Task Team on the Use of Mobile Phone Data - UN GWG on the Use of Big Data for Official Statistics

International Symposium on the use of big data for official statistics, 16 – 18 October 2019, Hangzhou, China

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Overview

- UN GWG – Task Team on the Use of Mobile Phone Data
  - Members
  - Objectives
  - Outputs – time schedule
- UNSD Project on Measuring human mobility
- Eurostat projects on the use of mobile phone data
- Big data project inventory

UN GWG – Task Team on the Use of Mobile Phone Data

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TASK TEAMS

- Access and Partnerships
- Big Data and the Sustainable Development Goals
- **Mobile Phone Data**
- Satellite Imagery and Geo-Spatial Data
- Scanner Data
- Social Media Data
- Training, Skills and Capacity-building
- Committee on Global Platform for Data, Services and Applications

Mobile Phone Data

Mobile Phone Data has surfaced in recent years as one of the Big Data sources with a lot of promise. It is expected that Mobile Phone data could fill data gaps especially for developing countries given their high penetration rates. In its 2014 'Measuring the Information Society Report', ITU shows that the average mobile subscription rate is 96.4 per 100 inhabitants world-wide, with some lower averages in Asia (89.2) and Africa (69.3). Nevertheless, these numbers show how pervasive mobile phone use is. ITU elaborates that rural areas are still lacking behind urban areas, and this should be considered in studies using Mobile Phone data, but it is clear that the coverage of these data is global. Almost every person in the world lives within reach of a mobile-cellular signal.

Members

Countries: Colombia, Georgia, Korea, Indonesia, Italy, Egypt, Mexico, Oman, Netherlands, Philippines, Saudi Arabia, UAE

Agencies: Eurostat, EU-JRC, IOM, IMF, ITU, UN Global Pulse, UNSD

Other: Positium, Flowminder, GSMA, Telenor

Objectives

Given the wide-spread use of mobile phones in developed and developing countries, and in urban and rural areas, and against the background of a need for detailed statistics for policy purposes, including data to monitor the goals and targets of the 2030 Agenda for sustainable development, the task team is to

- develop methodology to get complementary information and
- quality checks of SDG indicators

using mobile phone data to facilitate the monitoring of orderly, safe, regular and responsible migration and mobility of people (Target 10.7) as well as to monitor tourism as an enabler of economic growth and creator of jobs (Target 8.9).

Outputs:

1) Handbook on the use of mobile phone data for official statistics in electronic format (un-edited version: 2017, edited version: 2019)
2) Training workshop on the use of mobile phone data for official statistics, November 2017, Bogota, Columbia
3) Training workshop on the use of mobile phone data, April 2019, Kigali, Rwanda
4) Regional training workshop on the use of mobile phone data for official statistics, June 2019, Jakarta, Indonesia

Time Schedule for the next 18 months

1. Develop training materials, including an e-learning course

2. Develop and document methodologies on using mobile phone data for statistical applications (Tourism statistics, Migration statistics, Population density statistics, Commuting statistics, etc)

Time Schedule

3. Develop quality checks using mobile phone data on SDG indicators, such as

    (a) SDG indicator 5.b.1 Proportion of individuals who own a mobile telephone

    (b) SDG indicator 9.c.1 Proportion of population covered by a mobile network;

    (c) SDG indicator 17.8.1 Proportion of individuals using the Internet;

Time Schedule

4. Conduct the project in Georgia measuring migration and domestic tourism using a combination of mobile phone and traditional data.
5. Bali Annual Telkom International Conference (BATIK), 16-20 March 2020, Nusa Dua, Bali

Time Schedule

6. Conduct a regional training workshop on the use of mobile phone data for Asian countries in June, 2020
7. Contribution to a GWG session at the ITU AI for Goods Summit on the use of Big Data, 4-8 May 2020
8. Prepare a second Handbook based on these new activities

Handbook on the use of mobile phone data for official statistics – draft version is available at:
https://unstats.un.org/bigdata/taskteams/mobilephone/Handbook%20on%20Mobile%20Phone%20Data%20for%20official%20statistics%20-%20Draft%20Nov%202017.pdf

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UN GWG – TT on the Use of Mobile Phone Data: Project on Human mobility

Mobile phone data could help determine where tourists and migrants come from, how long they stay and where they go.

The granularity of information which potentially can be obtained through using mobile phone data is much higher than what can be obtained through traditional surveys.

The time lag from data collection to analysis could also be significantly reduced.

The project on measuring human mobility (as part of the deliverables of the GWG task team on mobile phone data) aims to estimate population mobility patterns broken down by migrants, seasonal workers and tourists.

International Meeting on Measuring Human Mobility, Tbilisi, Georgia, March 2018

UNSD, ITU, national statistical offices, other national agencies and other international institutes work together to develop and test methods to estimate migration and tourism statistics in Georgia with use of mobile phone data. Thereafter, other countries will test these new methods, such as Indonesia, Malaysia, Oman, Italy, the Netherlands, Columbia and Egypt.

The international meeting was built on three parts, namely
(1) measuring human mobility using mobile phone data,
(2) compiling migration and tourism statistics using traditional data sources,
(3) project implementation using the UN Global Planform

Project Meeting on Measuring Human Mobility

27 - 29 March 2019, Tbilisi, Georgia

Venue: Hotel City Avenue
Agmashenebeli avenue 140B, Chugureti,
0112 Tbilisi, Georgia

DRAFT AGENDA

Format

- Interactive segments
- Each segment prepared by small team
  - Background documentation
  - Brief introduction – few slides
  - White Board and Flip Chart sessions

Date: Wednesday 27 March 2019

9:00 – 9:30 **Welcome**
Mr. Gogita Todradze, Executive Director, National Statistics Office of Georgia

Introduction of Participants

9:30 – 12:30 **Overview of the project of measuring human mobility**
Ronald Jansen, Paata Shavishvili and Haoyi Chen

- Overview
- Identifying use cases
- Definition of objectives
- Available data sources
- Execution of the project

14:00 – 17:00 **Session 1: Use of Mobile Phone data**
Ronald Jansen, Katy Rekhviashvili, Siim Esko and Fabio Ricciato

- Commercial use of mobile phone data
- Additional uses of mobile phone data
- Possibilities of cooperation between MNO and NSO

Date: Thursday 28 March 2019

9:00 – 12:30 **Session 2: Migration Data – case of Georgia**
Haoyi Chen, Michele Vespe, Ingmar Weber and Paata Shavishvili,

- Migration statistics and seasonal workers
- Institutional arrangements and available data sources
- Use of additional data sources – mobile phone and social media

14:00 – 17:00 **Session 3: Other Human Mobility statistics**
Ronald Jansen, Karoly Kovacs, Peter Laimer, Titi Lestari, Siim Esko

- Tourism and event statistics
- Commuter statistics and population density
- Use of traditional and new data sources

Date: Friday 29 March 2019

9:00 – 12:30 **Session 4: UN Global Platform – implementation of project details**
Ronald Jansen, Fabio Ricciato, Siim Esko, Katy Rekhviashvili and Michele Vespe

- Definition of project spaces
- Access to data sources
- Development of methods and algorithms
- Execution of the project (project management, timeline)

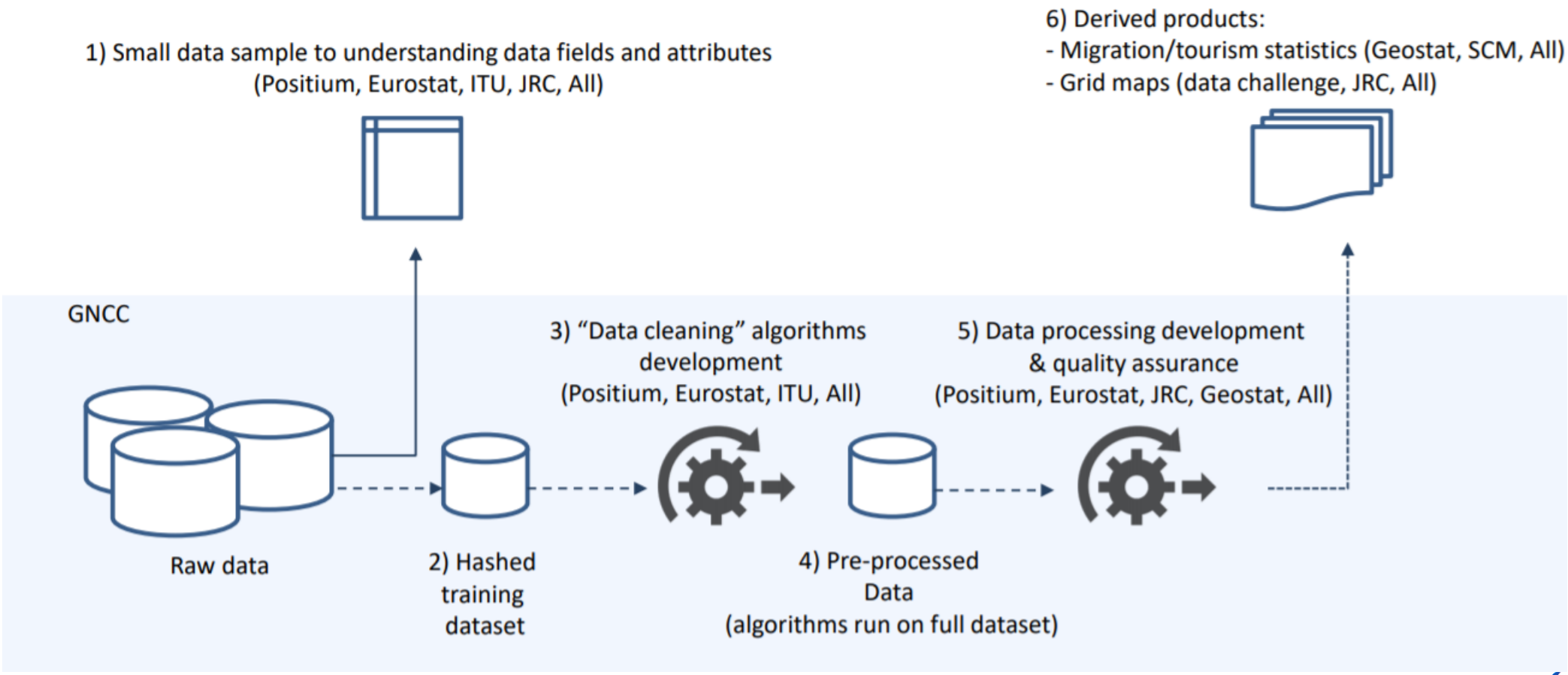
14:00 – 16:00 **Conclusions and way forward**
Ronald Jansen, Paata Shavishvili and Haoyi Chen

- Confirmation of objectives
- Confirmation of available data sources
- Execution of the project

Roadmap for the project

NEEDS	What are the areas where mobile phone data-based statistics are **most needed**? Generate a priority list for your country. Is there already potential **funding** to cover statistical production of these application areas, given a viable solution?
ROLES	Who are the stakeholders? What is the **role** of all of them in processing mobile phone data?
LEGAL	What are the **legal grounds** to use mobile phone data, list what is allowed and what is not? What are the technical solutions used to overcome privacy considerations and how are they approved?
HARDWARE	Calculate the **hardware** needs and assess current hardware
SOFTWARE	What type of **software** stack is needed, what do we still need to develop? Who develops the methodology, who does the data science, who develops the production-ready software?
HR	What type of **skillsets** are still needed?

Data flow


1) Small data sample to understanding data fields and attributes
(Positium, Eurostat, ITU, JRC, All)
6) Derived products:
- Migration/tourism statistics (Geostat, SCM, All)
- Grid maps (data challenge, JRC, All)
GNCC
3) "Data cleaning" algorithms development
(Positium, Eurostat, ITU, All)
5) Data processing development & quality assurance
(Positium, Eurostat, JRC, Geostat, All)
Raw data
2) Hashed training dataset
4) Pre-processed Data
(algorithms run on full dataset)

Eurostat projects on using mobile phone data for tourism statistics

- Using mobile positioning data for official statistics: daydream nation or promised land?
- Tourism statistics: Early adopters of big data

Big data project inventory

Big Data Project Inventory

Home > Inventory

The GWG Big Data Inventory is a catalog of Big Data projects that are relevant for official statistics, SDG indicators and other statistics needed for decision-making on public policies, as well as for management and monitoring of public sector programs/projects. This inventory is a joint product of the World Bank and the United Nations Statistics Division (UNSD) put together on behalf of the UN Global Working Group (GWG) on Big Data for Official Statistics. The tasks related to the content of the inventory are led by the World Bank and UNSD, and the technical side is serviced by the UNSD technical team.

Search

Search Project Title

Select Geographic Area

Select Organization

Select Source

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Select SDG Goal

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If you are working on a project that you would like to be considered for inclusion in this Inventory, even if the project is in an initial phase, please fill out **this application form**.

Feasibility study on geo-localization: using geographical data from web services for geocoding static objects

Country/Area: Belgium
Institute / Dept: Belgium - Statistics Belgium
Data sources: Satellite imagery or aerial imagery data

Project description:

Study the feasibility of using geographical data from web services, either open (e.g. Nominatim, OpenStreetMaps) or proprietary (e.g. Google maps) for the geocoding of static objects not covered by other sources (such as Registry Office or Population Register). The objective is improved geographical localization of statistical units (for linking) and maximally-detailed geographical breakdowns in a wide range of statistical domains.

Read More

Feasibility study on the use of mobile telephone data for tourism & transportation statistics

Country/Area: Belgium
Institute / Dept: Belgium - Statistics Belgium
Data sources: Mobile phone data

Project description:

Feedback

Thank you!

谢谢!

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https://twitter.com/UNBigData