GOBIERNO DE ESPAÑA
MINISTERIO DE ENERGÍA, TURISMO Y AGENDA DIGITAL
SECRETARÍA DE ESTADO PARA LA SOCIEDAD DE LA INFORMACIÓN Y LA AGENDA DIGITAL

Smart City IoT Convergence: Platform and Solutions Convergence & Interoperability

SPANISH CITY MODELPLATFORMS

Jesus Cañadas Fernandez

Cabinet SESIAD

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ICT ON SERVICE CITY PLATFORMS

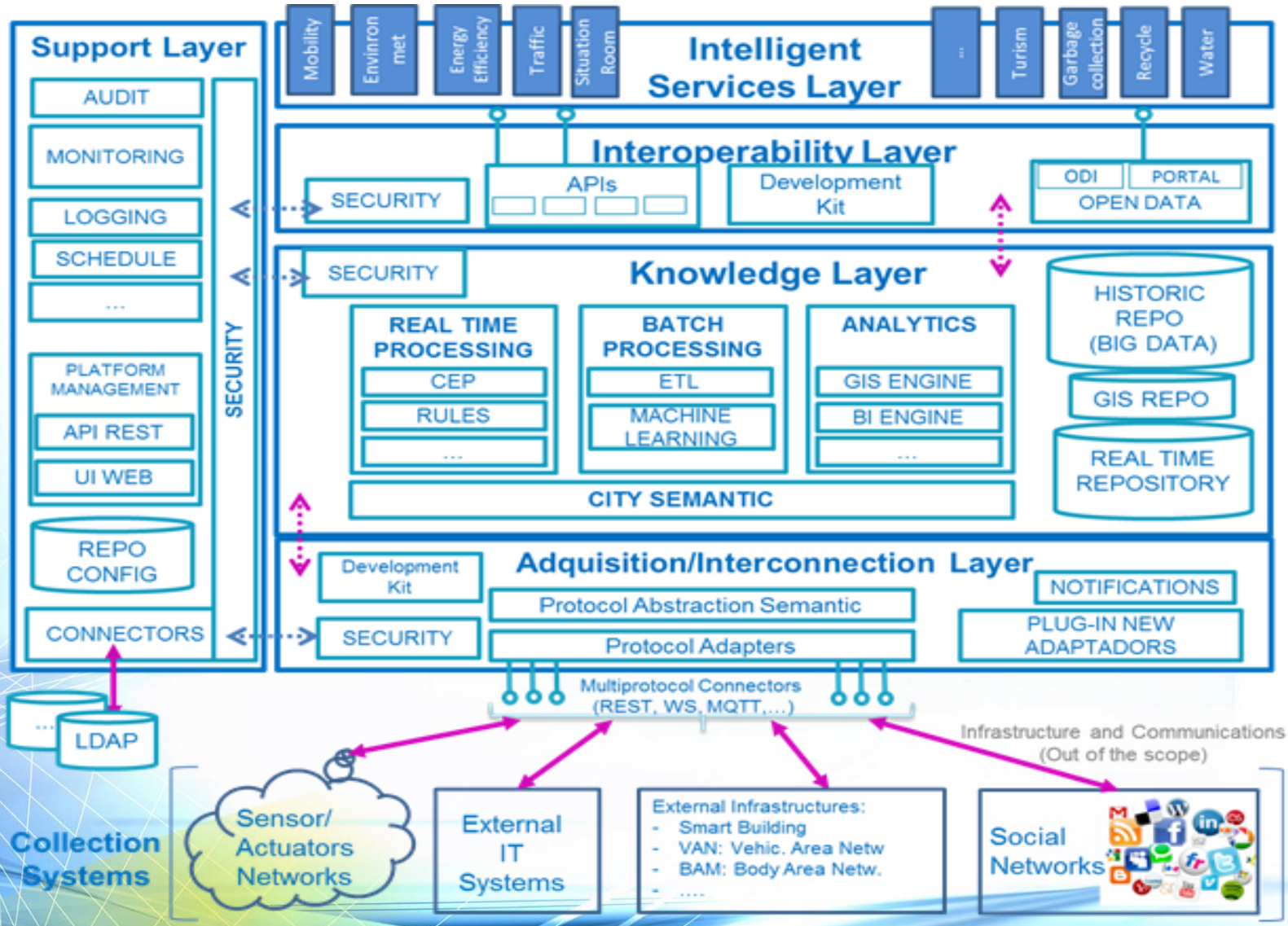
CURRENT SITUATION

- CHAOS OF PLATFORMS AND PROPIETARY SYSTEMS
- CHAOS IN SEMANTIC
- VERTICALS WITHOUT HORIZONTALITY.
- SERVICE NEEDS GO AHEAD OF STANDARDIZATION

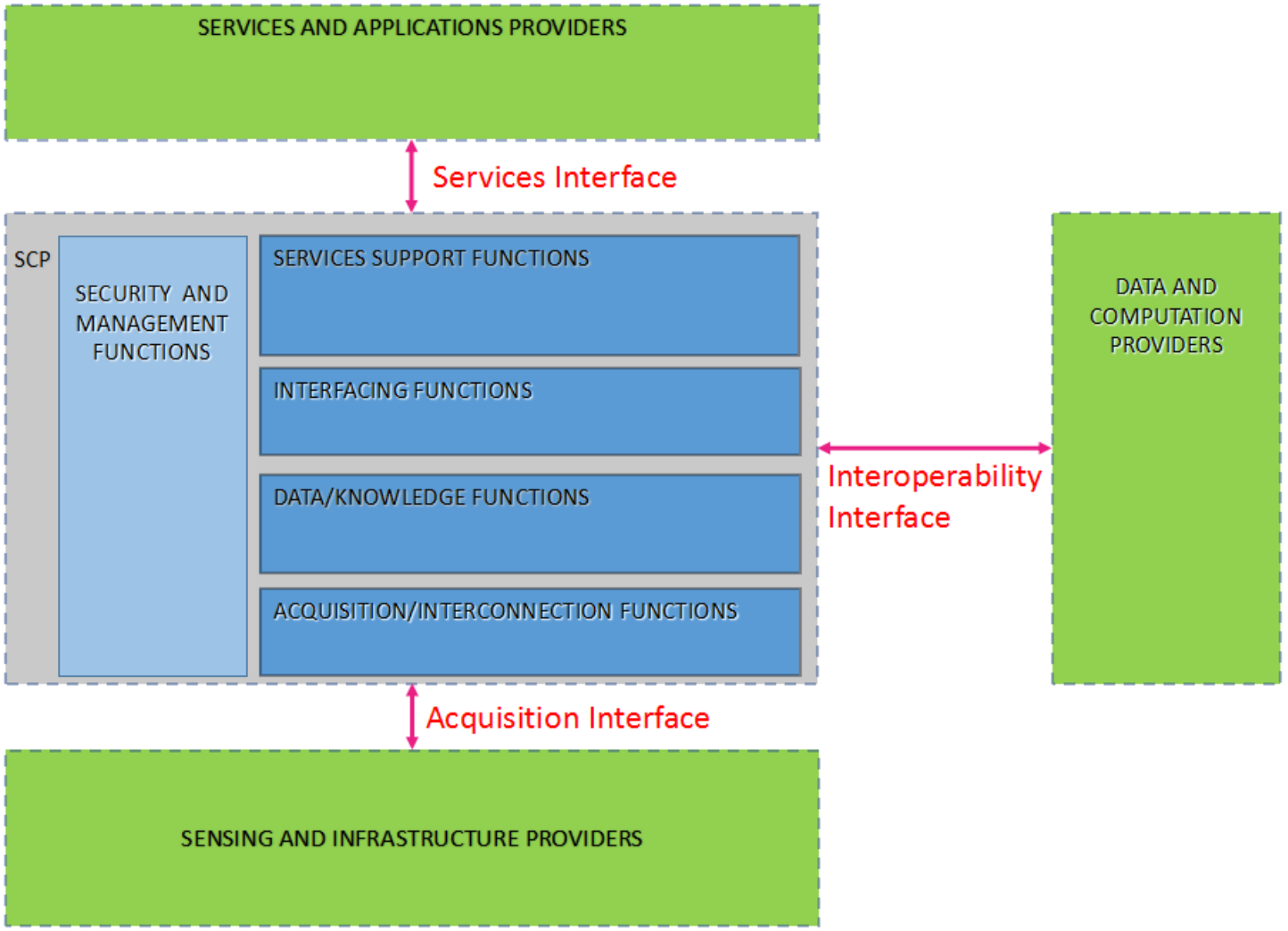
EVOLUCION

- OPEN AND STANDARDISED PLATFORMS
- SEMANTIC RULES
- STANDARDIZATION: UIT, ISO, ETSI, TM FORUM, ONEM2M…

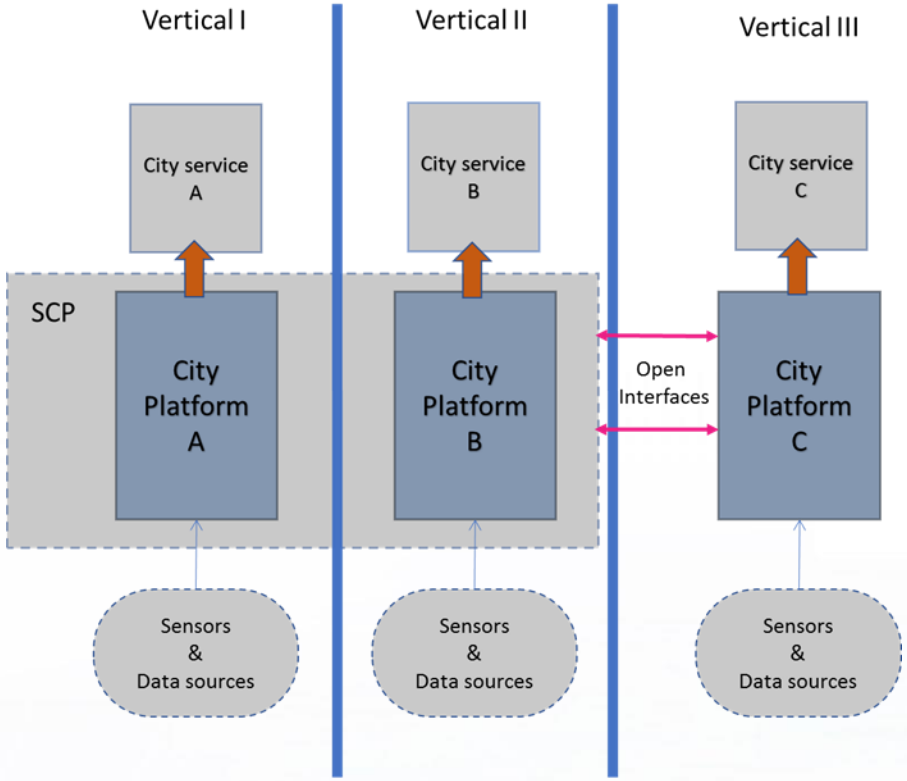
MODEL OF PLATAFORM APPROVED IN SPAIN
Approved as ITU-T Recommendations Y 4200 & Y4201

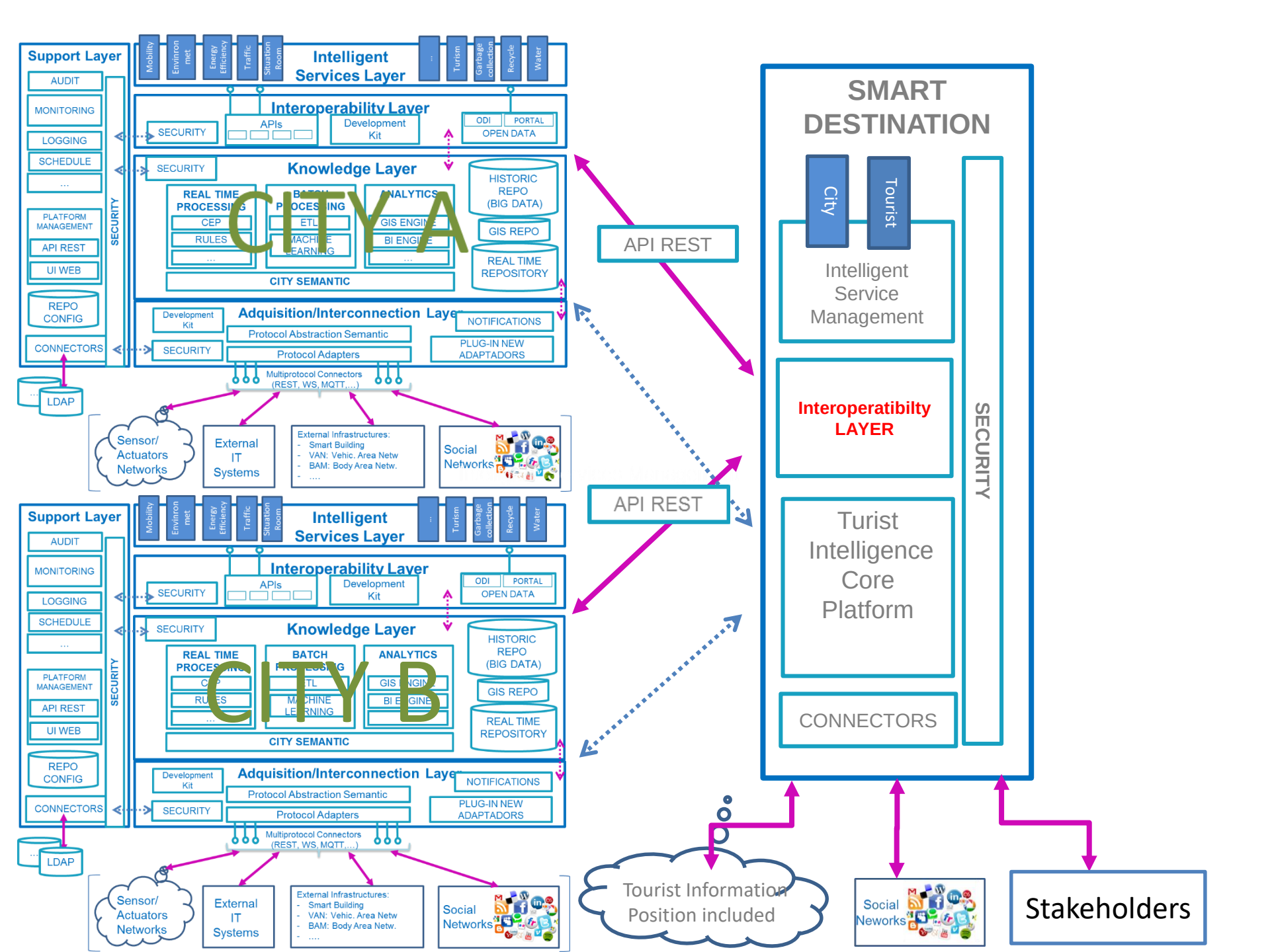


APPROVED BY ITU: ITU-T Y.4200 (ex Y.SCP)



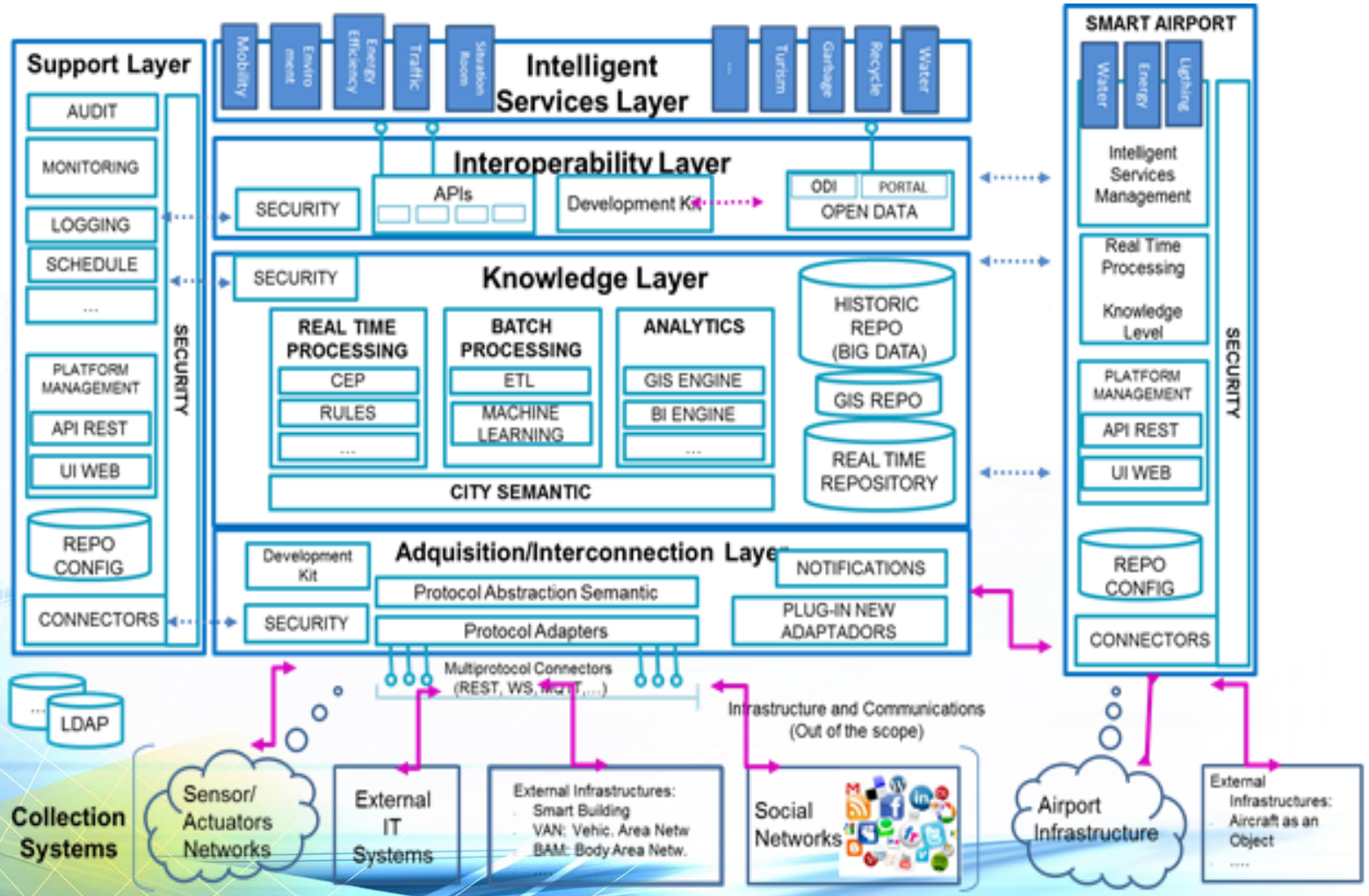
CREATING A SCP PLATFORM ITU-T Y.4200 (ex Y.SCP)



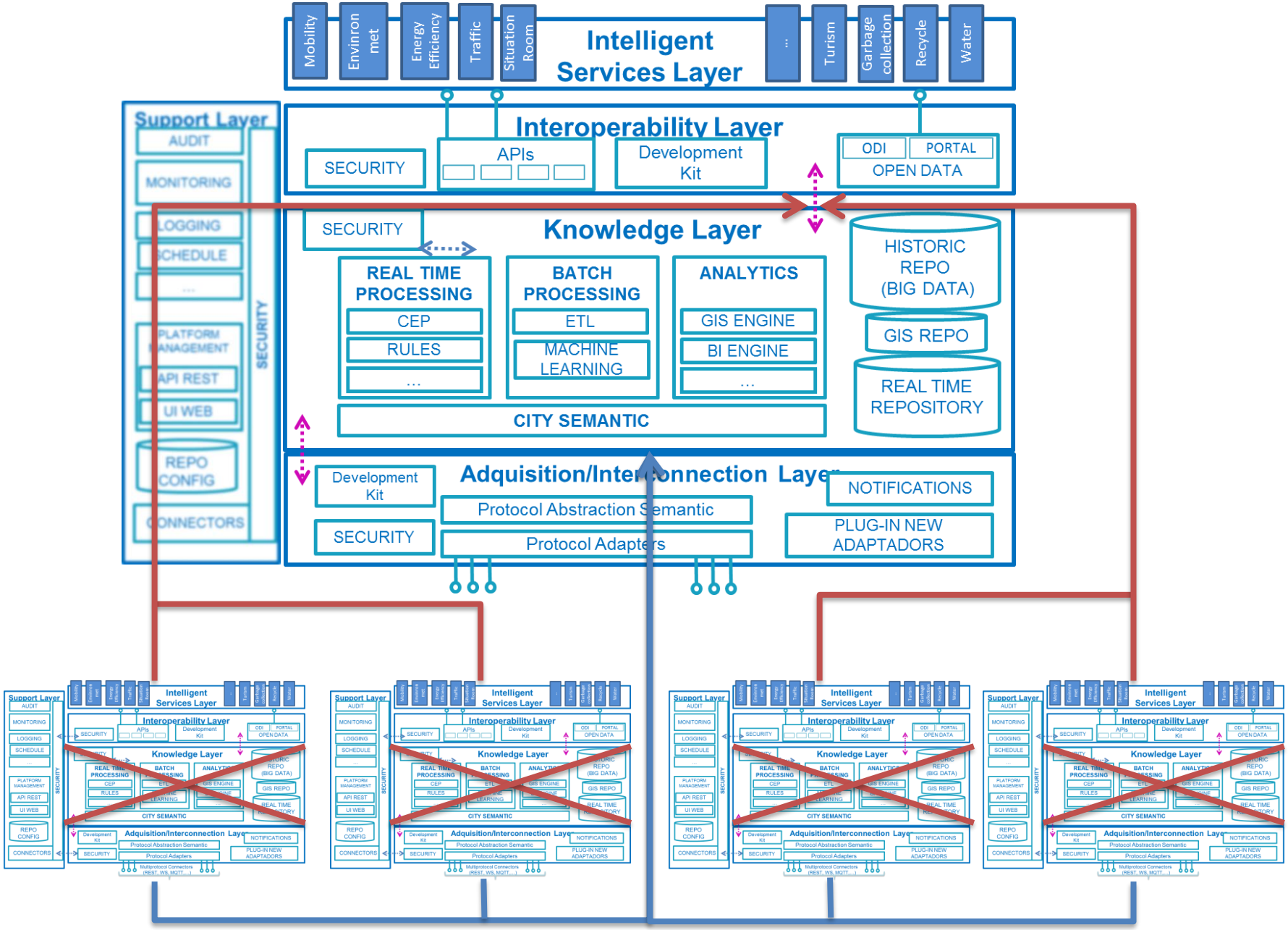

Support Layer
AUDIT
MONITORING
LOGGING
SCHEDULE
...
PLATFORM MANAGEMENT
API REST
UI WEB
REPO CONFIG
CONNECTORS
SECURITY
LDAP
Mobility
Environment
Energy Efficiency
Traffic
Situation Room
...
Turism
Garbage collection
Recycle
Water
Intelligent Services Layer
Interoperability Layer
SECURITY
APIs
Development Kit
ODI
PORTAL
OPEN DATA
Knowledge Layer
REAL TIME PROCESSING
CEP
RULES
BATCH PROCESSING
ETL
MACHINE LEARNING
ANALYTICS
GIS ENGINE
BI ENGINE
CITY SEMANTIC
HISTORIC REPO (BIG DATA)
GIS REPO
REAL TIME REPOSITORY
Adquisition/Interconnection Layer
Development Kit
SECURITY
Protocol Abstraction Semantic
Protocol Adapters
NOTIFICATIONS
PLUG-IN NEW ADAPTADORS
Multiprotocol Connectors (REST, WS, MQTT,...)
Sensor/ Actuators Networks
External IT Systems
External Infrastructures:
- Smart Building
- VAN: Vehic. Area Netw
- BAM: Body Area Netw.
- ....
Social Networks
CITY A
CITY B
API REST
API REST
SMART DESTINATION
City
Tourist
Intelligent Service Management
Interoperatibilty LAYER
Turist Intelligence Core Platform
CONNECTORS
SECURITY
Tourist Information Position included
Social Neworks
Stakeholders

USE CASE: CITY CONECTED TO PORT/AIRPORT

EXTERNAL PLATFORMS



Centralised Platform. Services in each zone.



DATA MODELS

- According to Sematic Rules
- Diagram of entities and attributes.
- Ej **Parking Harmonized Data Models:** **Parking, museum, beach… linked**

- These data models are intended to model entities relevant for parking use cases in smart cities scenarios. When feasible these models reuse types, properties and enumerations fromDATEX II version 2.3. A data dictionary for DATEX II terms can be found at http://datexbrowser.tamtamresearch.com/.
- Nonetheless, these data models are intended to NGSI-based systems and many simplifications has been made with respect to DATEX II version 2.3.
- The main entity types identified are:
- OffStreetParking. An offstreet parking site with explicit entries and exits.
- ParkingAccess. An access point to an off street parking site.
- OnStreetParking. An on street, free entry (but might be metered) parking zone which contains at least one ore more adjacent parking spots.
- ParkingGroup. A group of parking spots. Granularity level can vary. It can be an storey on a parking garage, an specific area belonging to a big parking lot etc or just a group of spots, differentiated for an specific purpose (usage, restrictions, etc.).
- ParkingSpot. An individual, usually monitored, parking spot.

CONCLUSION

IF THE CITY PLATFORMS BECOMES:

OPEN AND STANDARDISED (ACCORDING TO ITU-T Y.4200)

WITH DATAMODELS ACCORDING TO SEMANTIC RULES

GOOD PLANS WITH INTELLIGENCE COULD BE DONE

Thanks for your attention