

ETSI ISG CIM



World Class Standards

<https://portal.etsi.org/CIM>

Cross-Cutting

CONTEXT INFORMATION MANAGEMENT

OASC CONNECTED SMART CITIES CONFERENCE 11.01.2018

SESSION: "GLOBAL STANDARDS FOR IOT AND SMART CITIES & COMMUNITIES"

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**... to make it easier
for END-USERS
and CITY DATABASES
and IoT internet-of-things
and 3rd-party APPS
to exchange INFO**

User
Apps

Open
Data

IoT

Applications

**ISG CIM API
[JSON-LD]**

Introduction to ISG CIM



Context Information Management Layer

- exchanging information between domains -

EVENT-
TRIGGERED
DATA



USEFUL
SERVICES
to CITIZENS



(OPEN)
DATABASE
INFORMATION

CHARACTERISTICS

- information-centric
- joining verticals
- interoperable
- replicable

Context Information Management Layer

- five main domains considered -



UNREDACTED PLATFORMS

REDACTED DATABASES

DATA ANALYTICS PLATFORMS

**EVENT-
TRIGGERED
DATA**

**USEFUL
SERVICES
to CITIZENS**

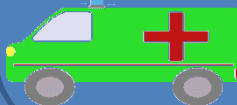
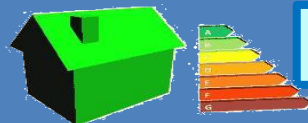
**(OPEN)
DATABASE
INFORMATION**

IOT PLATFORMS

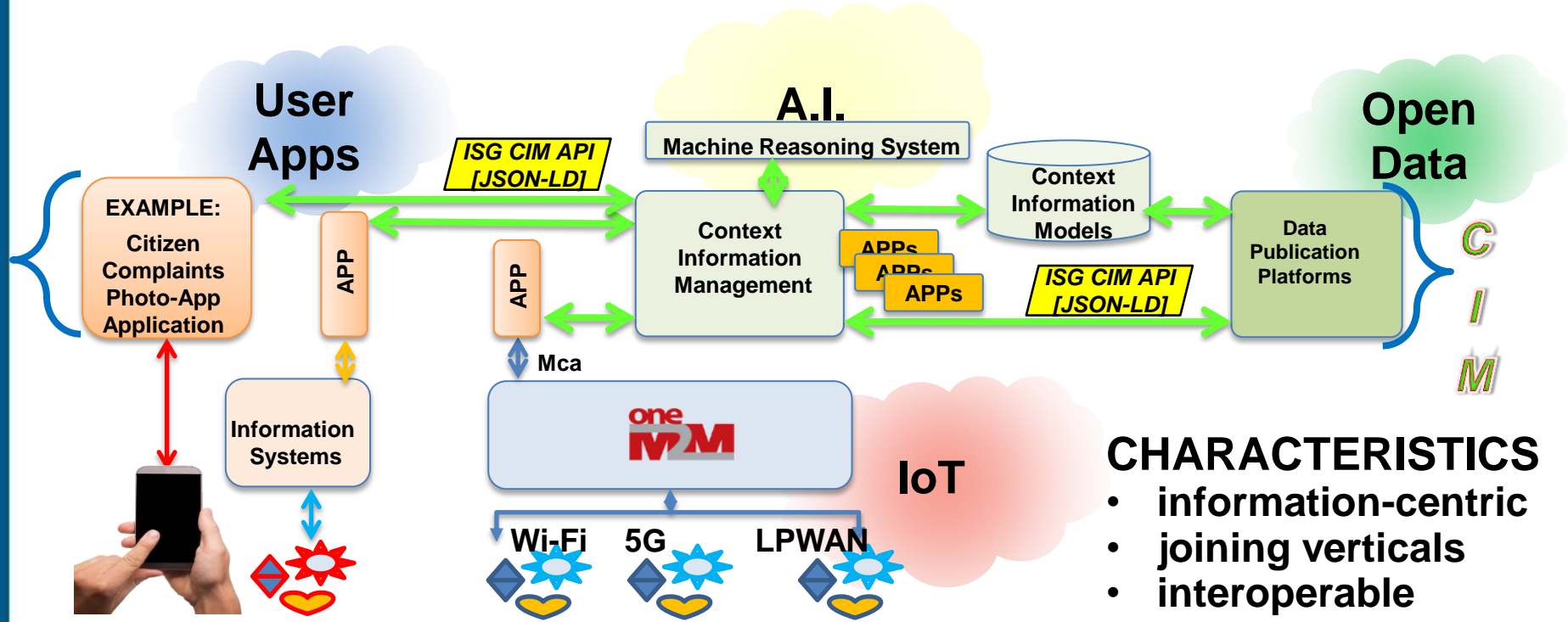
USAGE DATA

CHARACTERISTICS

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Context Information Management Layer - with developer-friendly JSON-LD syntax -



CHARACTERISTICS

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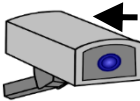
Introduction to ISG CIM

Cross-domain Use Case Example

Use Case: City Hall owns smart lampposts + Cams



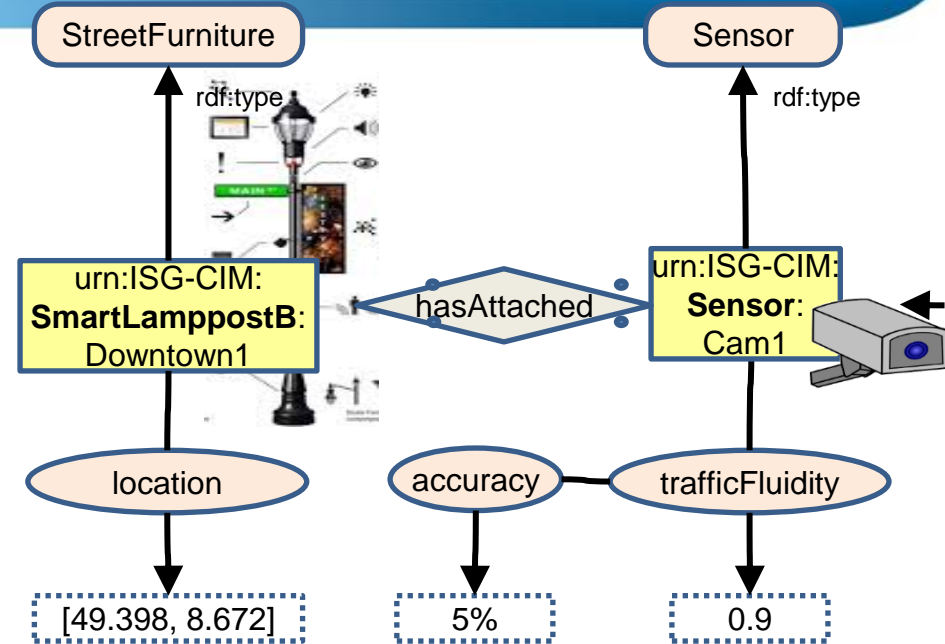
The townhall database has locations and functions of its smart lamp posts



Use Case: City Hall owns smart lampposts + Cams

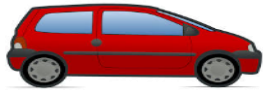


The townhall database has locations and functions of its smart lamp posts



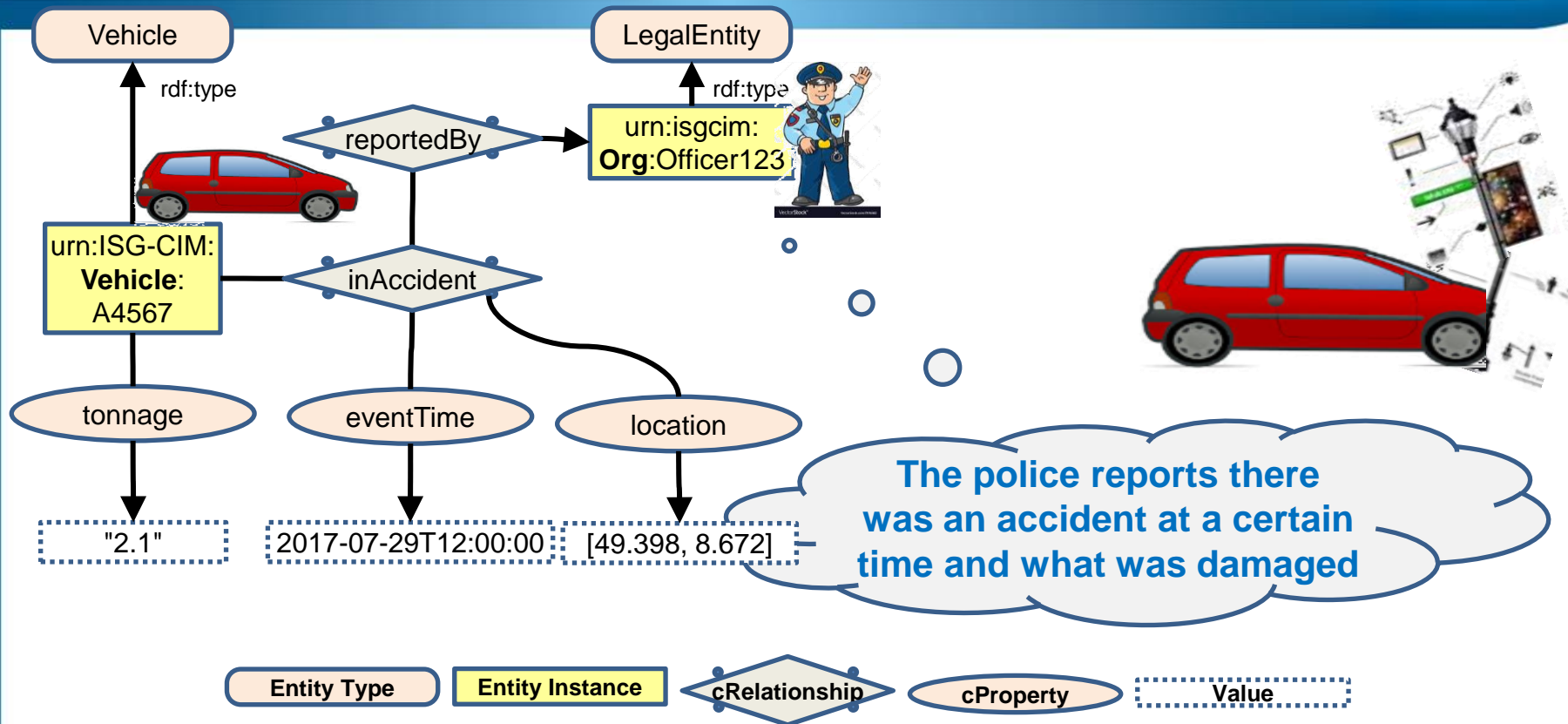
Use Case: Police report an accident

LegalEntity



The police reports there was an accident at a certain time and what was damaged

Use Case: Police report an accident

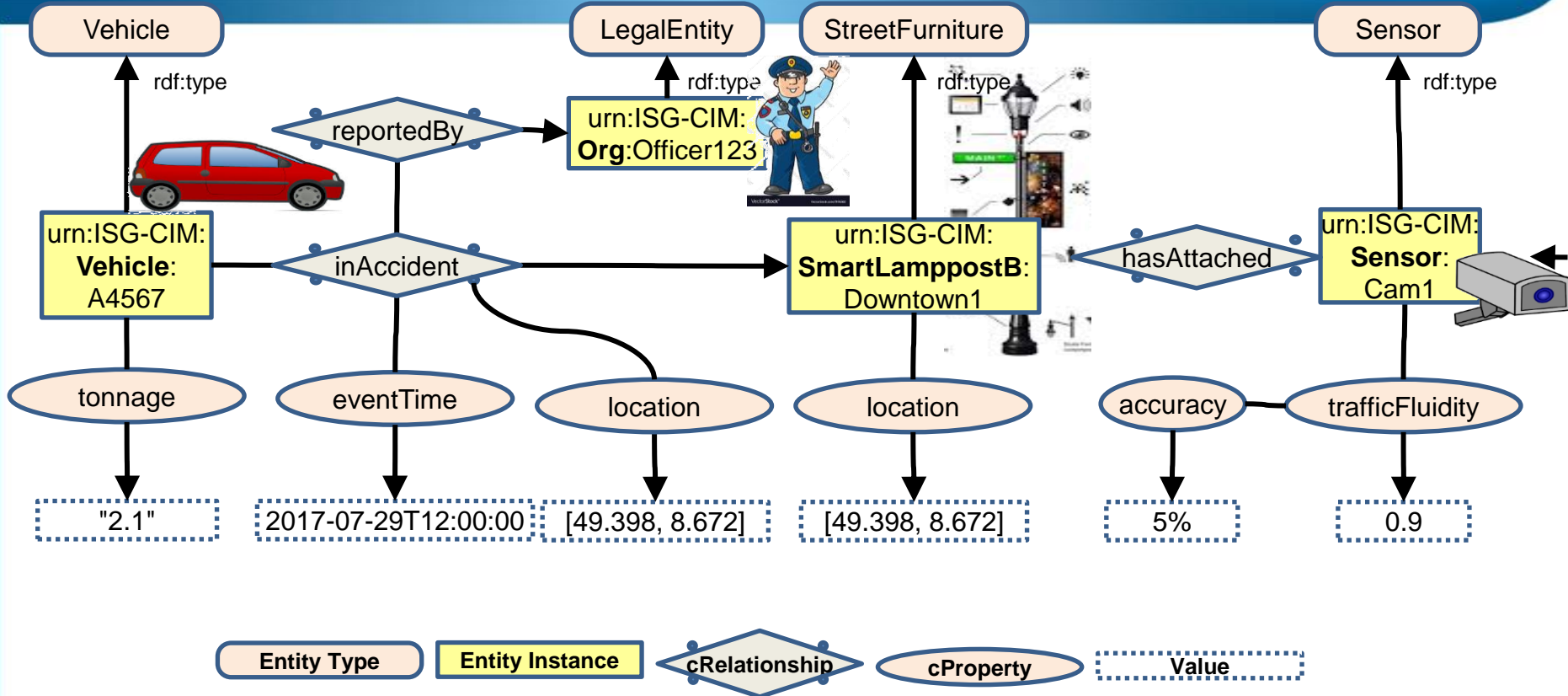


Use Case: two non-IoT databases and one IoT



- The townhall records smart lamp posts in its databases
- The town hall records e.g. that a webcam is attached to a specific lamppost and delivers videodata about the street
- The police department records traffic accidents
- A policeman records lamppost at position XY was hit by a car
- **Townhall can get a notification that a specific lamppost and the data from that lamppost may be affected**
- **Police can query previous data from camera (nearby)**

Use Case: Exchanging the information in an agreed ontology and data model



ETSI ISG CIM is NOT specifying ...



- NOT another IoT/M2M standard
- NOT for low-layer protocol or network-centric connectivity
- NOT just a semantic annotation vocabulary

- NOT specific to one particular environment
- NOT restricted to one type of information source
- NOT dedicated to one particular type of application

- **Flexible exchange of information between domains**
 - Federation of (independent) information sources
 - Based on directed Graphs
 - Core concepts include Entities and their Properties and Relationships
 - *Relationships/Properties can also have Properties and Relationships*
- **Aim to be developer-friendly**
 - Using familiar techniques (e.g. HTTP, JSON-LD)
 - Simple query interface
 - Based on entity type or identifier, with filtering of results
 - Scoping of query (e.g. by time/geography)
- **Taking account of "Data on the Web Best Practices" (W3C)**
 - All terms unambiguously linked/defined in vocabularies/ontologies
 - Enables referring to Licensing, Provenance, Quality information, etc.

Thank you ...



- ... so please join the effort to converge Context Information Management.
- Contact for further information:
ISGSupport@etsi.org
- Open pages for consensus material:
<https://docbox.etsi.org/ISG/CIM/Open>
- + visit at: <https://portal.etsi.org/CIM>

Annex: creating interoperability, local or global ...

Gap Analysis work

