Grid

The Common Information Model (CIM) (IEC 61968, IEC 61970 and IEC 62325 series) and IEC 61850 series, have been recognized as **pillars** for realization of the **Smart Grid** objectives of **interoperability** and **device management**.



The sector requires control over standards that underpin their operations. Responsive and evolutionary.

TC57 workplan looking at CIM evolution from 'just electricity' to include interoperability with gas and heat networks.

Co-evolution with 'non- TC57' standards?

Concepts from INSPIRE data models have been considered to establish 'common energy elements'. 'INSPIRE export' is a use-case

# Smart Mobility: TROs and INSPIRE

A TRO is essentially an INSPIRE 'area management restriction, regulation and reporting zone'

But it needs to align with existing standards in Intelligent Transport Systems

The TRO data model uses INSPIRE concepts/learnings, so like the CIM example the 'export to Inspire' use case can be fulfilled

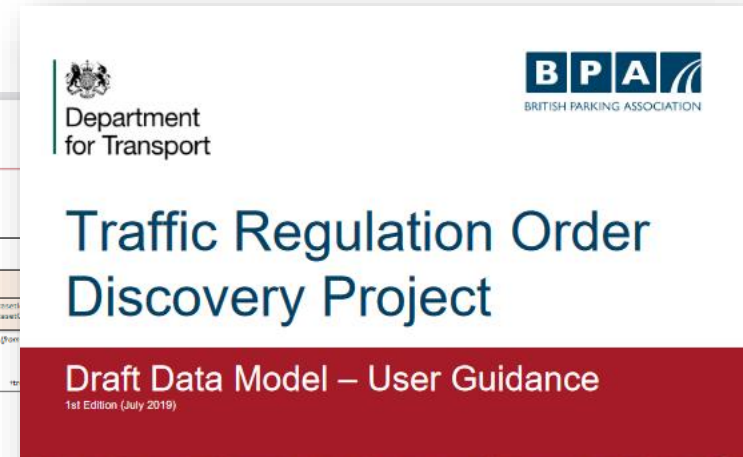
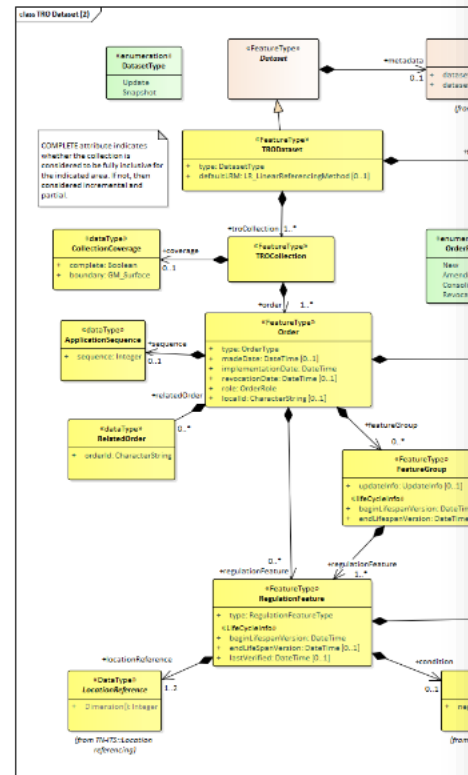


Figure 2 - TRODataset extension



Traffic Regulation

[https://www.britishparking.co.uk/write/Documents/TIR%20Board/BPA\\_TRO\\_Data\\_Model\\_User\\_Guidance.pdf](https://www.britishparking.co.uk/write/Documents/TIR%20Board/BPA_TRO_Data_Model_User_Guidance.pdf)

# Standards for smart cities and BIM are converging



## Smart Cities

- High level, aspirational big picture
- Moving from abstract to application

The convergence between BIM and Smart Cities is still emerging.

Unlike Smart Energy and Smart Mobility the boundaries of interoperability are less established. Both have relatively new formal standards development

BIM (level 3) and Smart Cities have very wide subject areas; data exchange requirements and maturity looking like INSPIRE 2010

## BIM

- Application focussed
- Extending the scope into the bigger picture



# UK digital twin approach v INSPIRE

## Information Management Framework (IMF)

A Foundation Data Model (FDM)

a consistent understanding of what constitutes the world of digital twins, and how we want to be able to formally describe them.

A Reference Data Library (RDL)

the particular common set of classes and the properties we will want to use to describe our digital twins.

An Integration Architecture (IA)

the protocols that will enable the managed sharing of data, the production of models, the scripting of queries and the analysis of model outputs.

Inspire Interoperability Framework

Inspire General Conceptual Model

Inspire Data Specifications

Inspire Data Services  
(discover, view download, transformation)



# The value of INSPIRE 2020+

- Over the last 10 years the narrative for interoperability has changed from 'why?' to 'how?'
- Since 2010 new communities have emerged with strong use cases for interoperability underpinned by reactive, international standards development activities.
- INSPIRE is being used as a reference and a use case but not as an SDI component in these communities. Inspire may be engulfed by the tsunami of emerging international standards activity
- INSPIRE is more relevant now than it was 10 years ago, but its standards activity needs to keep pace with its peers in industry and SDOs. INSPIRE could be the foundation for international DT standards.