

Terms of Reference for the UNCEBD Task Team on Mobile Phone Data

(Revised 28 January 2025)

1. Background

The rapid growth in mobile phone penetration globally has created new opportunities for using mobile phone data (MPD) in official statistics, providing insights into population mobility, disaster and emergency response, tourism, migration and in information society monitoring. MPD presents unique benefits for real-time data collection, enhancing the ability of national statistical offices (NSOs) to provide timely and disaggregated statistics at high spatial and temporal granularity. Recognizing this potential, the United Nations Committee of Experts on Big Data and Data Science for Official Statistics (UN-CEBD) Task Team on MPD has been working together since 2017 to explore the applications of MPD as critical resource for strengthening official statistics systems.

Aligned with the mandate of the UN Statistical Commission, the UN-CEBD's mission includes supporting NSOs in adopting and integrating innovative data sources such as MPD. The MPD Task Team (TT-MPD) is formed to promote best practices, facilitate collaboration, and establish standards that ensure the ethical, safe, and high-quality use of MPD in official statistics.

Given the technical, ethical, and operational challenges in using MPD, TT-MPD aims to bridge gaps in knowledge, standardize approaches, and address critical issues around data privacy and data quality. By fostering international cooperation and providing targeted support to NSOs, TT-MPD supports the responsible use of MPD in official statistics, by developing Guidelines outlining methodologies and best practices.

2. Objectives

To guide, develop, and promote the responsible and ethical use of MPD in official statistics, supporting NSOs with standards, methodologies, and resources for effective data integration.

Specific Objectives:

1. Develop a comprehensive framework for the ethical and privacy-preserving use of MPD for official statistics.
2. Create technical guidelines and capacity-building resources that NSOs can utilize to integrate MPD into official statistics.
3. Build a collaborative network among technical experts, NSOs, policymakers, and other stakeholders to support the use of MPD in official statistics.

3. Scope of Work

1. **Standards and Frameworks:** Produce guidelines on methods, technologies, and tools for utilizing MPD for official statistics.

2. **Capacity Building:** Organize workshops, training sessions, and resources to build NSO capacity in using MPD.
3. **Collaboration and Partnerships:** Foster partnerships with experts, data practitioners, international organizations and non-profit organizations to access and utilize MPD.
4. **Research and Innovation:** Promote research on novel applications of MPD, including in areas like urbanization, migration, crisis response, social protection and AI/Machine Learning methods.

4. Composition and Membership

Task Team Membership:

The Task Team is currently composed of more than 50 experts representing NSOs, policymakers, UN agencies, academia, private sector experts, non-profit organizations, and other relevant stakeholders with expertise in MPD, data science, and statistics.

Membership Criteria:

Membership is open to individuals with a demonstrated background in MPD analytics, official statistics, or data privacy and ethics.

Leadership Structure:

The Task Team is Chaired since 2018 by Esperanza Magpantay from the ITU, responsible for strategic direction, reporting, and facilitating communication with the UN-CEBD. Cathy Riley (Flowminder) and Francisco Rowe (University of Liverpool) serves as the vice chairs from January 2025.

Terms of Service:

The TT-MPD is divided into 8 sub-groups (tourism, migration, information society, disaster, population dynamics, transport, synthetic data and training). Members are expected to commit to a two-year term, renewable upon review, with active engagement in Task Team activities and deliverables.

5. Roles and Responsibilities

Task Team Chair and Vice-Chair

- Lead regular meetings and Task Team activities.
- Report progress to the UN-CEBD.
- Facilitate external partnerships and collaboration.

Members:

- Participate in Task Team meetings and sub-groups.
- Contribute to drafting reports of the sub-groups, guidelines, and technical documents.
- Lead or contribute to the delivery of trainings, materials, and webinars.

Secretariat Support:

UNSD serves as the secretariat of the TT-MPD providing administrative support, coordinate communication, and facilitate reporting between the TT and the UN-CEBD.

6. Method of Work**Meetings:**

TT-MPD meets virtually every 4 weeks, with an in-person annual/bi-annual meeting (subject to availability in global events).

Communication:

TT-MPD communicates via email and use the collaborative platform such as the dedicated UN Wiki.

Decision-Making:

Decisions will be made through consensus.

Reporting:

The Task Team will provide progress updates to the UN-CEBD, with annual report detailing achievements, challenges, and future goals, as input to the UN Statistical Commission report.

7. Deliverables and Milestones**Key Outputs Achieved:****Key Outputs Achieved:**

1. **Published the [6 Guides](#) for MPD use in official statistics.** The Guides provide comprehensive information on the application of Mobile Positioning Data (MPD) in 6 areas (dynamic population, migration, tourism, transport, information society, displacement and disaster) of statistics. Each Guide provides methodologies, best practices, and insights for leveraging MPD in various statistical and policy-making contexts, aimed at standardizing MPD analysis across countries.
2. **Prepared the [Awareness raising course](#).** This course, designed to build awareness and understanding of MPD among stakeholders, is accessible through the UN Global Platform Learning Management System and the [ITU Academy](#). It covers fundamental concepts, potential applications, and the ethical considerations involved in using MPD, tailored to a general audience.
3. **Published the Guiding principles to maintain public trust in the use of mobile operator data for policy purposes.** Published in the [Data and Policy Journal](#), these guiding principles aim to uphold public trust when using mobile operator data in policy-making. The principles emphasize transparency, accountability, and ethical standards, helping ensure that data practices respect privacy and foster public confidence.
4. **Presented during the [UN World Data Forum in China 2023](#).** In 2023, at the UN World Data Forum in China, a presentation was delivered in a side-event organized by the UN-CEBD that highlighted the Guides and activities of TT-MPD.
5. **Organized sessions during the [8th International Conference on Big Data \(Bilbao, Spain\)](#).** The sessions were organized to discuss the advancements, challenges, and applications of big data in statistics and policymaking with focus on sustainable

tourism. These sessions brought together experts and practitioners to exchange knowledge and foster collaboration in the field.

6. **Organized series of webinars for the [Rwanda](#), [Brazil](#), [UAE](#) and [Indonesia](#) regional hubs on the 6 Guides.** A series of webinars were organized for the regional hubs in Rwanda, Brazil, the UAE, and Indonesia to introduce and discuss the six MPD guides. These sessions were attended by countries from the respective regions, with national statistics offices, academia, and policymakers participation.
7. The **ITU Jupyter Notebooks** were developed as an innovative tool to enhance countries' analytical capabilities in MPD. These notebooks were showcased at multiple events, where it generated significant interest and awareness for their potential in building national capacity for MPD analysis. The tool specifically supports countries in calculating Sustainable Development Goal (SDG) indicator 17.8.1, Percentage of the population using the Internet.
8. **Task Team members who are MPD Experts facilitated and provided materials to the [GDF-MPD Cohort 1 MPD workshop](#).** The GDF-MPD Cohort 1 workshop was attended by around 130 participants representing the 18 cohort countries. The participants comprised of national statistics office, regulatory agency, MNOs and experts on MPD. It provided participants with an immersive learning experience on using MPD and featured foundational and advanced sessions on MPD standards, frameworks, methodologies, and tools, emphasizing their role in different applications. Through hands-on training covering the Theory of change, maturity assessment, data quality, and applications, the participants gained practical skills. The interactive group sessions supported countries in creating action plans tailored to implement robust MPD pipelines and strengthen institutional MPD capabilities, setting the stage for long-term data-driven policy impact.

Key deliverables expected (January 2025 - December 2025):

1. **Review and elaborate the guides on migration, tourism, and transport:** The guides for each thematic area—migration, tourism, and transport—need comprehensive review and enhancement to ensure relevance, accuracy, and usability. Each area will have a dedicated sub-group responsible for assessing existing content, identifying gaps, and incorporating updated information and best practices. The subgroups should also seek input from subject matter experts and consider recent trends, data sources, and policy needs within their domain. Each subgroup will develop an action plan, propose content updates, and define any additional resources or methodologies needed for effective guide enhancement.
2. To better **integrate MPD into official statistics**, close collaboration with UN agencies (UN Tourism, IOM, etc) that has the statistical mandate is essential. This partnership approach ensures that data calculated from MPD is aligned with statistical standards and could be used as a complement to traditional statistics.
3. **Develop Guides on New Areas Included under Research and Innovation:** To support expanding innovation efforts, new guides need to be developed that address emerging areas identified as priorities. These guides should outline frameworks, methodologies, and best practices to facilitate understanding and application within each new area. The development process will involve collaboration across teams to integrate insights from relevant fields, incorporate case studies, and include practical tools for implementation. Each guide should provide a clear structure, covering foundational

concepts, data and technology considerations, and policy implications to drive effective use and adoption in each innovative area.

4. **Continue the Development of Synthetic Data for Various Applications of MPD for Official Statistics:** This work will support the delivery of trainings on different use cases, ensuring that synthetic data accurately reflects the characteristics of MPD. Each application area—such as migration patterns, population mobility, tourism, transport, information society—will require tailored synthetic datasets that mimic key attributes relevant to each field.
5. **Finalize the Training Materials for the MPD Project Manager:** Completing the training materials for the MPD Project Manager is crucial to support effective project oversight and implementation. These materials should provide comprehensive guidance on managing MPD-related projects, covering essential topics such as data access, stakeholder engagement, technical methodologies, and reporting requirements. The materials will include detailed modules, interactive components, and reference resources.
6. To develop a **pseudocode** guide for using MPD in official statistics. The pseudocode will outline a clear, step-by-step procedure focusing on how MPD can be applied effectively across the six key areas defined in the published MPD Guides. This approach centers on a practical, sequential framework to ensure that data practitioners and policy-makers can confidently navigate the stages of using MPD without diving into specific coding details. Each step should be tailored to the unique characteristics of MPD applications and aligned with best practices.
7. **Delivery of Capacity Building in Countries:** Expanding capacity building efforts is essential to empower countries in leveraging MPD for official statistics. This will focus on delivering training programs that enhance local capabilities in data collection, processing, analysis, and application of MPD. Key topics will include technical methodologies ensuring that countries can integrate MPD into their statistical systems. This can be done in the context of the GDF-MPD Cohort 1 countries.
8. **Build a comprehensive repository** of country use cases of use of MPD for official statistics or other applications in policymaking.

Success Indicators:

Indirect/global indicators

- Increased collaboration between NSOs and mobile network operators.
- Number of NSOs using MPD for official statistics.

Direct/Task Team indicators

- Number of requests received on MPD training and workshops.
- Number of trainings delivered (including country-level webinars and trainings).
- Number of Guides published
- Number of pseudocodes and codes produced
- Number of training materials developed

8. Budget and Resource Allocation

Funding Sources:

TT-MPD works on voluntary basis and travel by experts are funded by their agencies.

Potential partnerships and donor-support can be explored for future activities. Resources will include staff time, technical support to countries, and travel for in-person meetings.

9. Duration and Review

Timeline:

TT-MPD operates on a two-year programme, with extension based on the activities and deliverables identified by the group.