


# C-DOT-TSDSI Webinar Series

The National Standards for IoT  
Smart Cities Perspective

 5-8 July, 2021

 2:00PM to 4:00PM IST



# C-DOT-TSDSI Webinar Series: The National Standards for IoT – Smart Cities Perspective

Technical Session

oneM2M Release 4 : Preview of new features

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C-DOT

# Highlights of new features

- Action triggering
- Semantic reasoning
- Discovery Based Operations
- Geo query
- Attribute based access control policy

- Primitive profile
- End to End QoS session (3GPP network)
- Network congestion Monitoring (3GPP network)

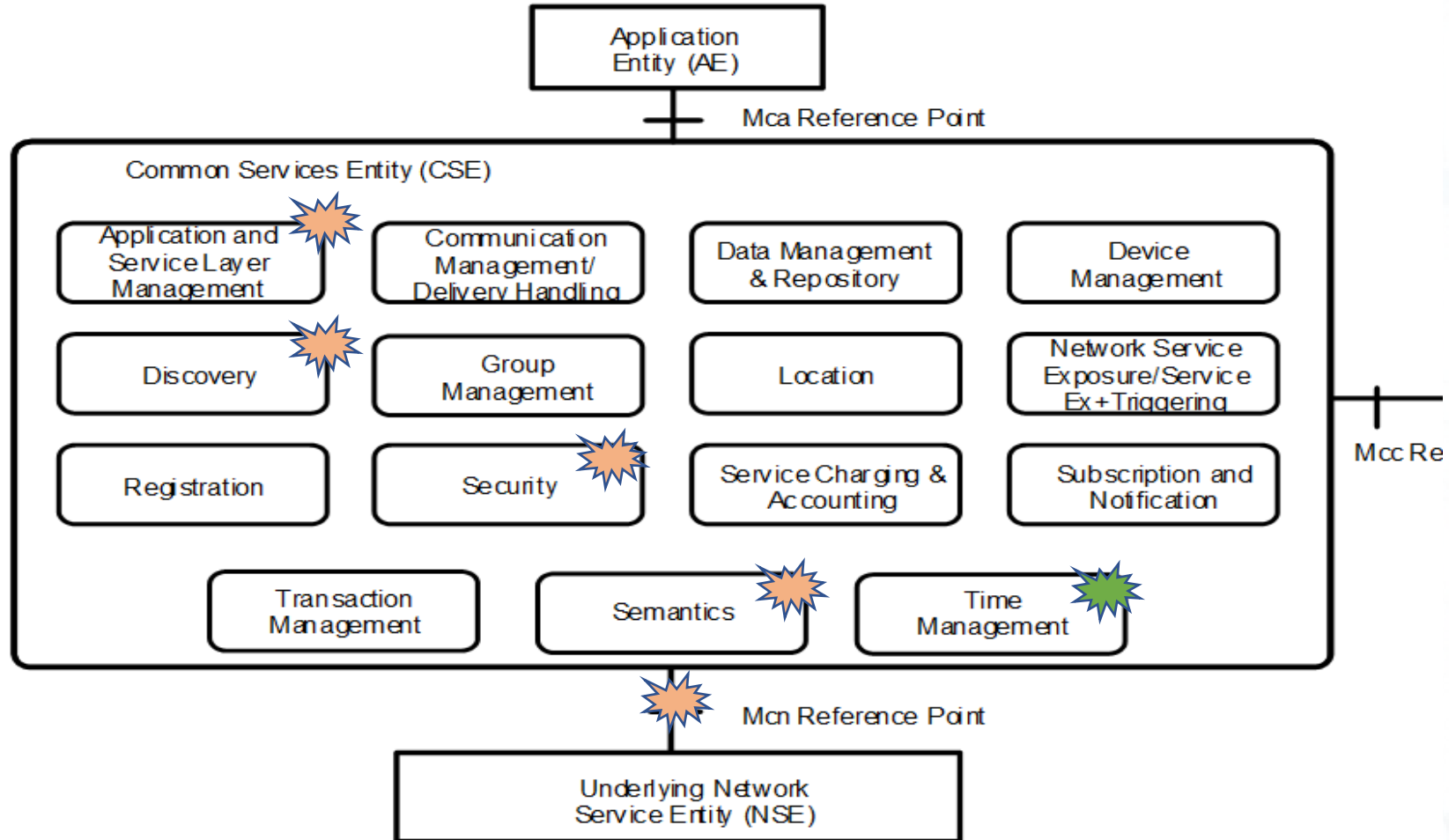
- Time Management
- Software campaigning
- Process Management
- Service subscriber and user
- Resource Synchronization

- Retargeting via Resource mapping rules
- Modbus interworking

# SDS Work items (WI) For Release 4

Work Item	Title	Release 4 Feature	Related TS/TR
WI-0053	Enhancement on semantic Support	Semantic Reasoning	TS-0034/TR-0033
WI-0058	Interworking with 3GPP Networks	End to end quality of session and network monitoring request	TS-0026
WI-0072	Modbus Interworking	Modbus interworking	TS-0040/TR-0043
WI-0076	Lightweight oneM2M services	Primitive profile	TS-0001/TR-0053
WI-0077	Attribute based Access control policy	Attribute based access control policy	TS-0001/TR-0050
WI-0080	Edge and Fog Computing	Resource synchronization, software campaigning	TS-0001/TR-0052
WI-0083	oneM2M Service Subscribers and Users	Service users and profile restrictions	TS-0001/TR-0053
WI-0089	Getting started with oneM2M	High level description of oneM2M features	TR-0057
WI-0093	Action Triggering Enhancements	Process Management	TS-0001/TR-0021/TR-0063

# Common Service Entity (CSE)



New

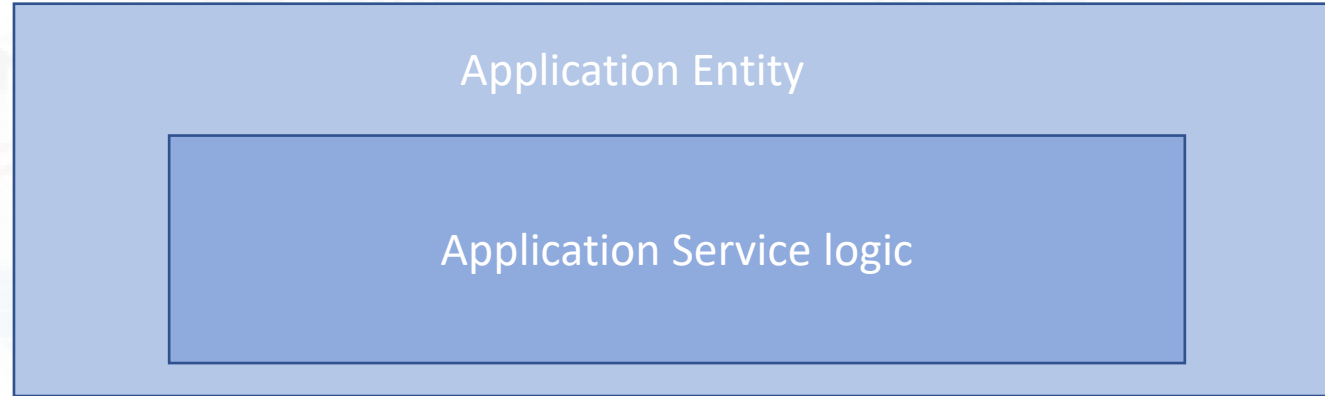


Enhanced

# Application Entity (AE)



actuator AE



Sensor AE



Gateway



Mobile AE



Headend AE

AE resides on the application layer.

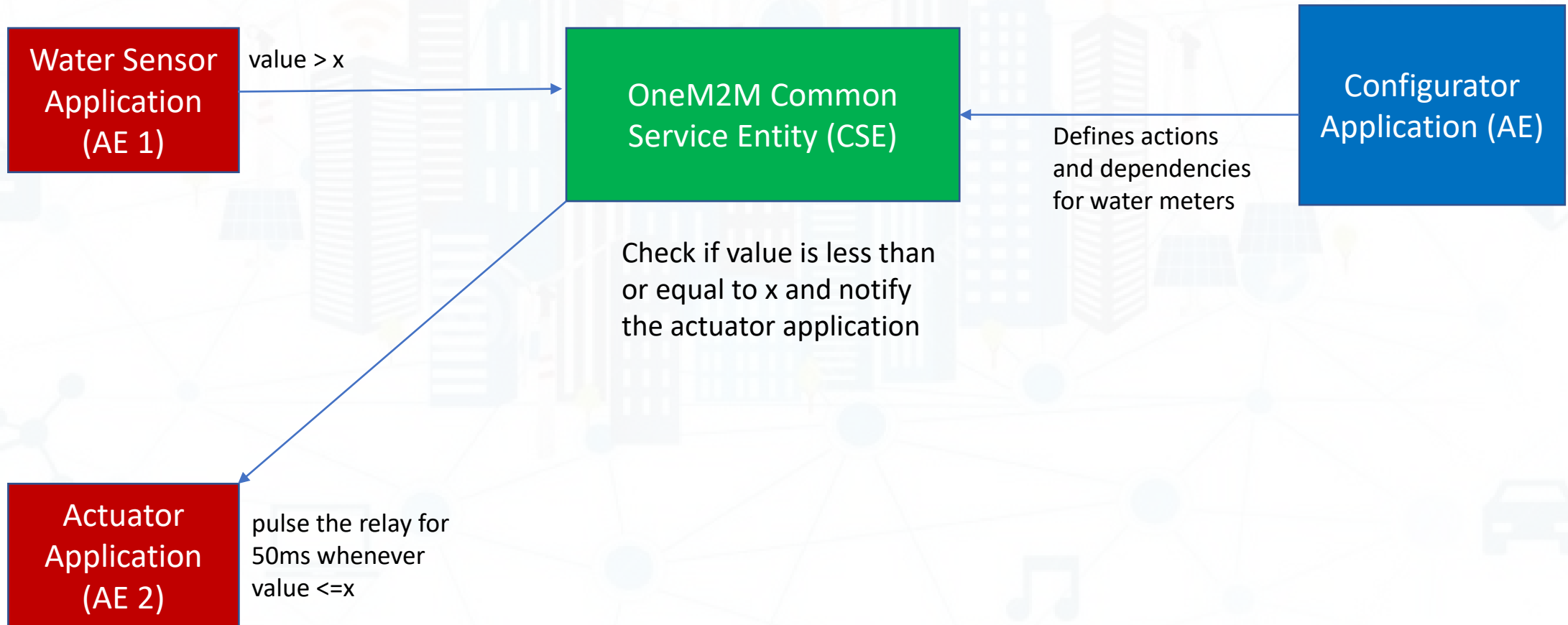
Configurator AE- creates some configurations on CSE

Monitoring/Controlling AE- sends command to control devices or to monitor the details

IPE- Interworking Proxy Entity- enables integration of non-onem2m system into onem2m

# Action Triggering

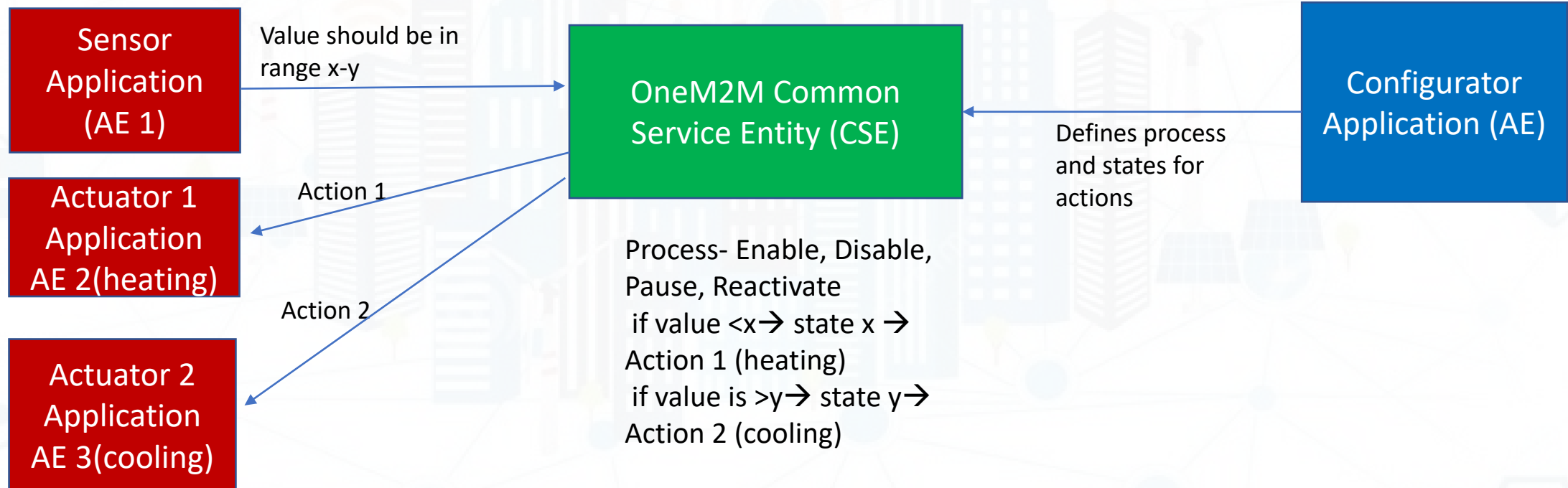
To monitor events and take actions on behalf of application based on preconfigured conditions





# Process Management

Enables management of states and actions



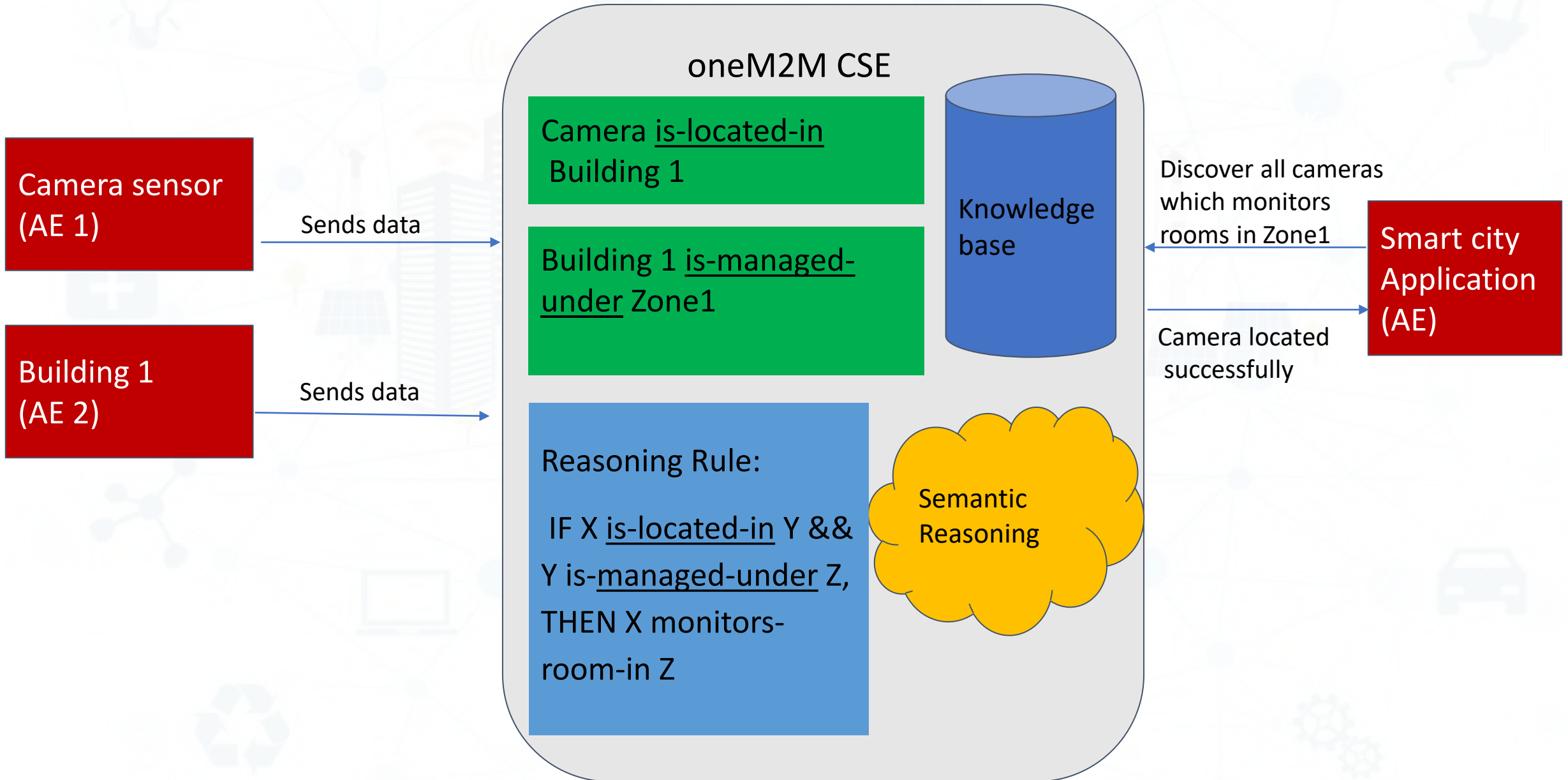


# Semantic Reasoning

**Purpose-**to derive new relations/knowledge that are not explicitly expressed in the existing knowledge/facts.

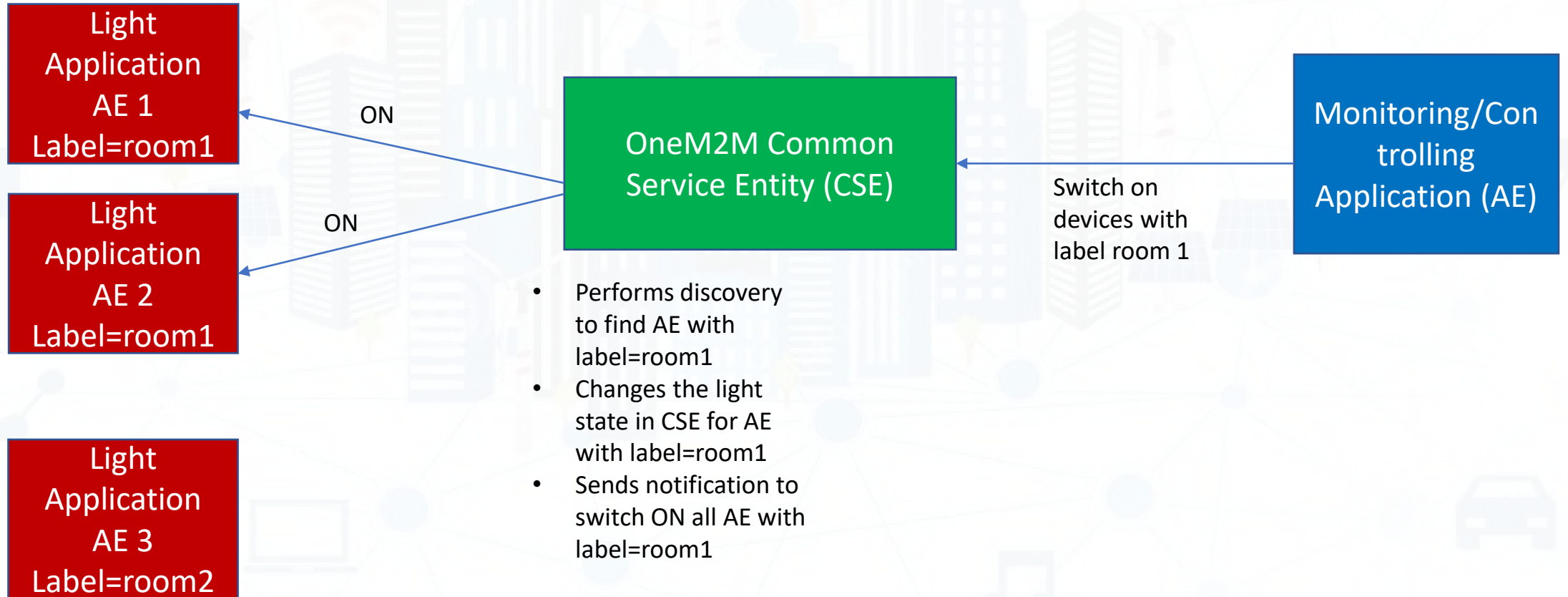
**Feature Description-**A Semantic Reasoning Function (SRF) is defined at Hosting CSE, consisting of reasoning rules set which are applied onto the existing Semantic data (Fact set).

**How-**Configuration of semantic reasoning related data (Reasoning rule set, Fact set) at CSE for different application needs. By leveraging the outputs of semantic reasoning (i.e., reasoning result), the CSE will further produce the optimal result for the semantic operation.



# Discovery Based Operations

To perform a single request to be executed on a discovered set



# Geo Query Feature

**Purpose-** to get the details of applications/sensors location wise

**Feature Description:** The Geo query feature enables oneM2M system to support geometry objects (e.g. Point, Polygon) to represent the geo-location of a M2M Device, M2M Gateway and a Thing

**How-** oneM2M service layer is enabled to store/retrieve latitude, longitude coordinates of various IoT devices.

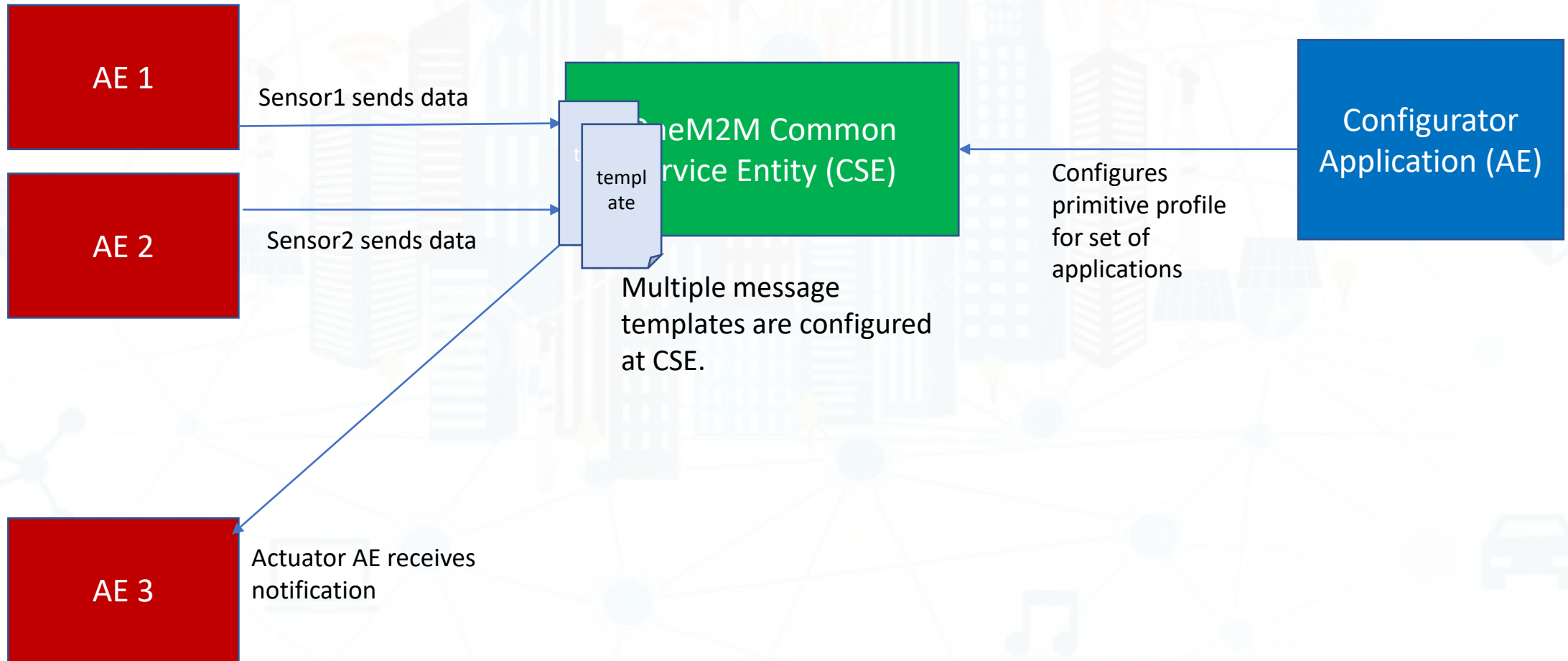
# Primitive Profile Feature

**Purpose-** to reduce the size of messages flowing back-and-forth between an Originator (e.g. AE) and a CSE.

**Feature Description:** defines a message template to be applied to requests and responses that CSE receives or generates.

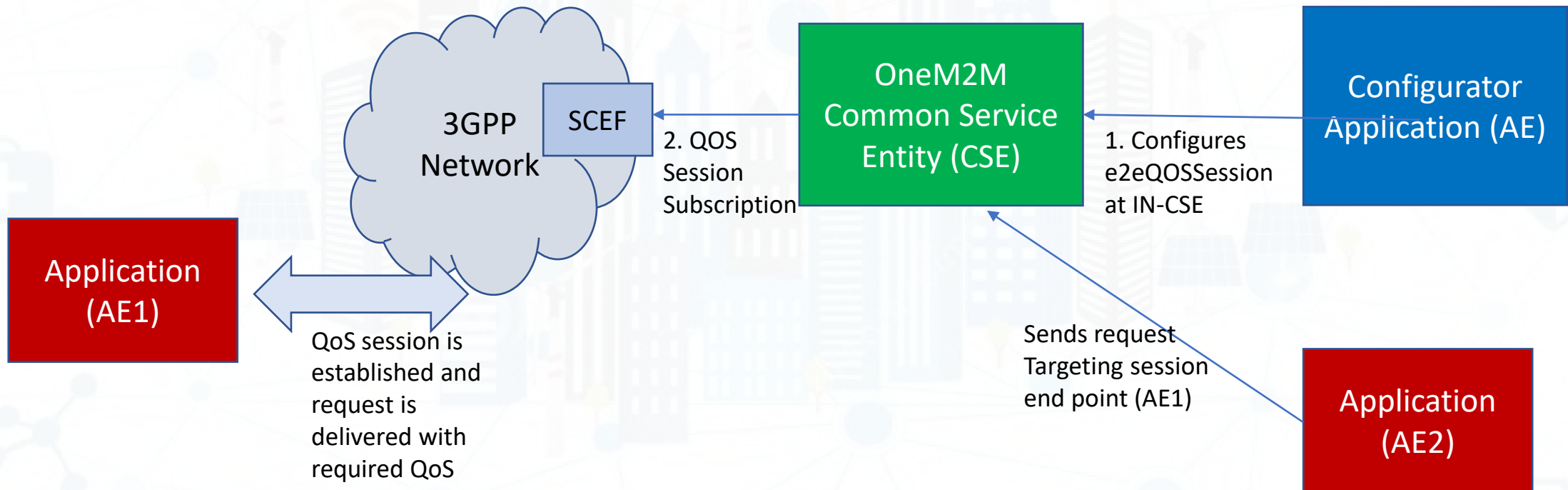
**How-** Configuration of message template at CSE for a set of IoT devices and modify the message to/from applications as per this template

# Primitive Profile Feature



# End-to-End QoS session (3GPP Interworking)

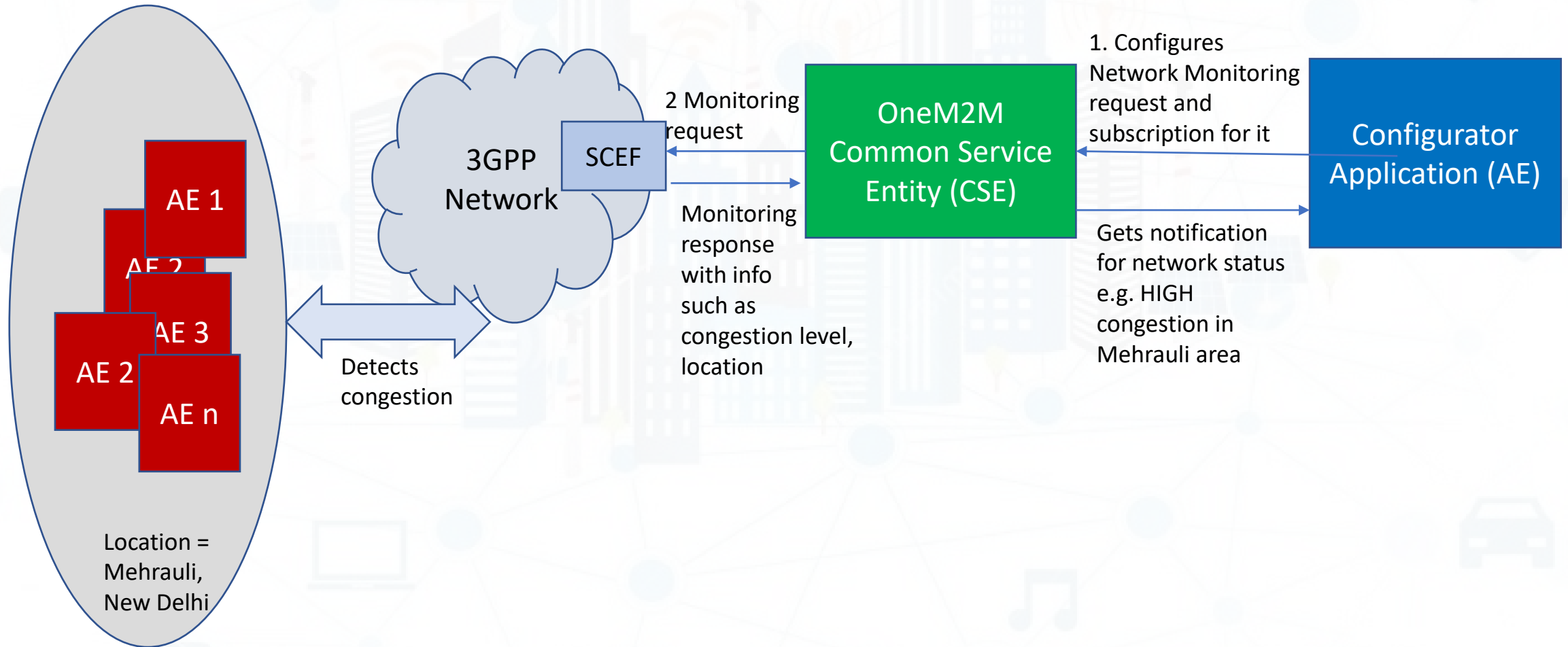
To establish a data session with a specific QoS and priority handling.





# Network Congestion Monitoring (3GPP IWK)

## To request network status information from an Underlying Network



# Time Management

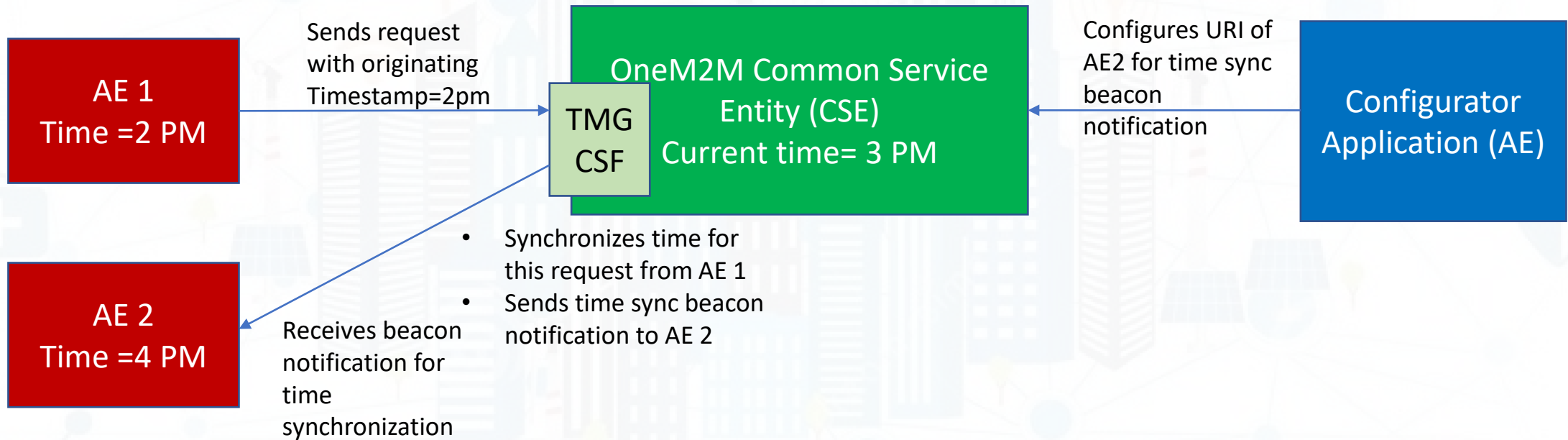
**Purpose-** Allows time synchronization with the Hosting CSE absence of which may lead to request rejection and storage of inconsistent data

**Feature Description** — Time synchronization beacon is configured at the CSE with the details notification targets who want to have time synchronization with the CSE.

**How-** achieved through beacon notifications

Hosting CSE sends beacon notifications periodically based on an interval or on loss of synchronization (calculated based on predefined threshold value).

# Time Management



# Software Campaigning

**Purpose-** Provides policies and rules for the management of software by a Hosting CSE

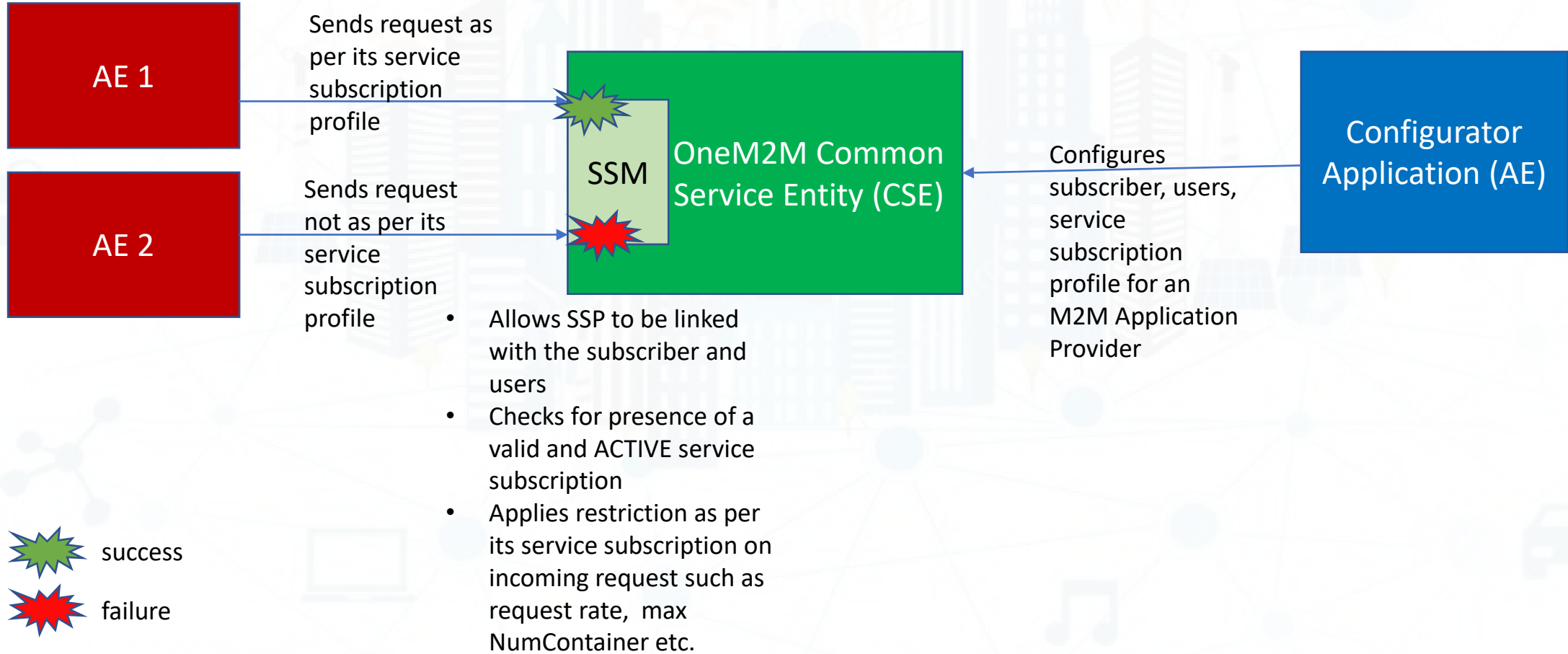
**Feature Description-** Triggers a CSE to install, uninstall, activate or deactivate software on IoT devices.

**How-** An AE can configure software campaign on a CSE to instruct the CSE to manage the software versions on field devices on the AE's behalf.

# Software Campaigning

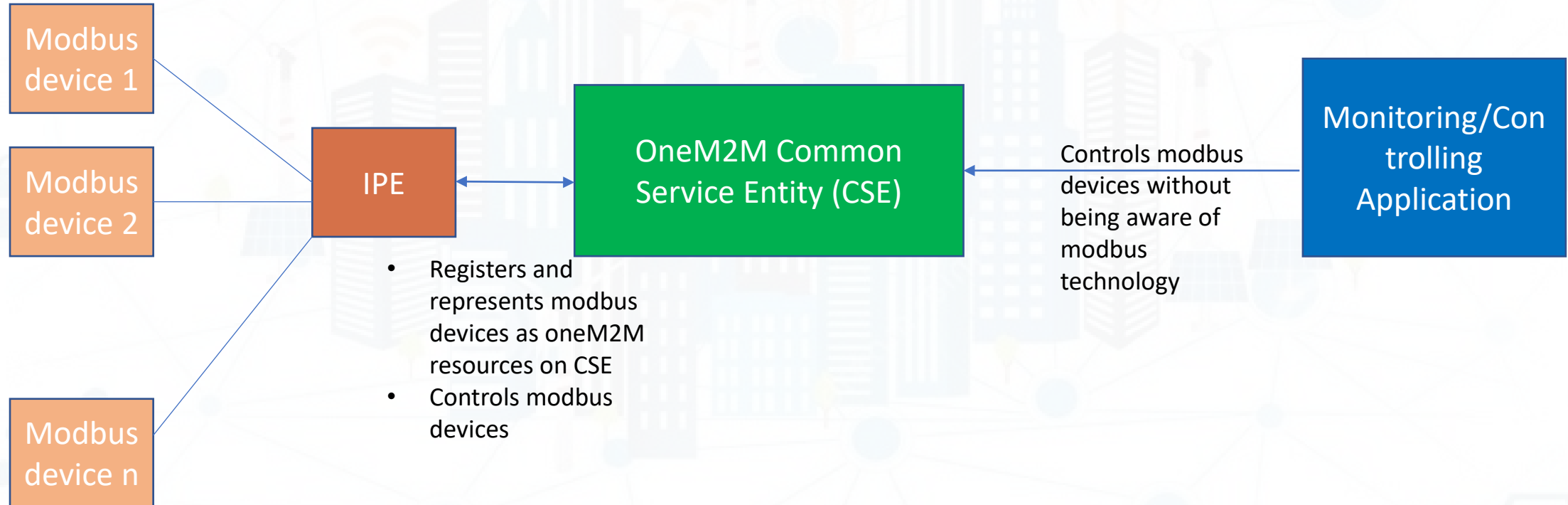


# Service subscriber user and profile restrictions



# Modbus interworking

Allows Modbus devices to interwork with oneM2M system and represented as oneM2M devices





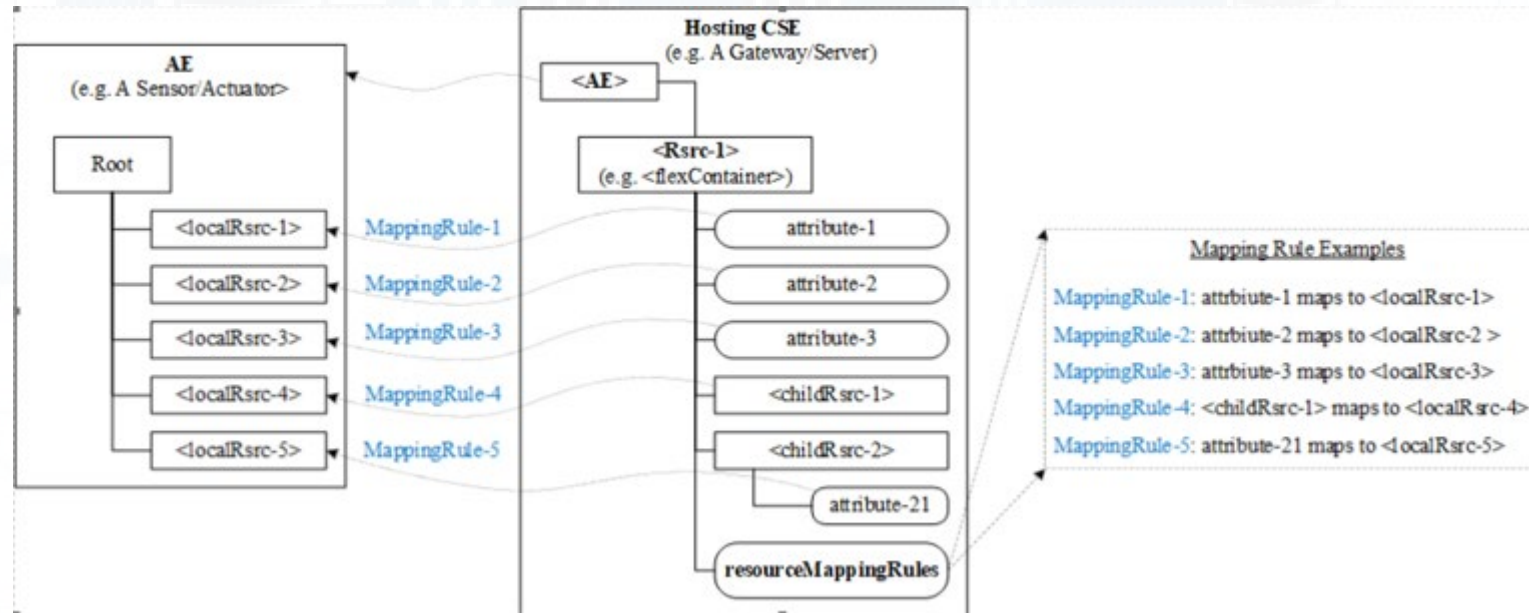
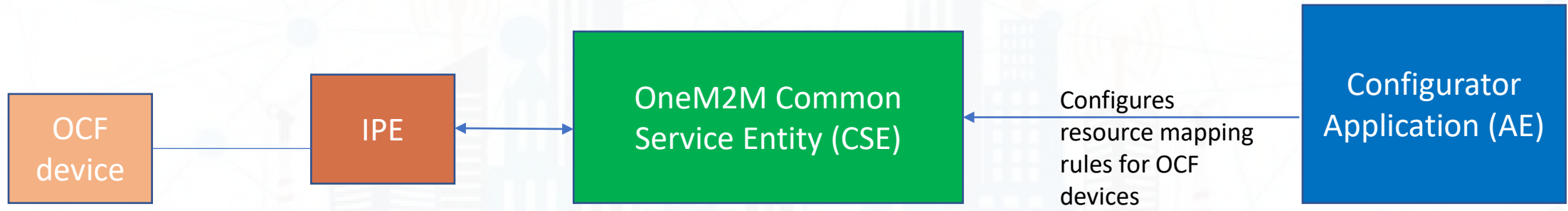
# Retargeting via resource mapping rules

**Purpose-** to allow a Hosting CSE to retarget oneM2M CRUD requests towards resources hosted by AEs.

**Feature Description-** many existing technologies such as OCF, LWM2M, ZigBee Smart Energy 2.0, etc. are RESTful in nature and are based on the premise that the devices themselves host their own local resources which can be targeted by CRUD requests. Resource mapping rule will allowing mapping of these resources in CSE and retargeting of CRUD requests to them.

**How-** It is achieved by defining the mapping rules and targeting procedures in CSE.

# Retargeting via resource mapping rules



Thank You