



Location Powers; Our Urban Environment

ISO/IEC JTC1/WG11 (IT aspects of) Smart Cities

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Introductions



ISO / IEC JTC1 Information
Technology

China
UK
Russia
Germany
India
Canada
...



OGC
ISO TC211

George Percivall
Carsten Rönsdorf
Chris Body
Peter Parslow

WG11 Smart Cities

Other ISO & IEC committees



Overview – what are WG11 creating?

- ISO/IEC 30182:2017 *Information technology - Smart city concept model -- Guidance for establishing a model for data interoperability*
- ISO/IEC 30146 *Information technology - Smart city ICT indicators*
- ISO/IEC 21972 *Information technology - An upper level ontology for smart city indicators*
- ISO/IEC 30145-3 *Information technology - Smart City ICT Reference Framework – Part 3: Smart city engineering framework*
- ISO/IEC 30145-2 *Information technology - Smart City ICT Reference Framework – Part 2: Smart city knowledge management framework*
- ISO/IEC 30145-1 *Information technology - Smart City ICT Reference Framework – Part 1: Smart city business process framework*



30182 *Smart city concept model*

- Based on British Standards Institution Publicly Available Specification PAS 182
 - Which was based on practice across a number of UK cities
- Internationalised, with opportunity for input from a wide range of countries
- Describes how to link data from different sectors (domains) in a city
- Using a semantic approach – a small set of high level concepts, e.g.
 - PLACE
 - PERSON
 - CASE
 - OBJECT
 - EVENT



30146 *Smart city ICT indicators*

- CD ballot comments resolved; text for DIS provided August 2018
- Some controversy in JTC1 & ISO (3 votes against progressing to DIS; 12 for)
- Provides a set of indicators for a city to how well it's ICT is supporting it's "smart" ambitions, e.g.
 - What proportion of services available to citizens can be accessed through 'joined up IT'?
 - Transportation, social (insurance) services, medical services, education, employment ("job centre"), assistance to people with disabilities, e-commerce
 - How efficiently is the city administration using joined up ICT?
 - Governance, management, safety & security
 - Environmental protection, green energy & energy efficiency
 - Network infrastructure
 - City model
 - availability of city model data, and its use by other systems in the city
 - At a level relevant to the city's ambitions



21972 *Upper level ontology for smart city indicators*

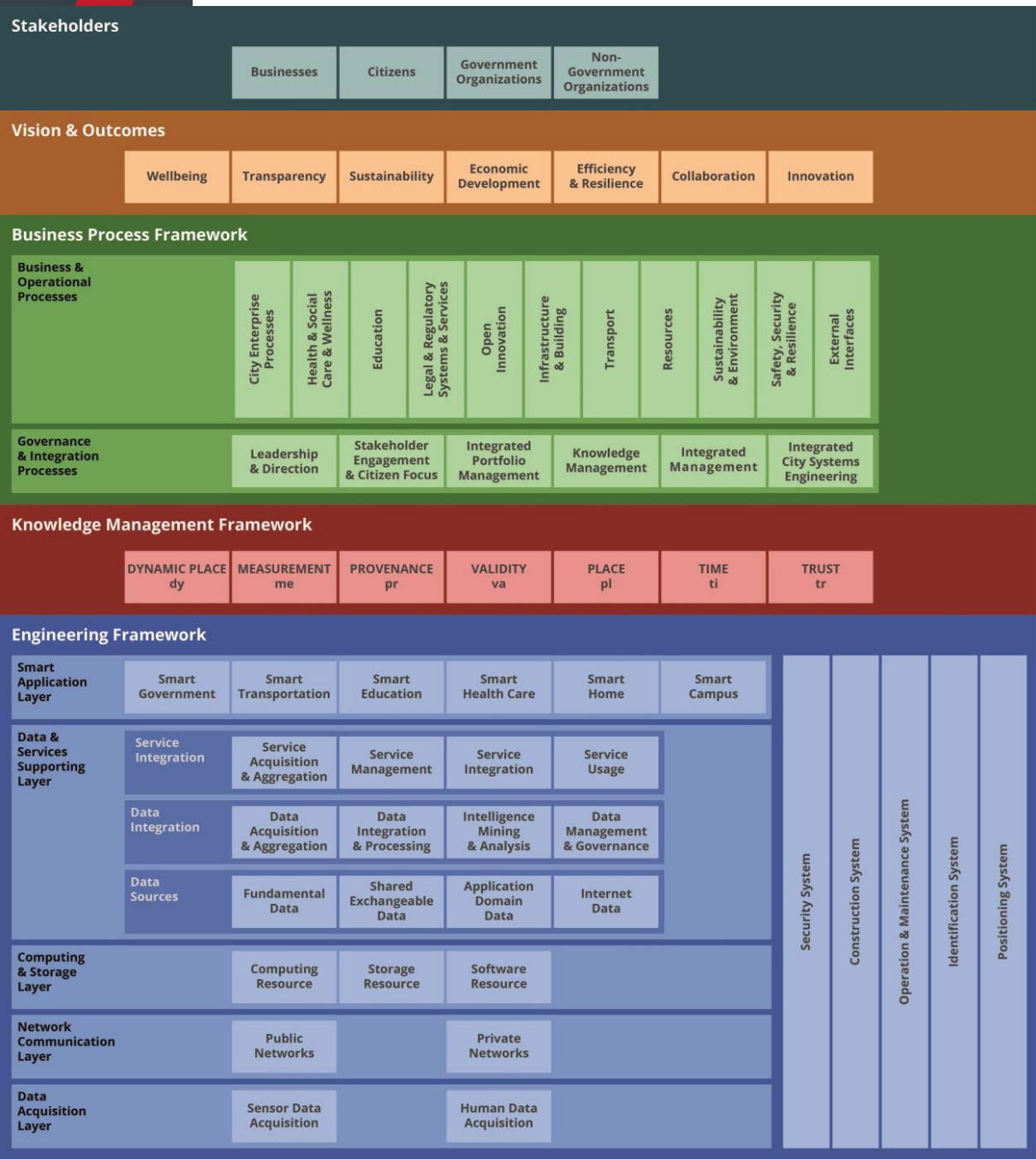
- CD ballot initiated in August 2018 – chance for JTC1 members to comment
 - Expect publication mid 2019?
- Perhaps a bit niche “This document specifies a data model that can be used to represent city indicator definitions”
 - i.e. it’s aimed at people trying to compare city indicators across the different standards, or through time as the standards evolve
- Provides an OWL ontology for indicators, that could be applied to sets such as ISO 37120 *Sustainable cities and communities -- Indicators for city services and quality of life*
- Or the others being worked on in ISO TC268:
 - ISO 37122 CD *Sustainable cities and communities -- Indicators for smart cities*
 - ISO 37123 WD *Sustainable cities and communities -- Indicators for resilient cities*
- Or even for the UN SDG indicators, or any other set



30145 *Smart City ICT Reference Framework*

The purpose of this international standard, smart city ICT reference framework, is to assist city Chief Information Officers (CIO) and other stakeholders in planning and implementing a smart city. It comprises the following three parts:

- Part 1: smart city business process framework
- Part 2: smart city knowledge management framework
- Part 3: smart city engineering framework



Stakeholders

Vision & Outcomes

Business Process Framework

Knowledge Management Framework

Engineering Framework



30145-3 *Part 3: Smart city engineering framework*

- Mature working draft
- DIS target date March 2019 – publication late 2019?
- Layered architecture
 - Application
 - Data & services
 - Computing & storage
 - Network communication
 - Data acquisition
- Cross cutting themes
 - Security
 - “construction”
 - Operation & maintenance
 - Identification
 - Positioning



Engineering Framework

Smart Application Layer	Smart Government	Smart Transportation	Smart Education	Smart Health Care	Smart Home	Smart Campus	Security System	Construction System	Operation & Maintenance System	Identification System	Positioning System
Data & Services Supporting Layer	Service Integration	Service Acquisition & Aggregation	Service Management	Service Integration	Service Usage						
	Data Integration	Data Acquisition & Aggregation	Data Integration & Processing	Intelligence Mining & Analysis	Data Management & Governance						
	Data Sources	Fundamental Data	Shared Exchangeable Data	Application Domain Data	Internet Data						
Computing & Storage Layer		Computing Resource	Storage Resource	Software Resource							
Network Communication Layer		Public Networks		Private Networks							
Data Acquisition Layer		Sensor Data Acquisition		Human Data Acquisition							



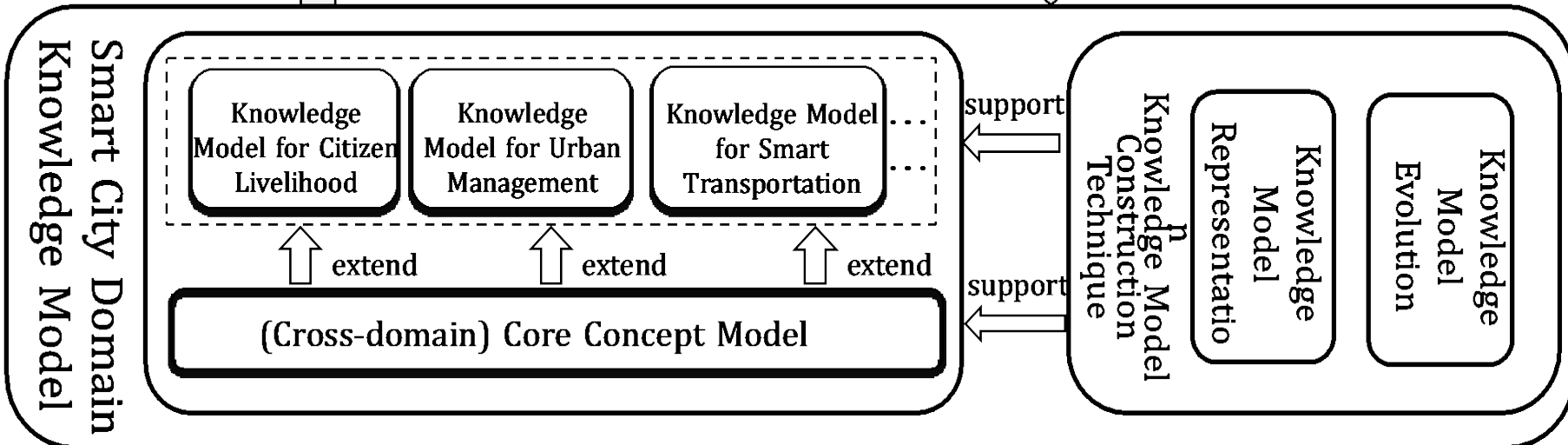
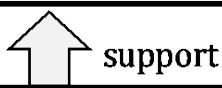
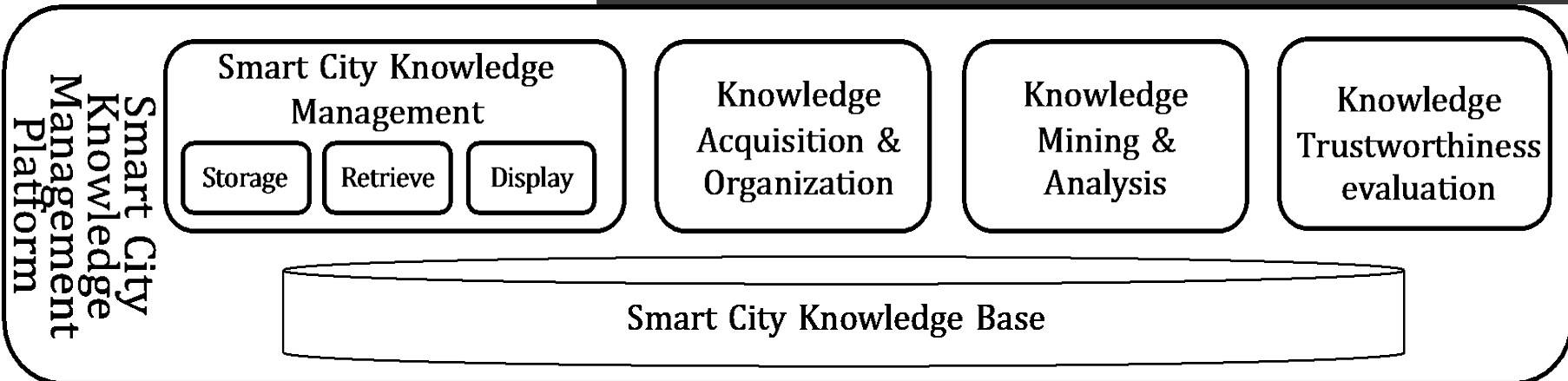
30145-2 *Part 2: Smart city knowledge management framework*

- Change of editor, and quite a major re-write between Working Drafts in early 2018 – moving some stuff out to 21972, for example.
- But still expects to achieve DIS in March 2019

“The Smart city knowledge management framework is principally a tool for knowledge managers within the key agencies within the city.”

“creating, capturing, sharing, using and managing” knowledge

“guidance on how to build infrastructure for knowledge management, define activities related with knowledge management and give an instruction on how to apply the knowledge in Smart city.”





30145-1 *Part 1: Smart city business process framework*

- Slow & halting progress
- Aiming for DIS September 2019
- Adapting the TM Forum standard business model to the needs of a smart city
- Note: IEC have recently started somewhat similar work – perhaps this will actually be completed there?
- Six processes:
 - 1. Leadership and Governance
 - 2. Integrated Portfolio Management
 - 3. Stakeholder Engagement and Citizen Focus
 - 4. Integrated Management
 - 5. Integrated City Systems Engineering
 - 6. Knowledge Management



Where next?

- WG11 “Strategic white paper on Smart City standardization”
 - Requested by JTC1
 - To be discussed at JTC1 November 2018
 - May result in change of scope and/or structure
- ISO have been asked to clarify the overlapping scopes of their Smart Cities TC and this group
- 21972 CD ballot – JTC1 comments by about November
- 30146 DIS ballot – public comments by November
- Hopefully WG11 in October / November will move 30145-3 & perhaps -2 to CD, for JTC1 comment about December – February.
- *Look out for ways to comment, via OGC or your national standards body!*



Questions for the Audience

- Are these standards useful?
- Is it useful to take an 'enterprise architecture' approach to a city?
- What 'IT standards for Smart Cities' would you like to see?