Deployment Experience in India using oneM2M

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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

ICCC (Integrated Command and Control Center)

- Transport Application
  - Transport platform vendor 1
    - Communication Network (mobile, fixed, Powerline ..)
  - Transport platform vendor 2
    - Communication Network (mobile, fixed, Powerline ..)

- Metering platform vendor 1
  - Communication Network (mobile, fixed, Powerline ..)

Local N/W
Device
Gateway

Other domains/verticals

API Integration
Present IoT/M2M Deployment standardization need

ICCC (Integrated Command and Control Center)

API Integration

Other domains/verticals

Standards 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

![Diagram showing Smart Street Light POC using oneM2M deviceStreetController data model]

- Workflow
  - Dimming Value
  - On / Off on GIS
  - Alarm – Threshold Notification
  - Profile Update
  - Group Mgmt

- Other Workflow:
  - GPS Integration
  - Parking
Smart Street light PoC using oneM2M deviceStreetController data model
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 of Station for monitoring
- 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

- Railway Dashboard – CRIS IRNIYANTRAC
- CCSP C-DOT Common Service Platform

- Street Lighting
- Water Pumps
- 30-70% lighting
- Lift and Escalator
- Sub metering

Vertical Information Flow:
- Intelligent Light
- Lift and Escalator
- Wagon/Coach Location etc.
- Smart Coach
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)

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

- Asset Tracking, 42,0
- e-Health, 35,0
- Smart Metering (Gas/Water), 32,0
- Safety & Security (Including Fire-detection, prevention and healthiness monitoring), 30,0
- Smart Home, 25,0
- Transport, 38,0
- Surveillance, 35,0
- Environment, 31,0
- Solid Waste Management, 12,0
- Active Assisted Living, 5,0

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

- WSMS Device
- Internet
- Web / Android Application
- Real Time Monitoring
- Geo-Tagging
- Additional Sensor
- Ensure Drinking Water
- Automated Alert (Email/SMS)

CoreData
Enabling things to communicate

C-DOT
oneM2M compliant Fire Safety solution

HIGH TIME TO BE “FIRE READY”

oneM2M COMPLIANT FIRE DETECTION AND PROTECTION SYSTEM In Integration With CCSP
Thank You