

# ETSI ISG CIM



World Class Standards

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

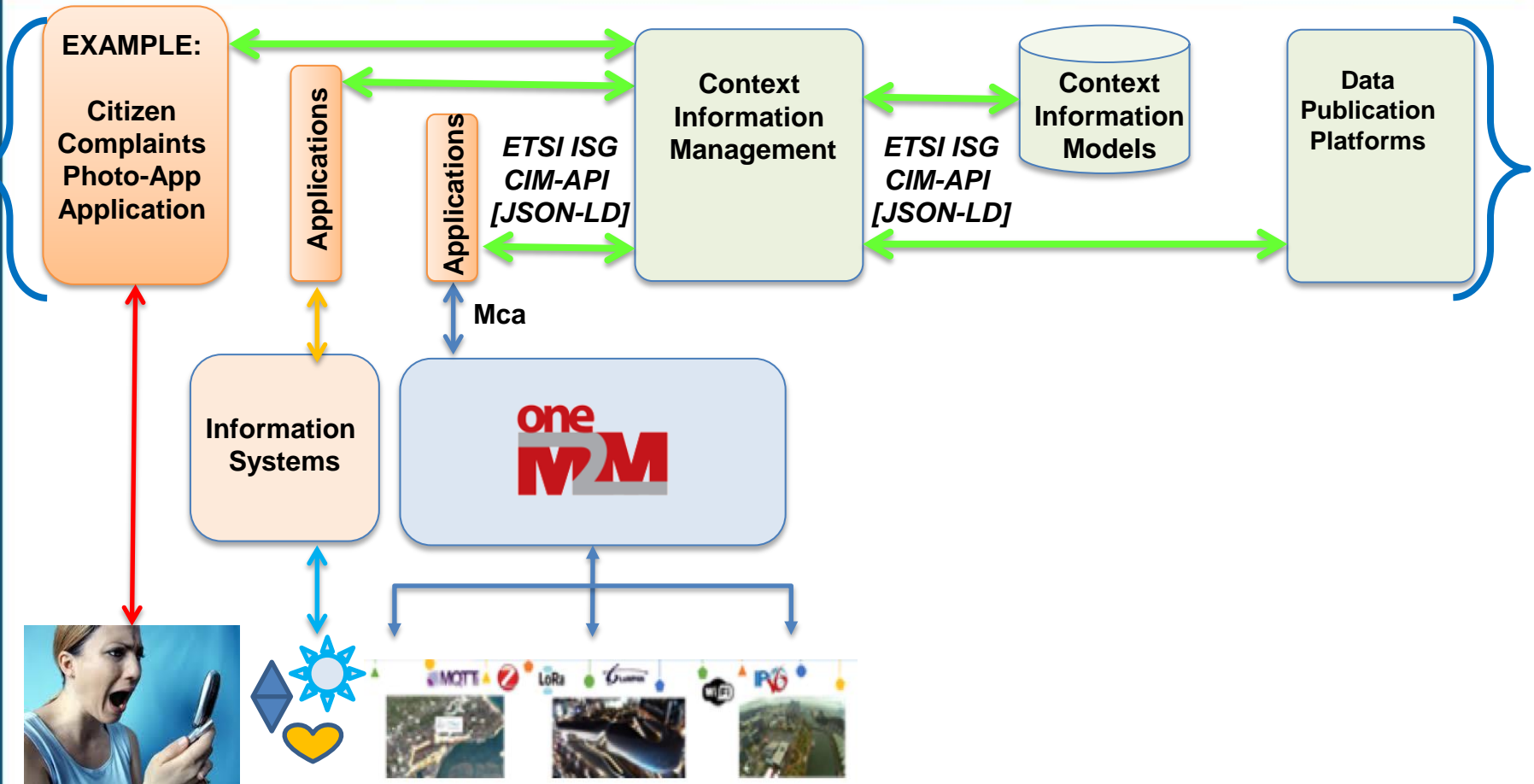
## CONTEXT INFORMATION MANAGEMENT

Outreach Document to oneM2M 20170327

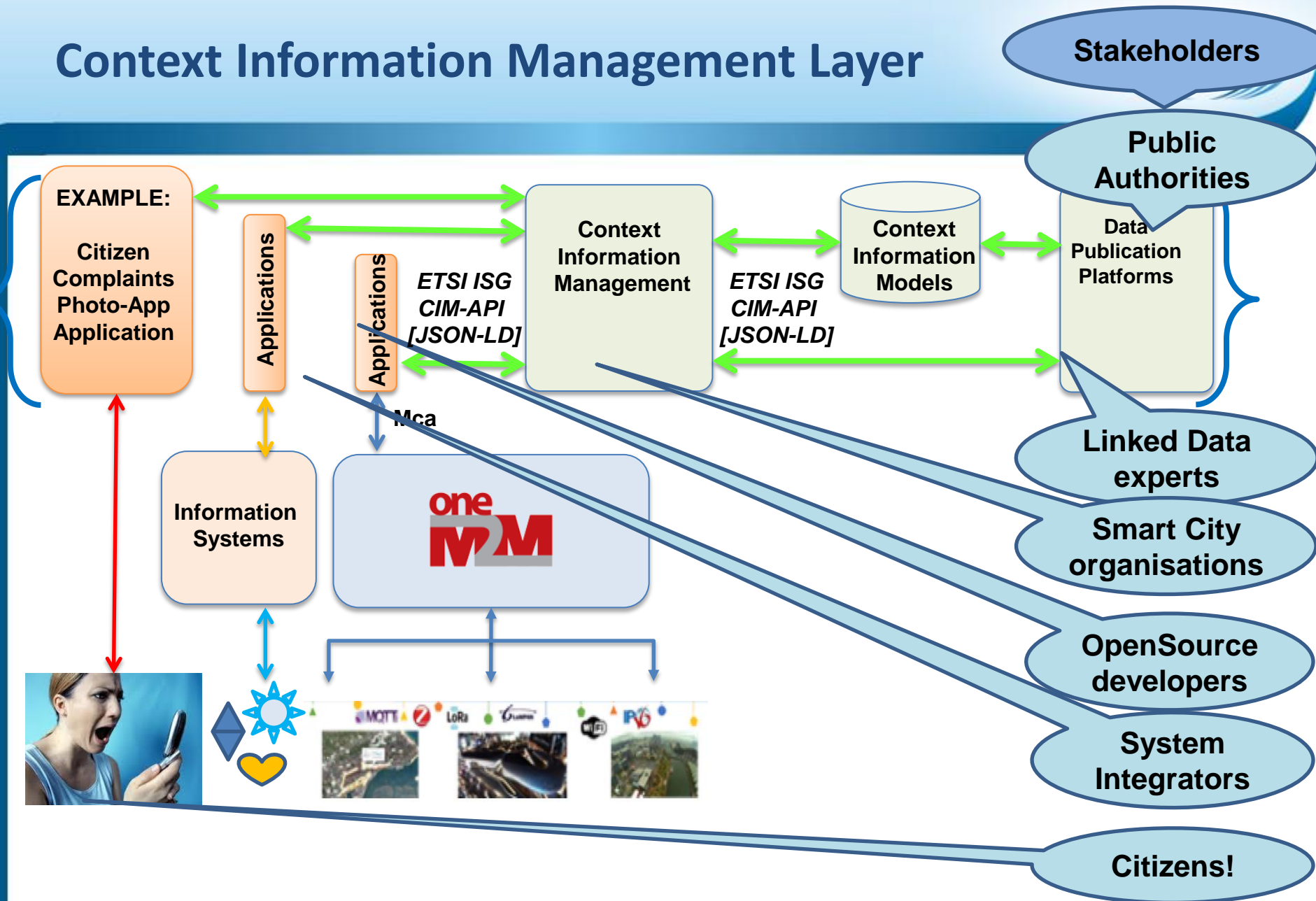
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- **Urgent need for specifications** in Context Information Mgt.
  - BigData, OpenData, IoT ... Lots of opportunities, but remember GIGO  
→ Label the data, match up "publisher" & "consumer", check reliability ...
- **Practical Use Cases exist: Smart City, Agri-Food, Industry**
  - Use cases in SmartCity transport, Citizen involvement, SmartAgriculture...
  - Many trials and pilots running ... but where are the "recommendations"?
- **Need survey of existing scattered SDO work, then check gaps**
  - AIOTI overview, ITU-T overview, ...
  - oneM2M current work; ETSI SmartM2M current work; W3C WoT, etc
- **Need further Stakeholders to expand ISG CIM Group**
  - Open Source developers
  - Database experts for Linked-Data etc etc
  - City administrators ...

# Context Information Management Layer



# Context Information Management Layer



- **Outreach:** for OpenData, Smart Cities
  - ISG CIM is a collaborative activity!
  - We need your experience/requirements/feedback ...
- **Main Work Items** for Context Information Mgt specifications:
  - Use Cases; Requirements (GR CIM 002)
  - Survey & Gaps in existing SDO architectures / specs. (GR CIM 003)
  - API Specification (preliminary) (GS CIM 004)
  - Publishing platforms, Example Data Models (GS CIM 005, 006)
- **Making the Gap Analysis**
  - Checking with SDOs for their status → starts asap
  - Understanding the Requirements based on Use Cases / Examples
  - e.g. FIWARE NGSI API is already widely used and has many advantages, so it has been adopted as starting point ... but what is still missing?

# Timeline in ToR

## Kick-off Meeting = T0 = 09 February 2017



(T0)	<b>First General Meeting</b> (vote on Chairs, WG deliverables, schedule, etc)
(T0+01)	<b>Liaisons</b> to major organisations informing of the work and requesting comment/input. Invite participation/membership.
(T0+03)	Group Report describing <b>overall architecture and standardization gaps</b>
(T0+03)	<b>Joint f2f-workshop</b> (with webinar attendance possible) with ETSI SmartM2M, oneM2M and possibly other organisations.
(T0+05)	Group Specification: (preliminary) <b>Context Information Management API</b> together with a preliminary example data model (e.g. tourism)
(T0+05)	Group Specification: <b>Data Publication Metadata</b> supporting CIM-API
(T0+05)	Group Specification of languages/processes/domains for data modelling
(T0+07)	Group Specification: <b>First set of data models</b> (e.g. mobility, tourism)
(T0+09)	Group Specification for a Context Information Management API (v1.0)
(T0+09)	Group Specification: Second set of data models
(T0+12)	Group Specification: Third set of data models

- Share overview of work items in ISG CIM (see below)
- Collect a list of the most important issues impacting interoperability (and usefulness of ISG CIM work) concerning discovery/
- Identify the main oneM2M documents which ISG CIM should be carefully analysing
- Work together to consolidate/align the standards areas related to Context Information, especially
  - Common Ontology
  - Smart City use cases
  - ...

1. From the descriptions of the ISG CIM Work Items (below), which oneM2M past work has the largest overlap (aka "do not re-invent the wheel") ?
2. Which interfaces (oneM2M TS doc?) do you see as most needing alignment?
3. Which open Work Items do you have which have the strongest overlap with ISG CIM ?
4. ...





# OVERVIEW OF ISG CIM WORK ITEMS

See: <https://portal.etsi.org/tb.aspx?tbid=854&SubTB=854>

- 🌐 [DMI/CIM-001-AB \(MI \)](#) Annotated Bibliography
- 🌐 [DGR/CIM-002-UC \(GR CIM 002\)](#) Use Cases
- 🌐 [DGR/CIM-003-GAP \(GR CIM 003\)](#) Architecture and Gap Analysis
- 🌐 [DGS/CIM-004-APIprelim \(GS CIM 004\)](#) API
- 🌐 [DGS/CIM-005-DPP \(GS CIM 005\)](#) Data Publication Platforms
- 🌐 [DGS/CIM-006-MOD0 \(GS CIM 006\)](#) Information Model

NOTE: Work Items are being handled in parallel, with frequent cross-checks for consistency, in order to rapidly converge.

- collect and analyse use cases and requirements for management of information coming from many different sources (not only IoT) and data models
- allow applications to perform updates on context, register context providers, query information on current and historic context information and subscribe for receiving notifications
- as possible, material shall be collected (by reference) from prior art and existing standards and specifications in this area
- no restrictions on inclusion of use cases due to inability to be supported by a particular (popular) data architecture
- use agreed template to allow better comparison, preferably based on e.g. in oneM2M, SmartM2M, or some major group.

- Analysis: indicate if use case compatibility with the architecture(s) discussed in Work Item GAP
- Prioritization: use a decision matrix based on a list of weighted criteria, emphasizing cross-domain aspects
- chosen subset of use cases will be used to guide later requirements for the Architecture and for the API specification(s)
- A comprehensive global set of use cases is not required, just a set to define the problem space.

- Goal: Identify a reference architecture and show positioning /compatibility to e.g. oneM2M.
- initial focus should be on potential gaps in the OMA NGSI 9 and 10 abstract interface specifications.
- Recommendations based on pro/con information, and referencing existing widely supported concepts.
- An annex may be added to collect information on cross-domain Context Information Models, i.e. models that are common to several of the domains discussed in WI UC, together with the metamodels, definition languages and processes needed for the specification, curation, publication and evolution of Context Information Models.

- There is a long list of issues to clarify and resolve, e.g.
  - handling of private vs public data,
  - REST constraints,
  - relationship of the CIM API to existing architectures like oneM2M,
  - naming of entities,
  - accounting of usage e.g. by feature and/or user group,
  - security, public safety,
  - timestamping and freshness of data,
  - quality KPIs of data,
  - managing multiple contexts,
  - scalability.
  - ...

- Goal: (preliminary) definition of a standard API for Context Information Management enabling close to real-time access to information coming from many different sources (not only IoT).
- define how such an API enables applications to perform updates on context, register context providers which can be queried to get updates on context, query information on current and historic context information and subscribe for receiving notifications on context changes.
- The criteria for choice of the API characteristics shall be based on results in WI UC and WI GAP.

- This Group Specification is labelled "preliminary" because it should be published widely in order to elicit comment and critique from the user communities and their comments will be used to modify and improve the later final API.
- Accordingly a feedback process shall be described
- This Group Specification shall be compatible with an example data model published at the same time (see Work Item CIM-005 MOD0), so that implementers of appropriate software can efficiently test and compare results and interoperability.



- The purpose of this Group Specification is to analyse example data publications systems from the WI on Use Cases and identify requirements to be fulfilled by the CIM API for supporting open data publication, data privacy and/or authorization of access.
- Part two of this work item will extend the analysis to e.g. enablers for multi-party access contracts. Such work may require external experts and may not be delivered within this preliminary specification.

# Thank you ...



- 🌐 ... so please join the effort to converge Context Information Management.
- 🌐 Contact for further information:  
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- 🌐 + visit at: <https://portal.etsi.org/CIM>