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Indian Smart Cities

Approach to address Data Management, Enrichment and Security Challenges

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Agenda

- ❑ What is happening in Indian smart cities
- ❑ Challenges in the current approach
- ❑ Government of India initiatives
- ❑ Why standardization
- ❑ Next steps and collaborations

What is happening in Indian smart cities

1

City Selection

Year	2015		2016		2017		
	20	+	40	+	40	=	100 Cities

At Present

Integrated Command and Control Centres are operational in

15 cities

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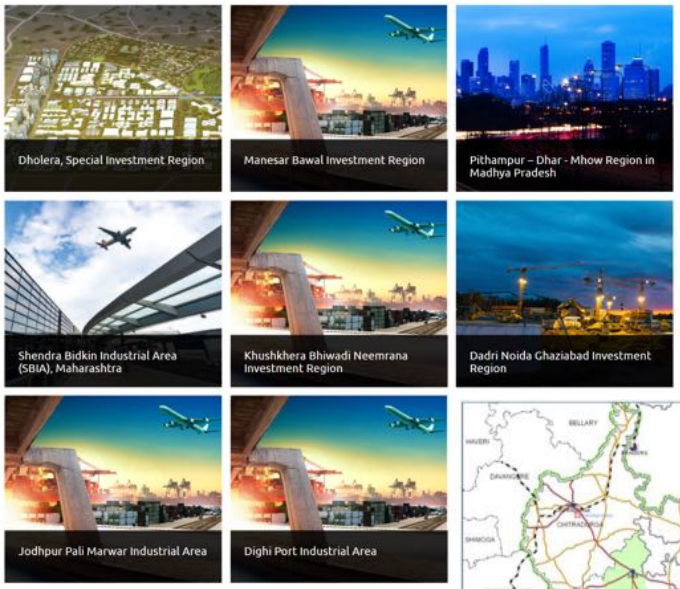
What is happening in Indian smart cities

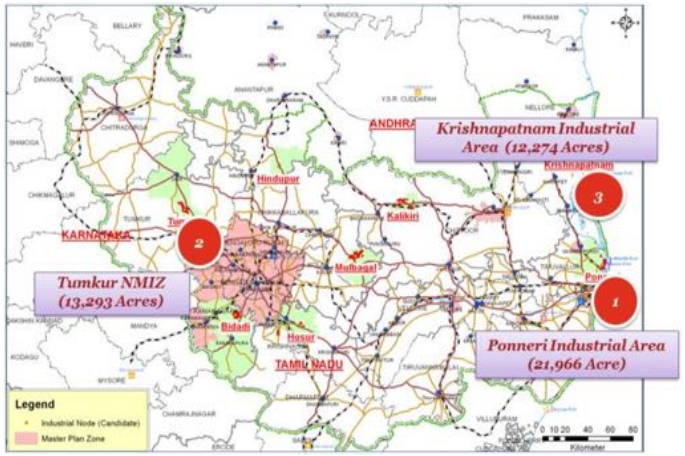
2

Delhi - Mumbai Industrial Corridor (DMIC)



DMICDC

FOUR PROJECTS ARE UNDER CONSTRUCTION



Chennai - Bengaluru Indusrial Corridor (CBIC)

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…projected data growth in Indian cities

In next 5 years…

8 – 10 Billion Communication Modules

10 – 50 Million Gateways

250 Million Smart Electricity Meters

100 Million Smart Streetlight Comm. Modules

50 Million Smart Building Sensors

Smart Sensors Growth Ratio of 1:100 to 1:500

Challenges in the adoption of data driven approaches

1

- Implementation blueprints are not standardized
  - Reuse of modules and hence cost sharing and learning is reduced
- Value of Data is not fully realized – so **data empowerment is missing**
- Interfaces and data formats are not standardized
  - Extensions and additions can only be done by implementation vendors
  - Inhibits emergence of a 3rd party solution ecosystem
  - Inhibits emergence of point solution providers and technicians, as problems cannot be easily unbundled
  - Prevents economies of scale for solutions as they are not portable across cities
  - Inhibits emergence of a smart cities applications ecosystem
  - Inhibits easy adoption of latest technological advances for e.g. in AI and ML

Present-day approach

Vertical Integration
of
Systems and Sub-Systems (to certain extent)

- Vertical and Horizontal integration data sharing enables new applications which in-trun serve the citizens beyond the present day government services.
- Edge device and computing will resolve the issues faster and deliver the outcomes promptly

GoI initiatives to address the data management challenges

1

Structured data available in open format and open license for public access and use

Ministry of Electronics and Information Technology
Government of India

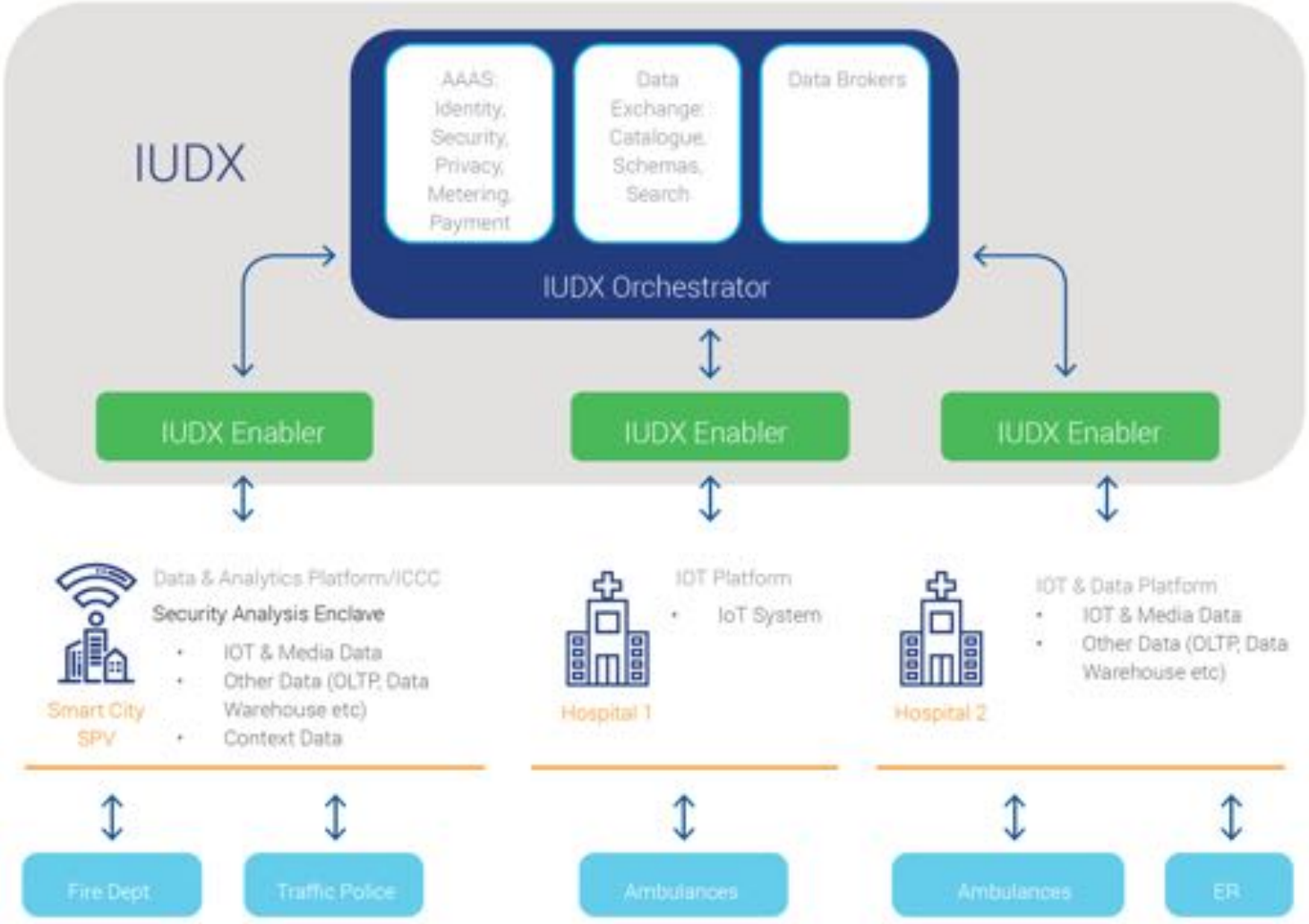
Digital India
Power To Empower

data.gov.in
Open Government Data (OGD) Platform India

Open Data License
National Data Sharing and Accessibility Policy (NDSAP)

GoI initiatives to address the data management challenges

2



- India Urban Data Exchange (IUDX)
  An open platform
- IUDX will unlock Data driven Governance & Innovation
- Simplified, single point of access mobile application
- Data from multiple and diverse data hosts to perform complex analytics

GoI initiatives to address the data management challenges

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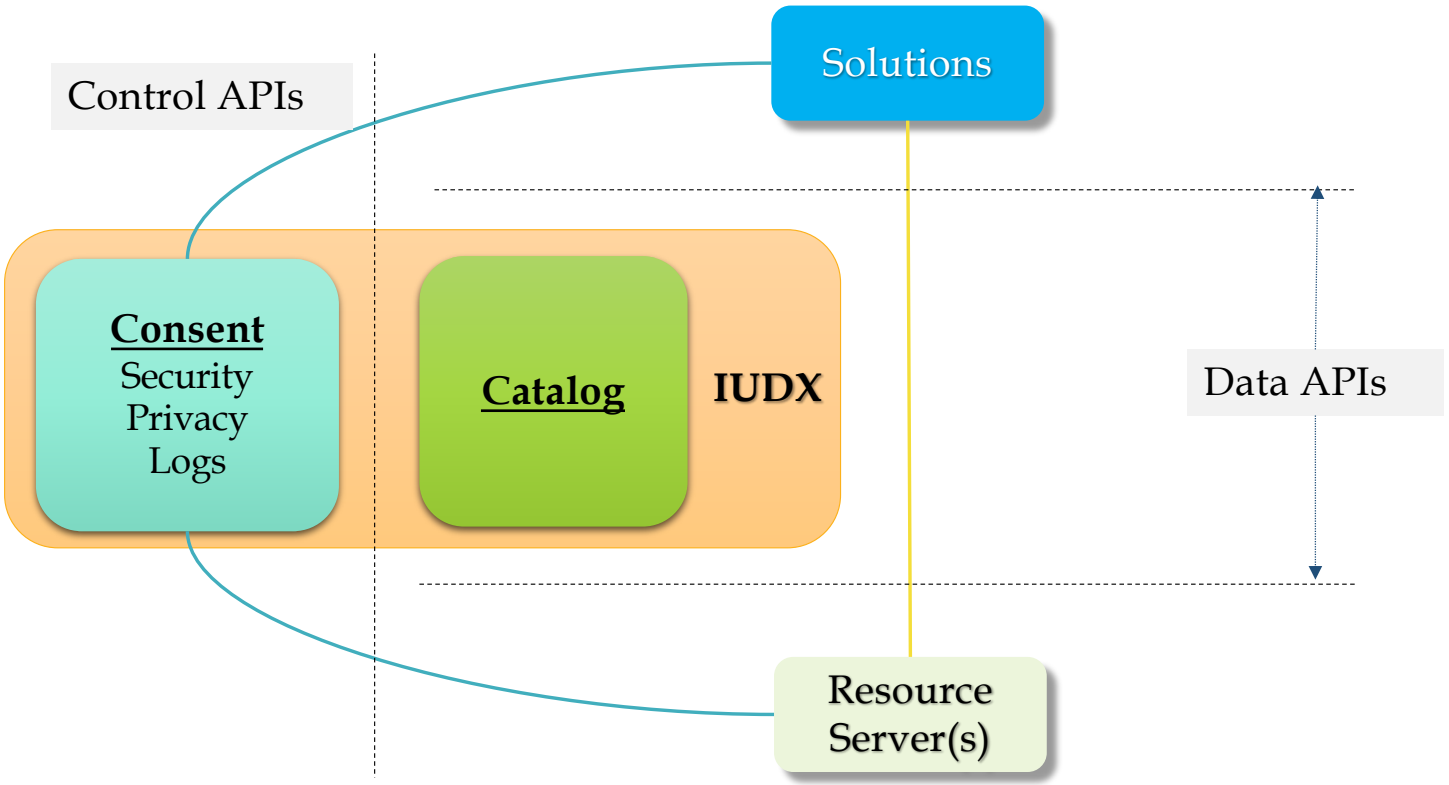
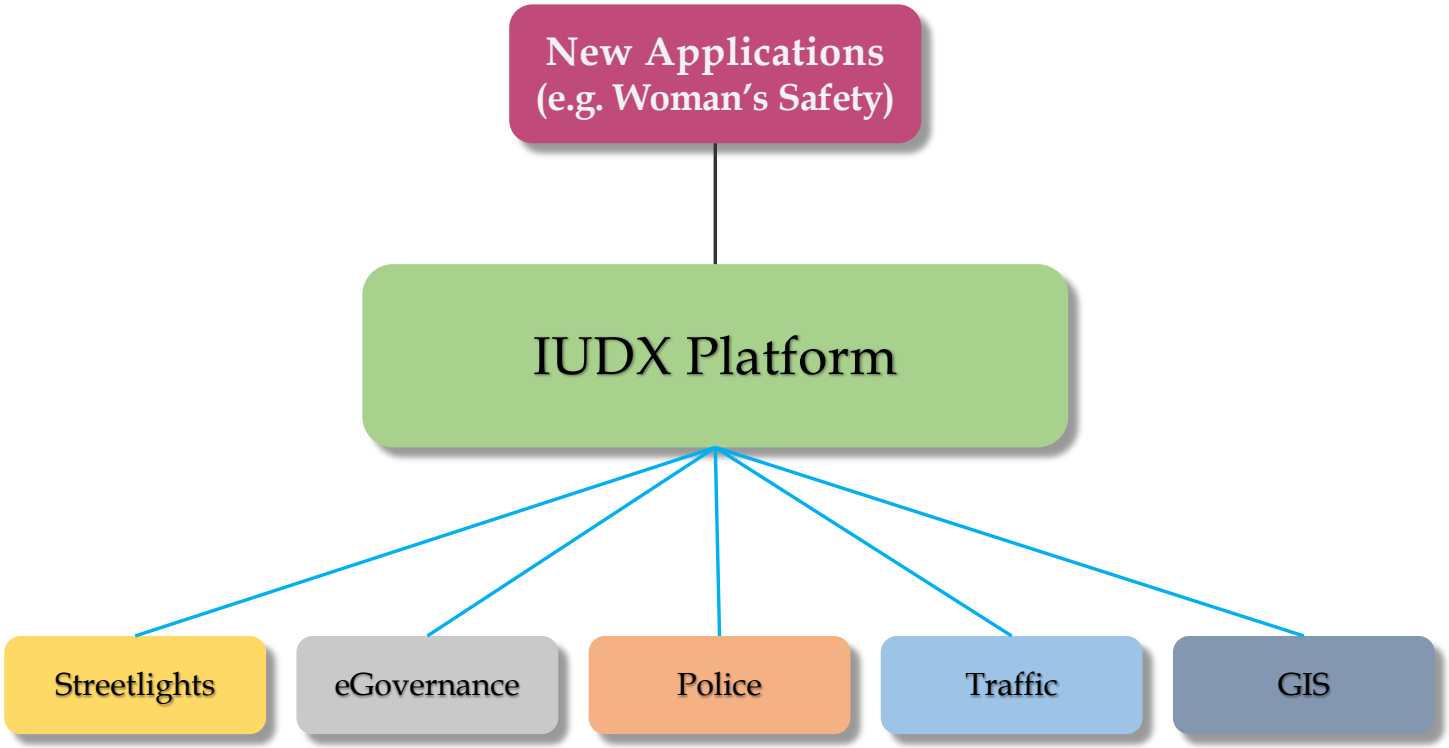


- Two Key Stakeholders:
  - Providers (Guardians) of data
  - Application Developers
- Strong security, privacy and audit framework
  - Providers control sharing of data
- Catalogs expose meta-information about resources.
  - Facilitates easy discovery and development of new apps
- Open APIs to enable 3rd party ecosystem
- Connects Data Sources to solution providers to enable full extraction of value.

GoI initiatives to address the data management challenges

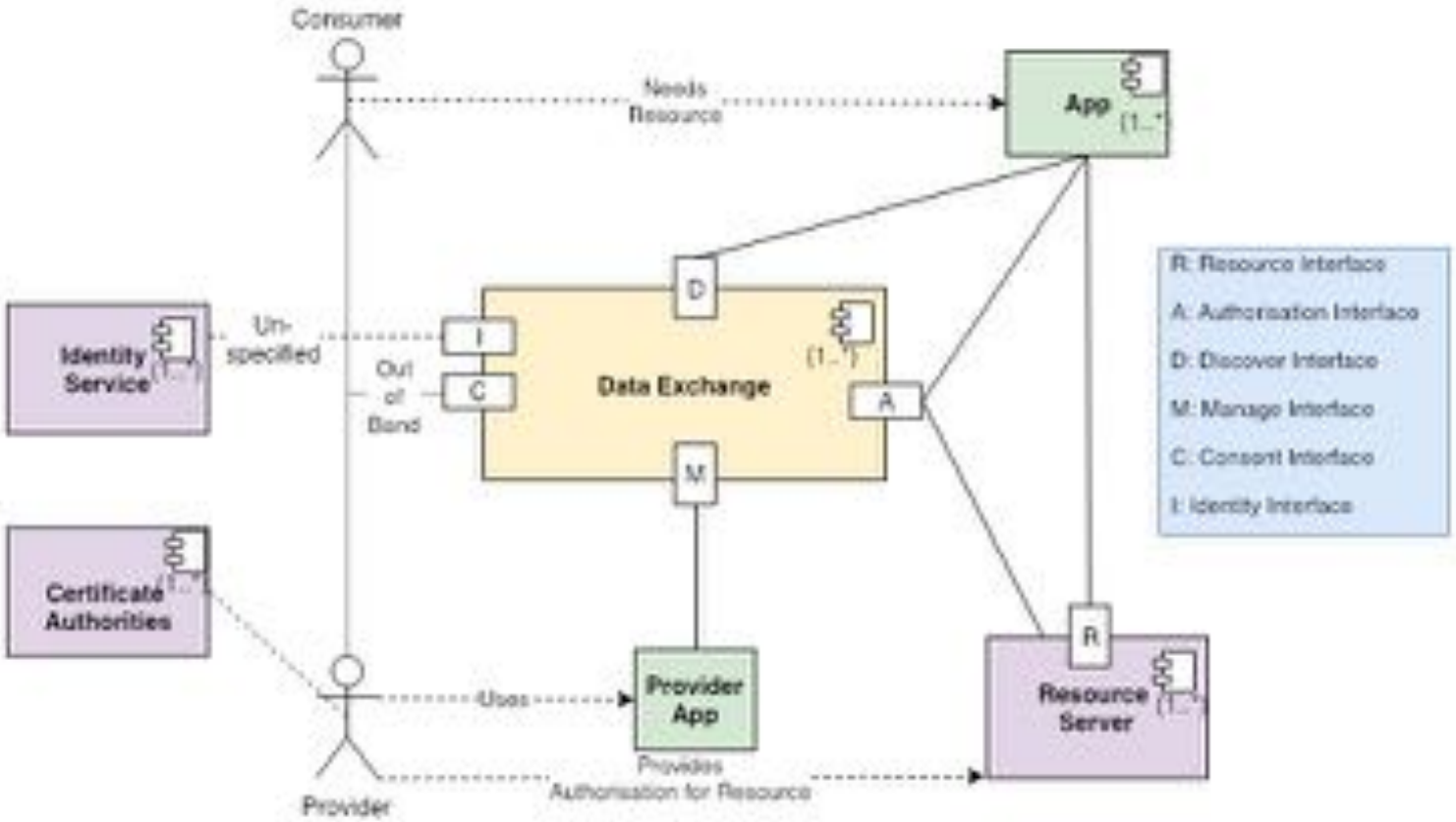
IUDX enables interconnection of platforms



- Enables data exchange between platforms from different organizations
- Enables new applications based on cross-silo analytics
- Allows 3rd parties to add value independently, like performing audits, do maintenance, check for SLAs etc.
- Enables application portability across cities
- Enable device inter-changeability
- Build on existing Infrastructure and investments.
- Explore 5G edge architecture leverage

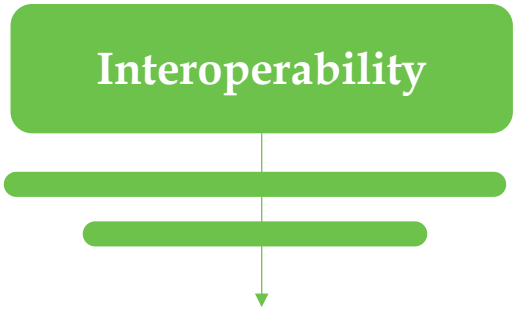
GoI initiatives to address the data management challenges

India Urban Data Exchange (IUDX): Tech Specs

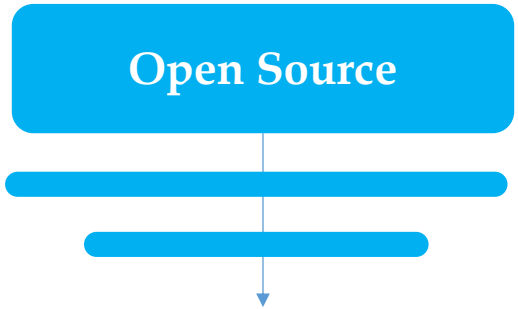


- Develop the system with the following two Key Stakeholders as primary targets
- Providers/Guardians of data
- App Developers
- Security
- Edge Devices / Computing
- 5G Enablement

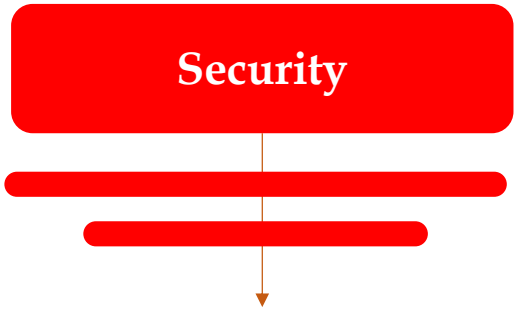
Why Standardization is important



- Connected devices to allow data sharing across various verticals
- Drive Data Governance
- Facilitate City Data Alliance
- Harmonization of various Data platforms



- Cost Effectiveness
- Rapid Innovation
- Leverage the large development communities in country
- Enhancement of Transparency and accountability



- Ensuring the Confidentiality, Integrity and Availability of data
- Security federation across the data platforms
- Harmonization of Identity and trust management
- Security audit trail

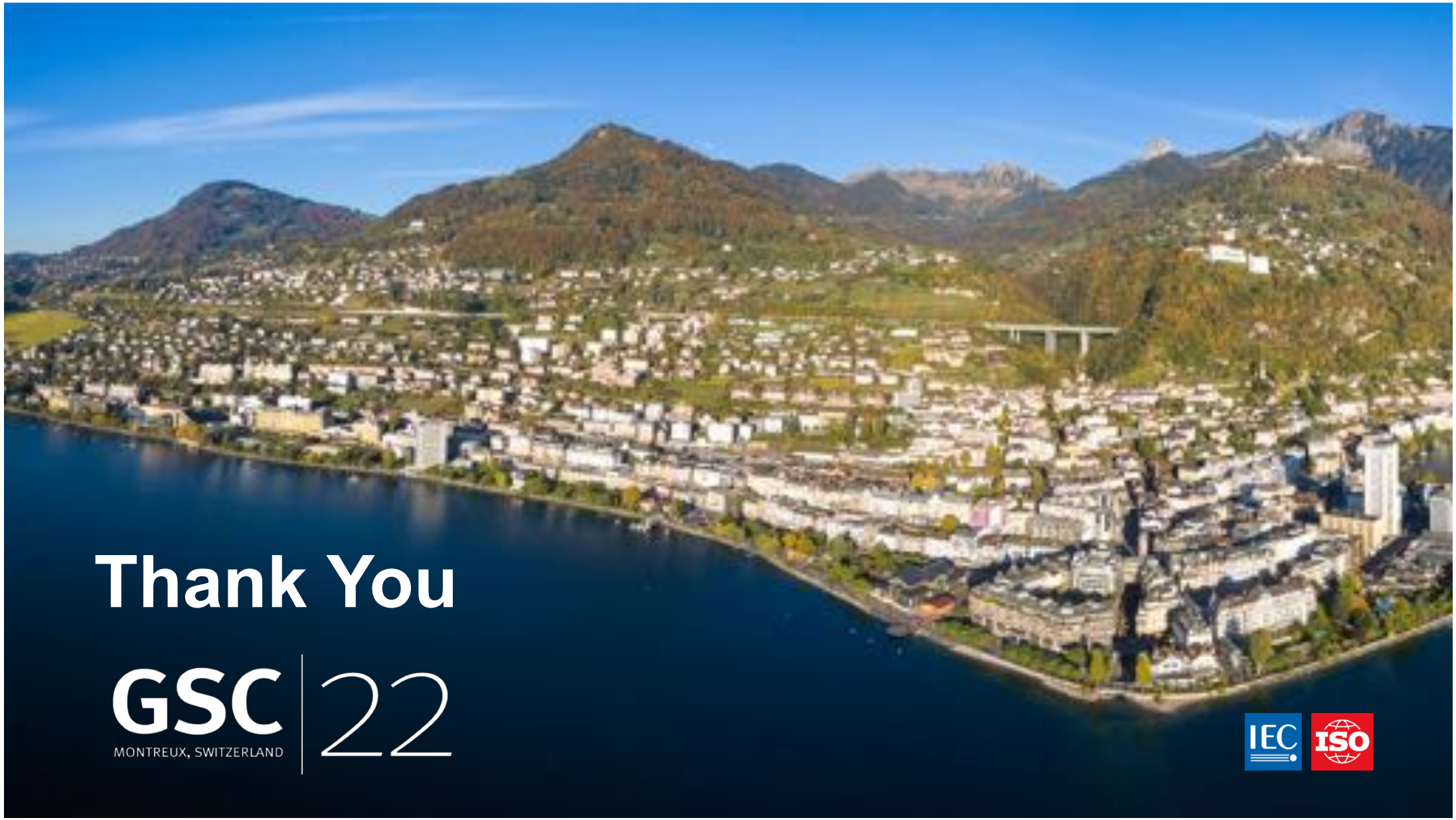
Emerging Thoughts on collaborations

Data harmonization across Indian smart cities using IUDX like frameworks

Explore 5G edge architecture from security, seamless hosting and interoperability at edge with diverse platforms including IUDX

Leverage oneM2M for protocol interoperability etc.

Work further on interoperable APIs and Open Interfaces


Thank You
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