Terms of Reference:
ITU-T Focus Group on “Data Processing and Management to support IoT and Smart Cities & Communities” (FG-DPM)

**1. Rationale and Scope**

The accelerating population density in urban areas is increasing the pressure on the existing infrastructures to meet the needs of inhabitants. Accordingly, there is an increasing demand for connected cities with pervasive embedded devices, to improve quality of IoT and SC&C services. The seemingly profound evolution of these urban areas using interconnected objects helps conceive a “smart environment”, with an autonomous information infrastructure, with several data sources and more than 50 billion devices within the urban ecosystem.

While traditional urban information databases and analytics architectures and infrastructures remain essential, with the growing data management demands, specific capabilities and capacities are required to be able to handle diverse and complex data streams from different sources. This data needs to be processed and managed properly to maximize its value in a secure manner, while complementing it with other information sources.

It is important to note that any imperfections within the data processing and management framework can adversely affect the quality of services, pose risks associated with security and could hinder the overall urban planning and decision making process.

In light of the above, urban areas increasingly require defined and comprehensive data processing and management frameworks and guidelines which incorporate reasonable measures to achieve a layered, data-centric paradigm to support SC&C, therefore the Focus Group will conduct research, identify and study characteristics of effective SC&C data management systems, urban data driven strategies will be enabled by data analytics incorporated into data management structure using emerging technologies to support data management and emerging trends including blockchain related to IoT.

Implementing feasible data management guidelines and standards can make the collection storage, retrieval, and processing of large amounts of data fast and cost-effective, while addressing data complexities.

Taking into account the data interoperability, classification, format and security issues that affect various stakeholders, this Focus Group would play a role in providing a platform to share views, to develop a series of deliverables, and showcasing initiatives, projects, and standards activities linked to data processing and management and establishment of IoT ecosystem solutions for data focused cities.

This Focus Group is expected to develop a standardization roadmap for data management, taking into consideration the activities currently undertaken by the various standards developing organizations (SDOs) and forums.

This “Focus Group on Data Processing and Management to support IoT and Smart Cities & Communities” (FG-DPM) will promote the establishment of data management frameworks and will invite non ITU-T members to participate in its work.

**2. Objectives**

* To study, review and survey existing technologies, platforms, guidelines and standards for data processing and management including data format in support of the mandate of SG20;
* To recognize and highlight the various perspectives for the future of data driven eco-environments;
* To promote security and trust within data management frameworks;
* To identify and study data protection techniques;
* To facilitate cross-cutting data interoperability issues and point the way to the development of efficient and scalable approaches to managing systems data;
* To study meta-data;
* To study trust in data management frameworks including digital identification and certification;
* To investigate the role of emerging technologies to support data management and emerging trends including blockchain;
* To identify challenges in the standardization activities for data processing and management.
* To establish liaisons and relationships with other organizations which could contribute to the standardization activities for data processing and management.

**3. Structure**

The FG – DPM may establish sub-groups if needed.

**4. Specific Tasks and Deliverables**

* To gather documentation on initiatives pertaining to data processing and management from stakeholders. The aim of this task is to develop use cases for presentation to the relevant Questions of Study Group 20 and other relevant study groups and to identify existing standards and data processing and management frameworks employed across smart cities.
* To develop a guide containing the required definitions of terminologies and taxonomy for data processing and management. This guide can also help identify the various stakeholders involved and with an interest in data processing and data management.
* To assist with the development of regulatory toolkits that may be utilized by policymakers to support data privacy and security.
* To organise thematic workshops and forums on data processing and management, which will serve as a platform to explore best practices in this area. These workshops and forums are expected to bring together all stakeholders including policy makers, ICT sector members, national telecommunication authorities, academia, SDOs, UN agencies to discuss the future of IoT data driven smart cities and communities.
* To draft technical reports and specifications which address the standardization gaps and identifying future standardization work for ITU-T study groups in the area of data management (as described in the objectives) and future data infrastructures.
* To communicate the final list of deliverables to SG20, at least four calendar weeks before the parent group’s next meeting.

**5. Relationships**

This Focus Group will work closely with SG20 through collocated meetings where and when possible and will work in close coordination with all ITU-T Study Groups as appropriate.

This FG – DPM will also collaborate (as required) with other relevant entities, in accordance with Recommendation ITU-T A.7.

These entities include municipalities, non-governmental organizations (NGOs), policy makers, SDOs, industry forums and consortia, companies, academic institutions, research institutions and other relevant organizations.

**6. Parent group**

The parent group is ITU-T Study Group 20 on Internet of Things and Smart Cities and Communities.

**7. Leadership**

See clause 2.3 of Recommendation ITU-T A.7.

Chairman: Mr Gyu Myoung Lee (KAIST)

Vice-Chairman: Mr Raphael Rollier (Swisscom)

Vice-Chairman: Ms Jiayu Bi (China Telecom)

Vice-Chairman: Mr Bilel Chabou (Tunisia)

Vice-Chairman: Mr Antonio Harris (CABASE, Argentina)

Vice-Chairman: Mr Robert Lewis-Lettington (UN-HABITAT)

Vice-Chairman: Mr Abdulhadi AbouAlmal (Etisalat)

Vice-Chairman: Mr Dave Faulkner (Climate Associates)

Vice-Chairman: Mr Martin Brynskov (Chair of Open and Agile Smart Cities Initiative)

**8. Participation**

See clause 3 of Recommendation ITU-T A.7. A list of participants will be maintained for reference purposes and reported to the parent group.

It is important to mention that the participation in this Focus Group has to be based on contributions and active participations.

**9. Administrative support**

See clause 5 of Recommendation ITU-T A.7.

**10. General financing**

See clauses 4 and 10.2 of Recommendation ITU-T A.7.

**11. Meetings**

The frequency and locations of meetings will be determined by the Focus Group management. The overall meetings plan will be announced after the approval of the terms of reference. The Focus Group will use remote collaboration tools to the maximum extent, and collocation with existing SG20 meetings is encouraged.

The meeting dates will be announced by electronic means (e.g., e-mail and website, etc.) at least four weeks in advance.

**12. Technical contributions**

Contributions are to be submitted at least twelve calendar days before the meeting takes place.

**13. Working language**

The working language is English.

**14. Approval of deliverables**

Approval of deliverables shall be taken by consensus.

**15. Working guidelines**

Working procedures shall follow the procedures of Rapporteur meetings. No additional working guidelines are defined.

**16. Progress reports**

See clause 11 of Recommendation ITU-T A.7.

**17. Announcement of Focus Group formation**

The formation of the Focus Group will be announced via TSB Circular to all ITU membership, via the ITU-T Newslog, press releases and other means, including communication with the other involved organizations.

**18. Milestones and duration of the Focus Group**

The Focus Group lifetime is set for one year from the first meeting (see ITU-T A7, clause 2.2).

**19. Patent policy**

See clause 9 of Recommendation ITU-T A.7.

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