



Deployment Experience in India using oneM2M

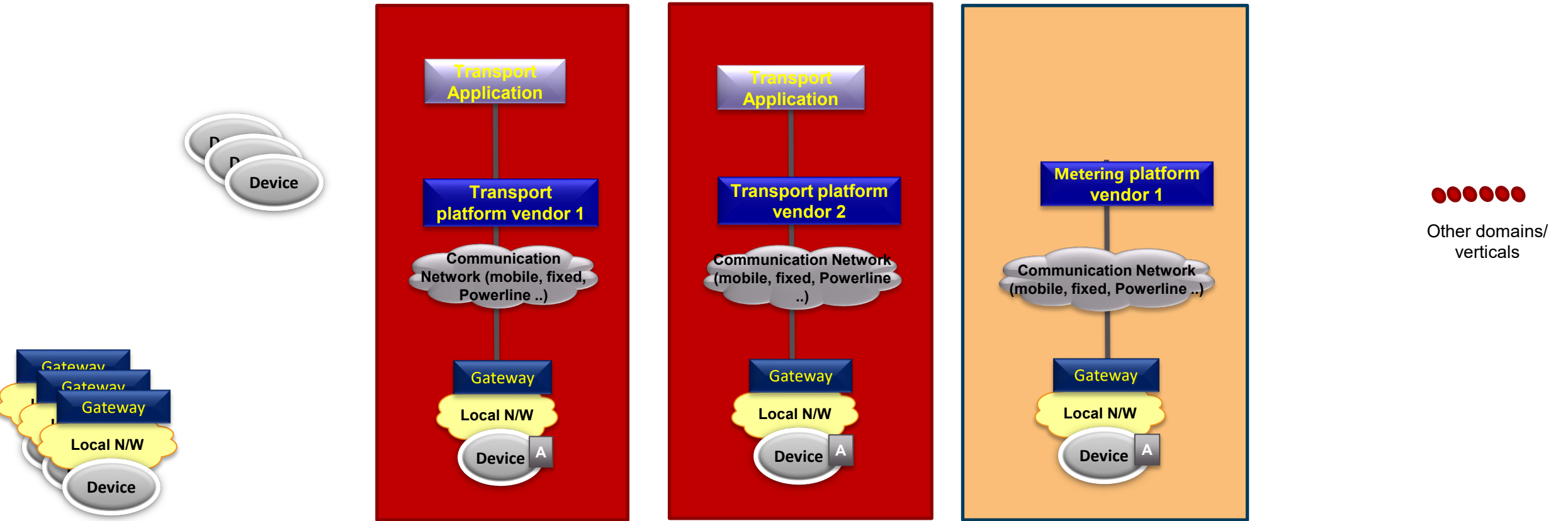
By Poornima Shandilya, Team Leader, C-DOT

Deployment Use cases

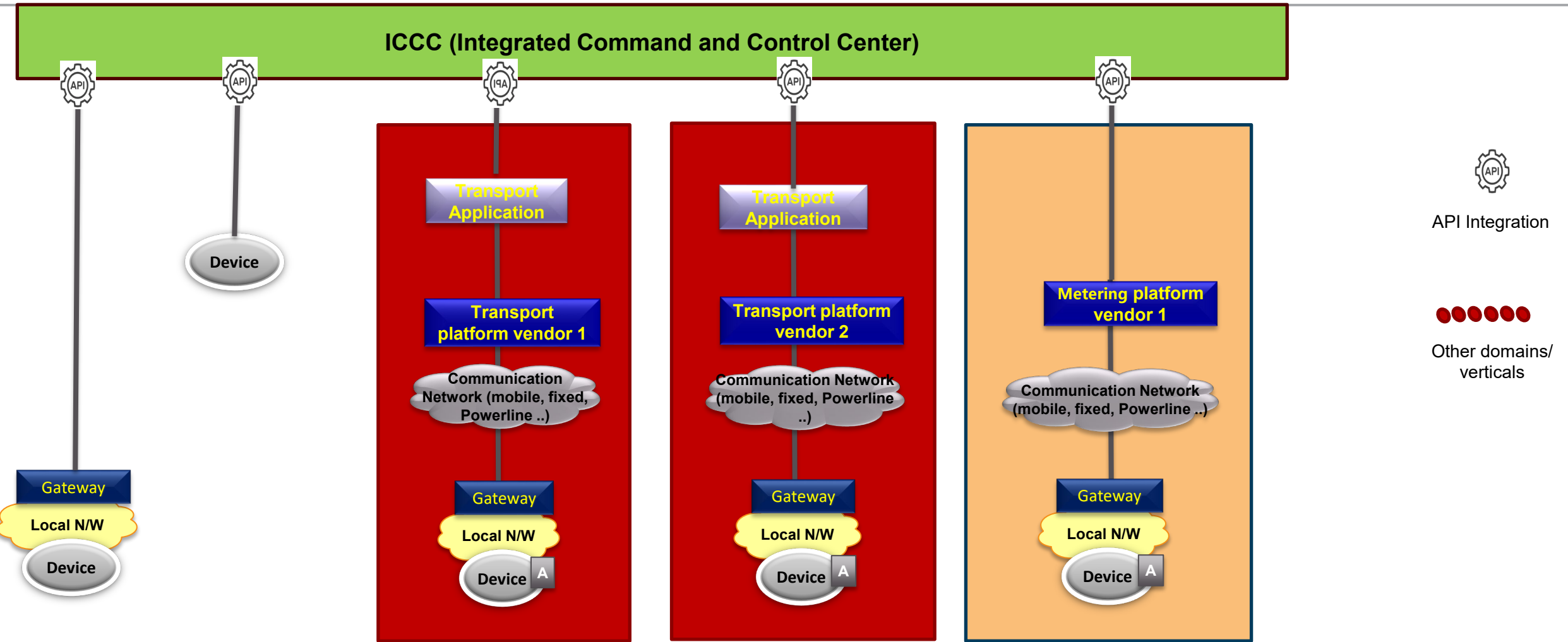
- Smart City Use Cases
- Railway Use cases
- Other use cases integrated on COI (Center of Innovation)

Present IoT/M2M Deployment Approach in Smart cities

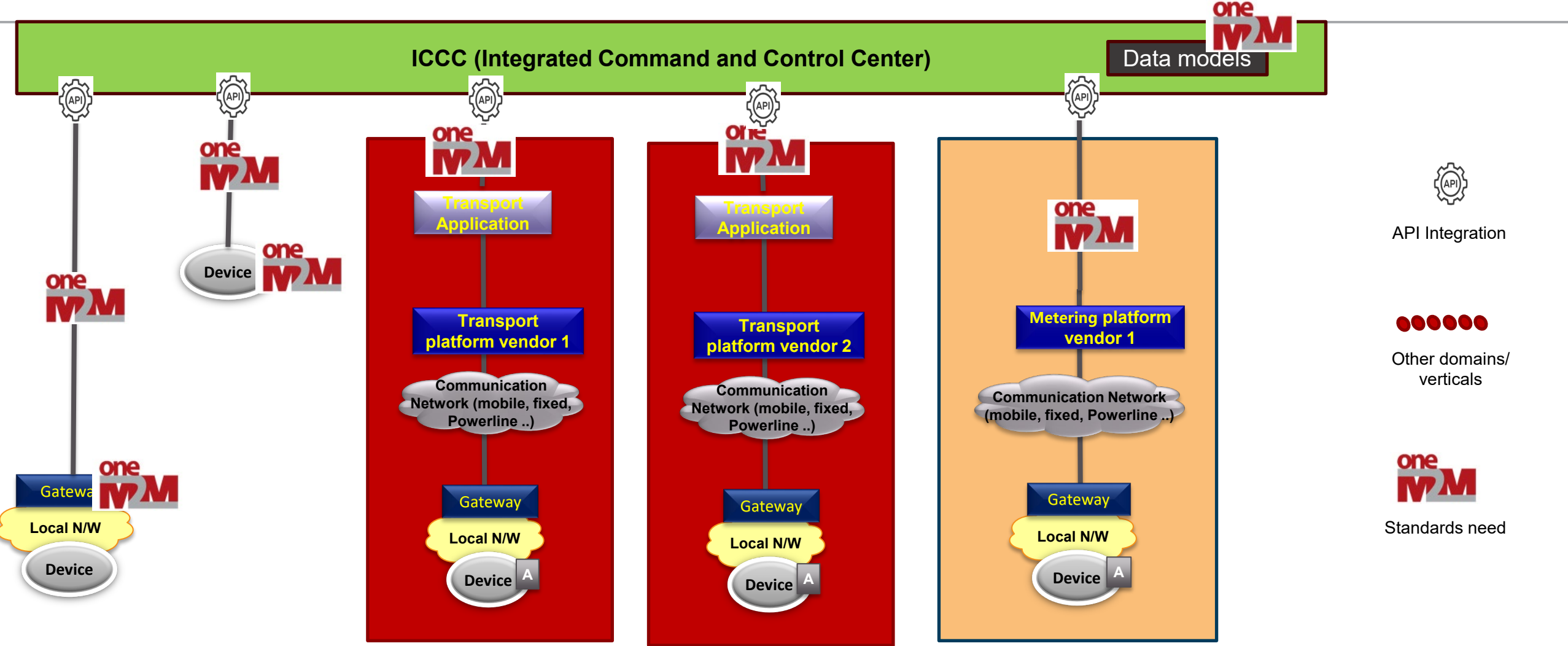
ICCC (Integrated Command and Control Center)



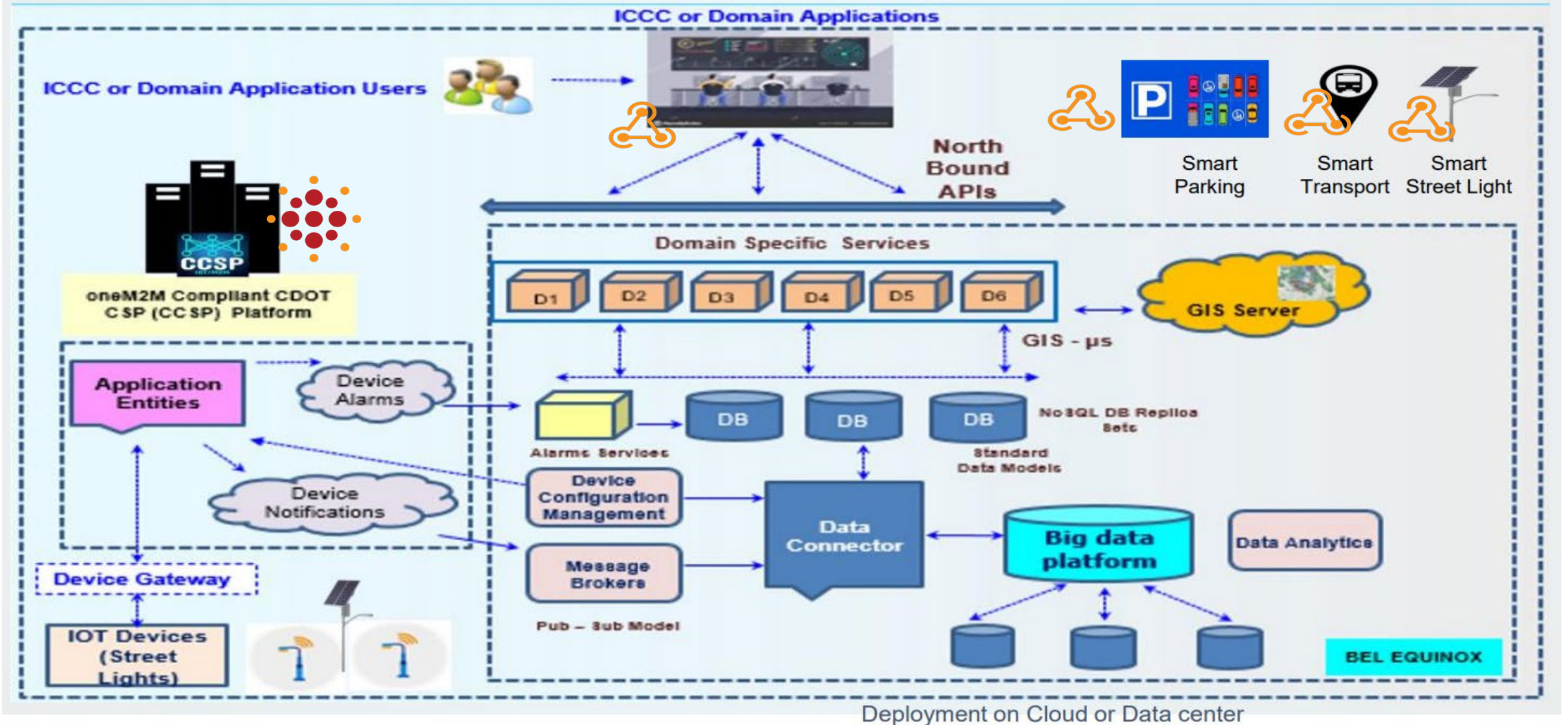
Present IoT/M2M Deployment Approach in Smart cities



Present IoT/M2M Deployment standardization need

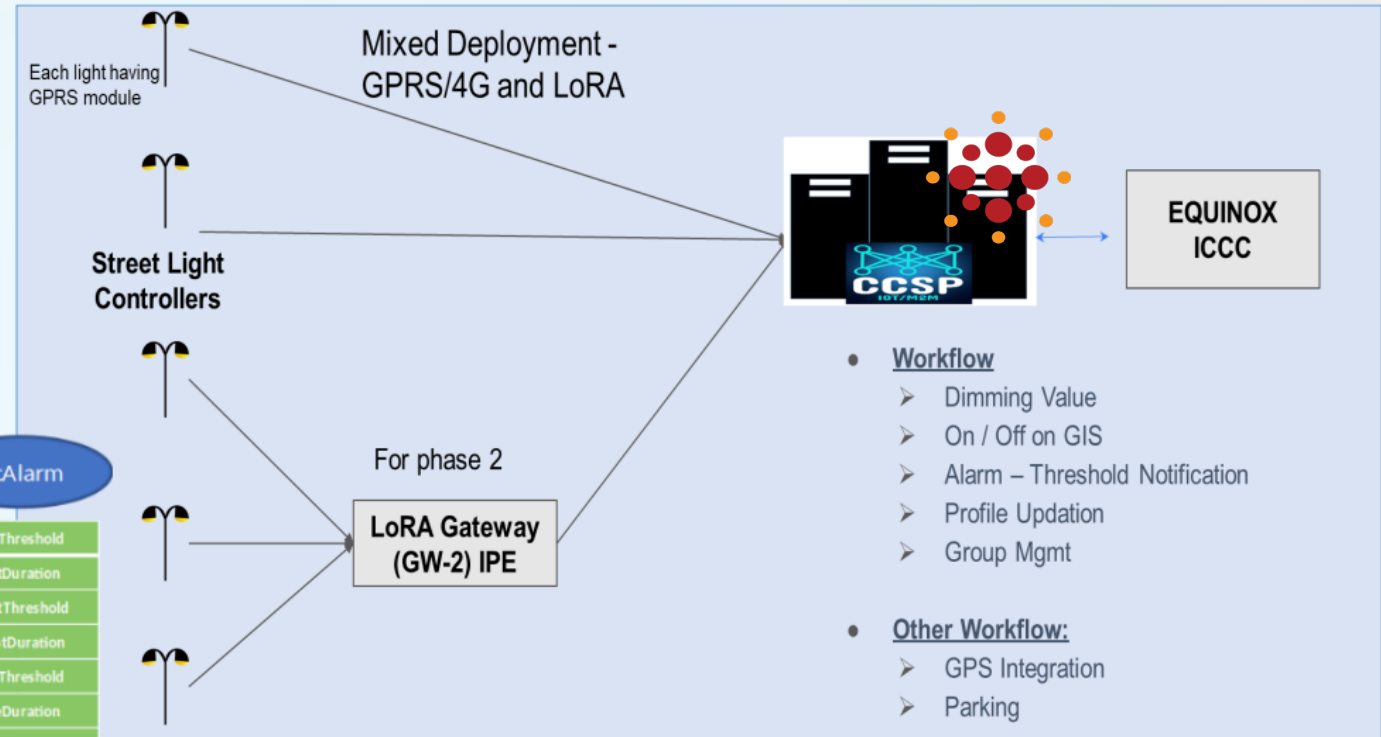
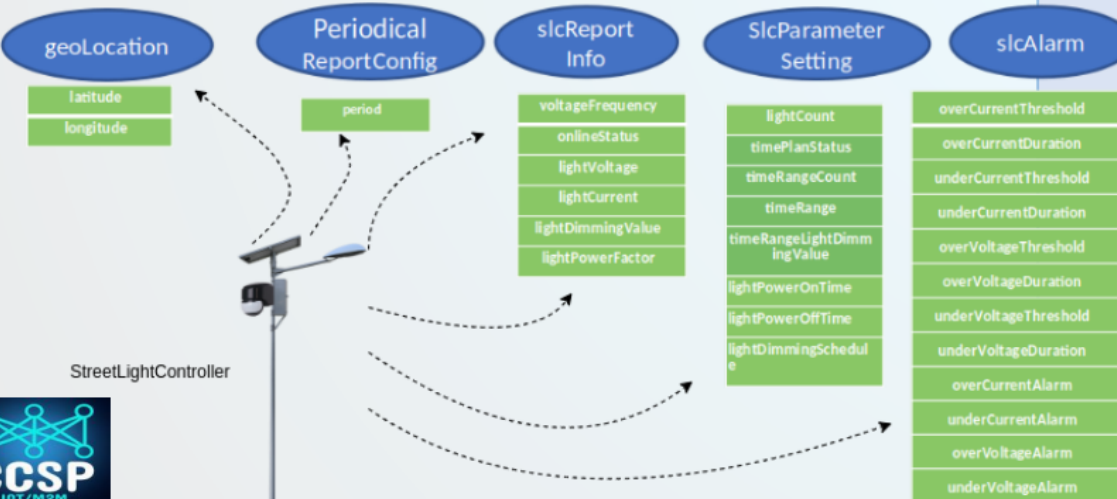


PoC of Smart City Use cases with BEL



Smart Street light Poc using oneM2M deviceStreetController data model

- Secure communication between street light devices and CCSP using certificate based security
- Secure communication between CCSP and Equinox using certificate based security
- Device Registration
- Authorization
- Device Discovery
- Flex containers: Data Mgmt & Repository
- Subscription & Notification
- Group Management



Smart Parking



Smart Transport



Smart Street Light

Smart Street light PoC using oneM2M deviceStreetController data model

JAMMU SMART CITY - EQUINOX

Dashboard | Geographic | Assets | Reports | Settings | Users | Complaints | Admin

Map Display

TOTAL LIGHTS: 6 | ON LIGHTS: 4 | OFF LIGHTS: 1 | NOT WORKING: 1

Street Light Control

Device Id	Area	Current(A)	Voltage(V)	PowerFactor	Dim Value	Power Consumption	Status	TimeStamp
SLC_GPRS	BEL BSTC	0	235.25	1	0	0.00	🔌	Jul 05 2023, 06:29 PM
SLC_16504	BEL BSTC	0.571	63	0.95	50	34.17	💡	Jun 24 2023, 01:11 PM
SLC_16503	BEL BSTC	0.659	83	0.95	50	51.96	⚠️	Jun 24 2023, 01:11 PM
SLC_16502	Jalahalli	0.7	106	0.95	50	70.49	⚠️	Jun 24 2023, 03:44 PM
SLC_16501	Jalahalli	0.7	106	0.95	50	70.49	⚠️	Jun 24 2023, 03:44 PM
SLC_16500							💡	Jun 24 2023, 03:44 PM

Alerts Generation Module

Alert Id : 2023/06/24/00000276
Description : SLC Threshold reached for deviceIN-CSE/SLC-AE-1/SLC_16500,under voltage

Buttons: Ignore, Create Incident

Real Time Control

Light Active Power: 75 | Light Dimming Value: 50
Light Current: 0 | Voltage Frequency: 0
Light Voltage: 0 | Light Power Factor: 0.95
Online: ● | Switch Status: ●

Apply



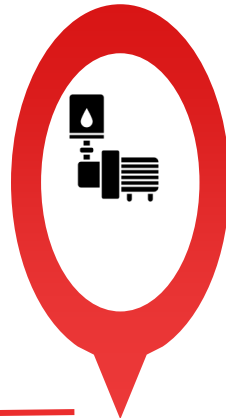
Deployment in Indian Railways

Railway use cases



Lift / Escalator Monitoring

- IOT devices to be installed at lift/escalators of Stations / Office Buildings
- Monitoring of status (on/off), operation duration, health



Water Pump Management

- Water pumps, overhead tanks, underground reservoirs, water flow
- Monitoring and control
- Quick watering



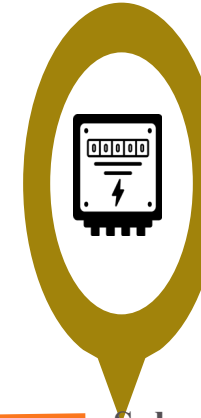
Outdoor Lighting Management

- Feeders of High mast / colony lighting
- Monitoring and control



30%-70% Lighting at Station platforms

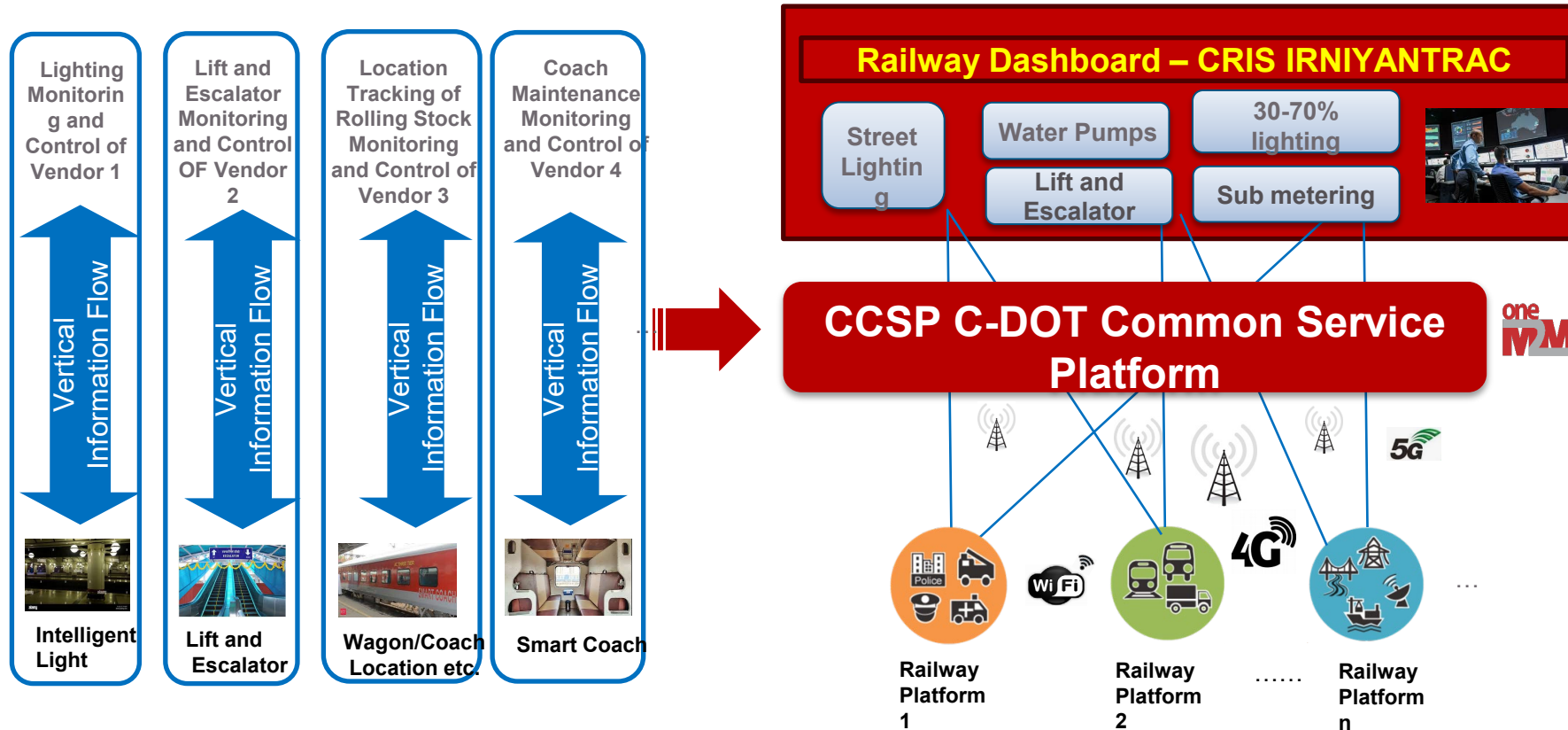
- Platform Feeders Station monitoring of for
- Monitoring and Control through NTES, operator



Sub Metering

- Feeders of Sub Stations of buildings with 30 kW or more connected load
- Monitoring and control

With oneM2M



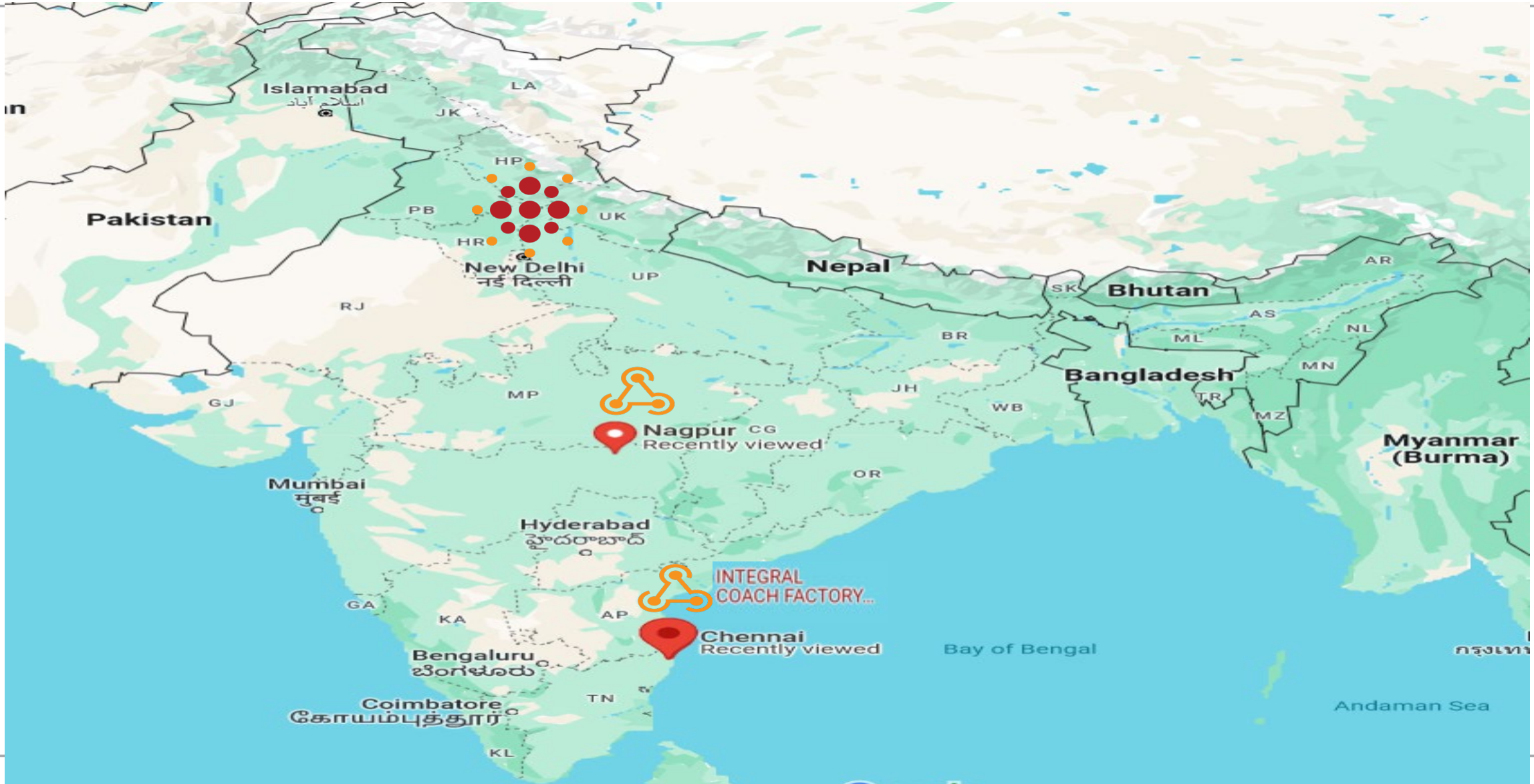
Deployment Strategy

- All the use cases were studied
- Existing data models were studied.
- New common data model dictionary was defined
- Resource tree structure was defined
- Multiple testing sessions with multiple device vendors with actual devices were done to finalized the flows of registration, monitoring and controlling.
- Flows and data models were published in tenders to ensure use of standard approach for onboarding of multiple vendors.

Key Features for this deployment:

- Vendor onboarding
- Device onboarding
- Firmware upgrades
- Reports
- Data validation
- Security
- Authorization

Railway oneM2M based Deployment Pilot locations



Centre of Innovation (COI)



Centre of Innovation for IoT/M2M
Excellence Through Collaboration



सी-डॉट
C-DOT

Centre
of
Innovation
for
IoT/M2M

Engagement for
Indigenous IoT/M2M Solutions
based on
National Standards
(oneM2M)

Onboarding on COI

← ↻ 🔒 https://coi.cdote.in/home



HOME ABOUT US ▾ COI APPLICATIONS ONEM2M TUTORIALS ▾ FAQs CONTACT US SIGN IN

Easy Onboarding of M2M Application

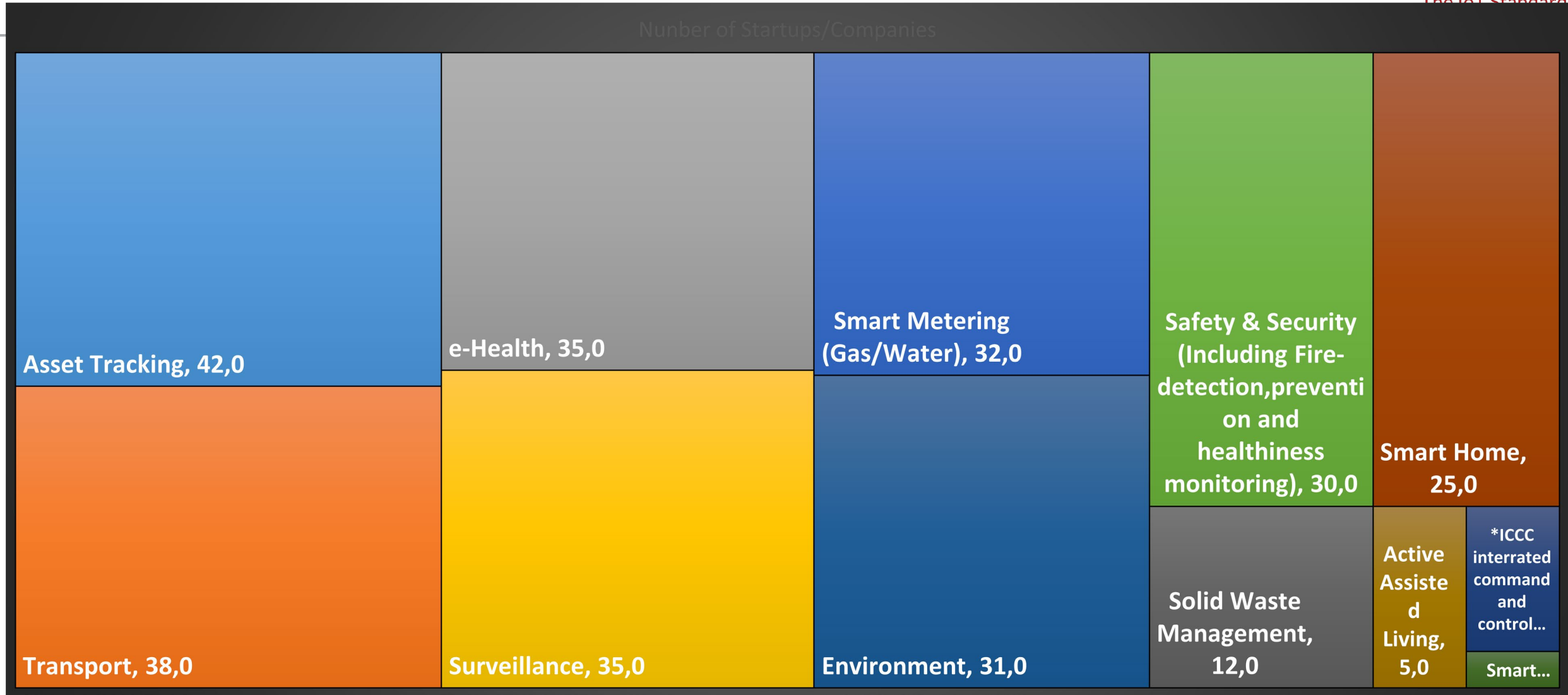
On board on CCSP (A oneM2M release 3 standard based M2M/IoT platform) in 3 simple steps:

Sign Up => Sign In => Download Configuration
And your oneM2M applications are ready to go!

Watch Tutorial For Registration

[Register For Collaboration](#)

Areas of Applications registered on COI



Total Registration =105

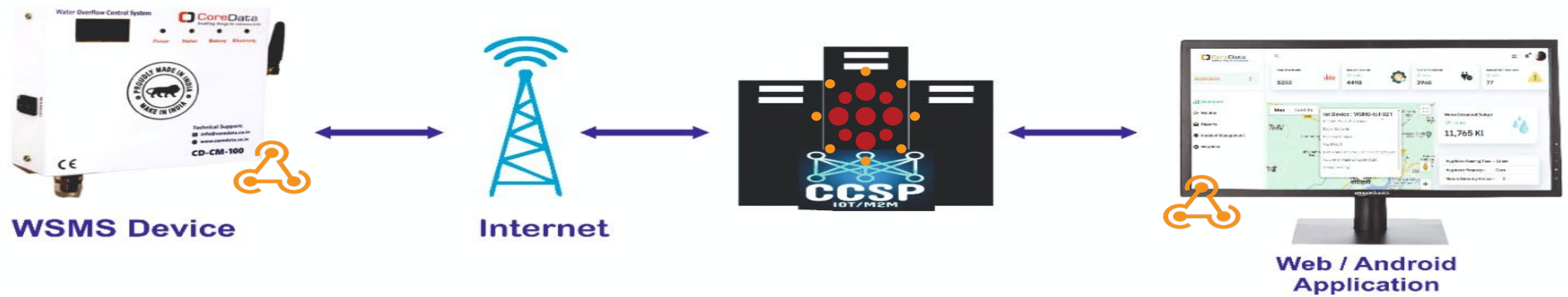
IoT/M2M Application from various Application Provider onboarded on CCSP



PoC for water monitoring for Rural Areas



IoT Enabled Water Supply Monitoring & Control System



Real Time Monitoring



Geo - Tagging



Additional Sensor



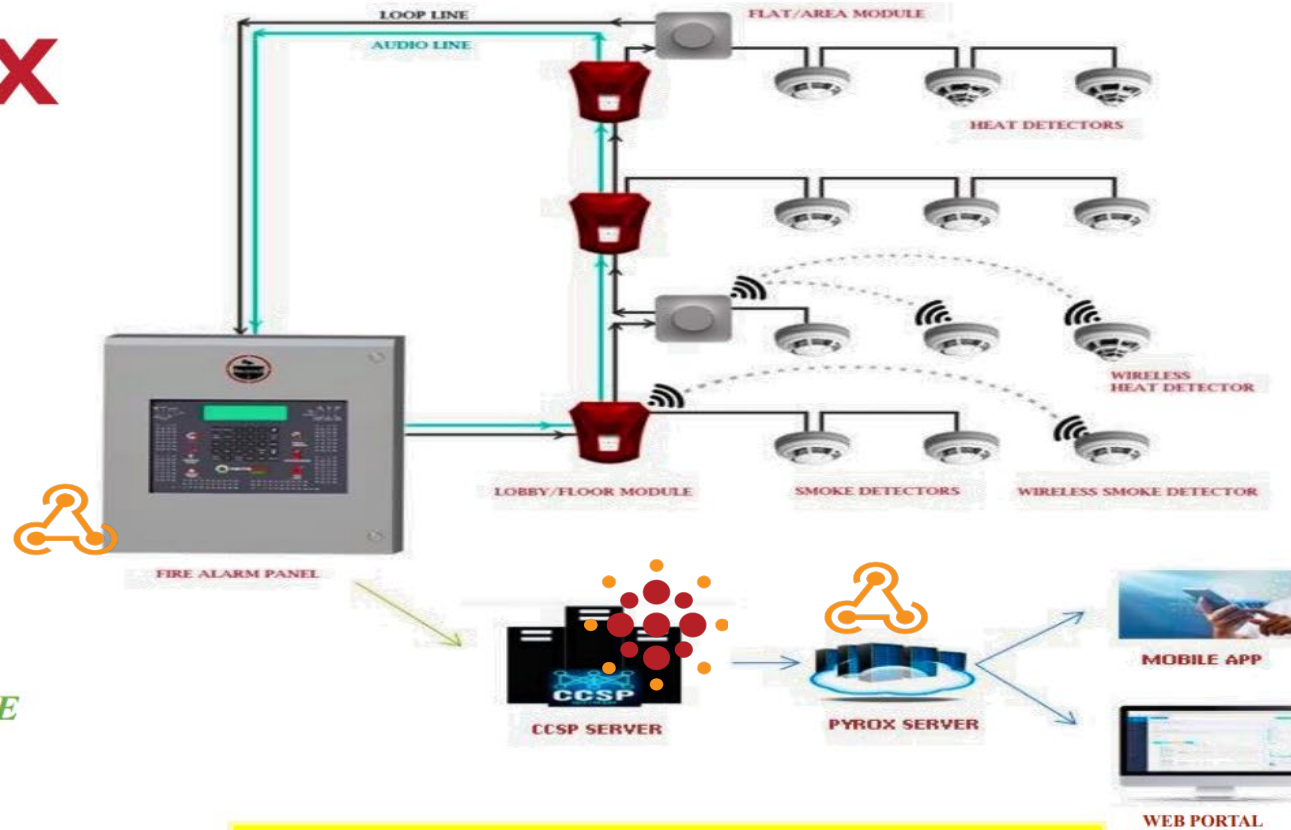
Ensure Drinking Water



Automated Alert (Email/SMS)



oneM2M compliant Fire Safety solution



HIGH TIME TO BE
"FIRE READY"



oneM2M COMPLIANT
FIRE DETECTION AND
PROTECTION SYSTEM
In Integration With CCSP





Thank You

