



# USING BIG DATA FOR ICT STATISTICS

## Mobile Data for SDG Indicators

ITU Asia Pacific Regional Forum

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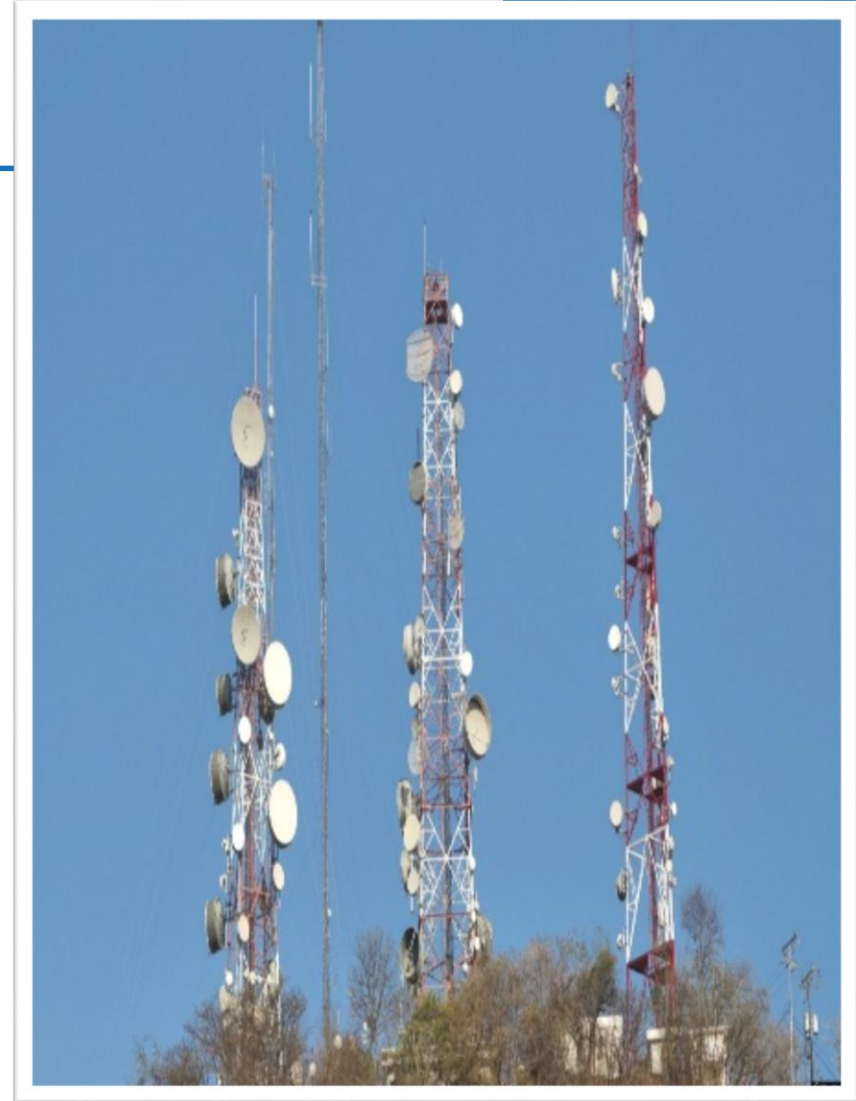
BPS – Statistics Indonesia



2 November 2020

# BACKGROUND

- ✓ In Indonesia, the SDG Targets have been set up to **achieve the 2030 Agenda** (there are 319 indicators).
- ✓ BPS-Statistics Indonesia contributes to 136 Indonesian SDGs Indicators
- ✓ There are three indicators of ICT in SDGs
- ✓ **Household survey** and administrative data (from MICT) is previously used
- ✓ There are data gaps in terms of coverage and granularity



# BACKGROUND

- ✓ There are question about the coverage of Socio Economic Survey and also ask more granular data (municipality/city) level.
- ✓ So, Indonesia (BPS) join ITU Project (second phase) with Brazil (IBGE).
- ✓ BPS Statistics Indonesia already use Mobile Positioning Data for Tourism and Commuting

Statistics





# ITU Project on Big Data for Measuring ICT Development

## *Use of Mobile Positioning Data for ICT Development*

9 INDUSTRY, INNOVATION  
AND INFRASTRUCTURE



Target 9.c.1: By 2030, Proportion of Population Covered by Mobile Network, by Technology → **Administrative data** available every year from MICT, however we did not mapping the data and did not know up to municipality/city → **Big Data** used to compare with and complement administrative data, increase granularity for monitoring SDGs, which area where less coverage

17 PARTNERSHIPS  
FOR THE GOALS



Target 17.8.1: Proportion of Individuals using the internet → **Socio Economic Household Survey** available every year, however only give national and province estimation → **Big Data** used to compare with and complement household survey, increase granularity for monitoring SDGs



# meanwhile...



## Policymakers

They need data to for monitoring SDGs and policy making.



## Society

They need trusted data



Qualified and trusted statistics & indicators have to be provided

**More granular, frequent & timely for monitoring SDGs and other purposes**



# Benefit of Using Big Data

## Increase Coverage

Mobile phone data is used to increase the coverage and data quality.

## More frequent data

Annual data for monitoring

## Less burden

Less work and respondent burden

## Cost Effective

Less budget

## Granular Data

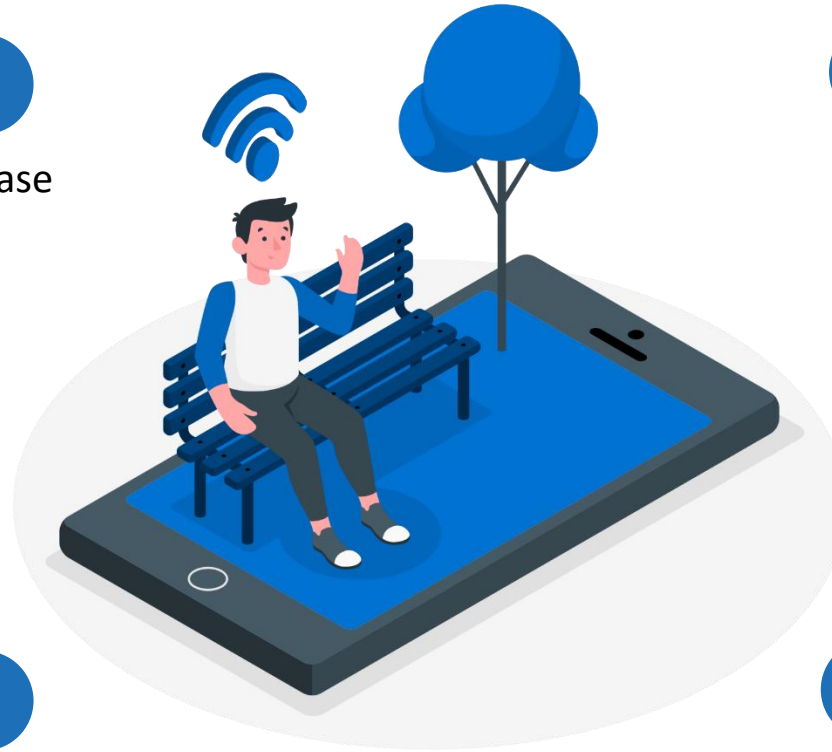
More granular data, such as municipality and sub-district

## Timely

More timely data.

## Less labour

Less manual labour (enumerators)



1

**Quality Assurance**

2

**Sound Methodology**

3

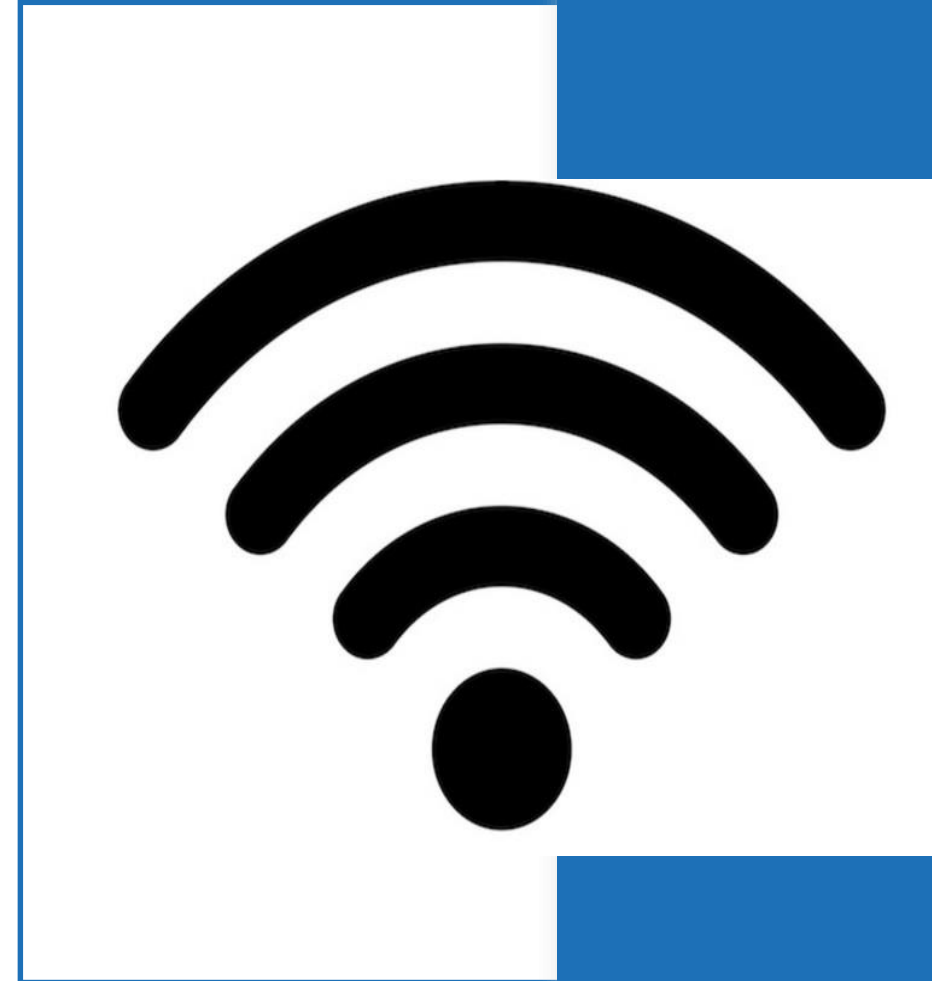
**Privacy-Preserving  
Process**



BIG DATA FOR MEASURING THE  
INFORMATION SOCIETY

# Challenges

- ✓ Data access (No rule or regulation yet).
- ✓ Administrative and legal process (contract etc)
- ✓ Commitments from MNO.
- ✓ MNOs staffs/data scientist lack of understanding on Statistics
- ✓ Data processing (quite big data), PostGIS processes





## Pilot on Information Society

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- ✓ Indonesia and Brazil (pilot countries)
- ✓ Comparing various data source for population (WolrdPop, Population Projection, MPD)
- ✓ Comparing Various Data Sources for Cell ID location (OpenCell ID, MICT)
- ✓ Comparing and complement with household survey for SDGs indicators
- ✓ Lesson Learned for other countries





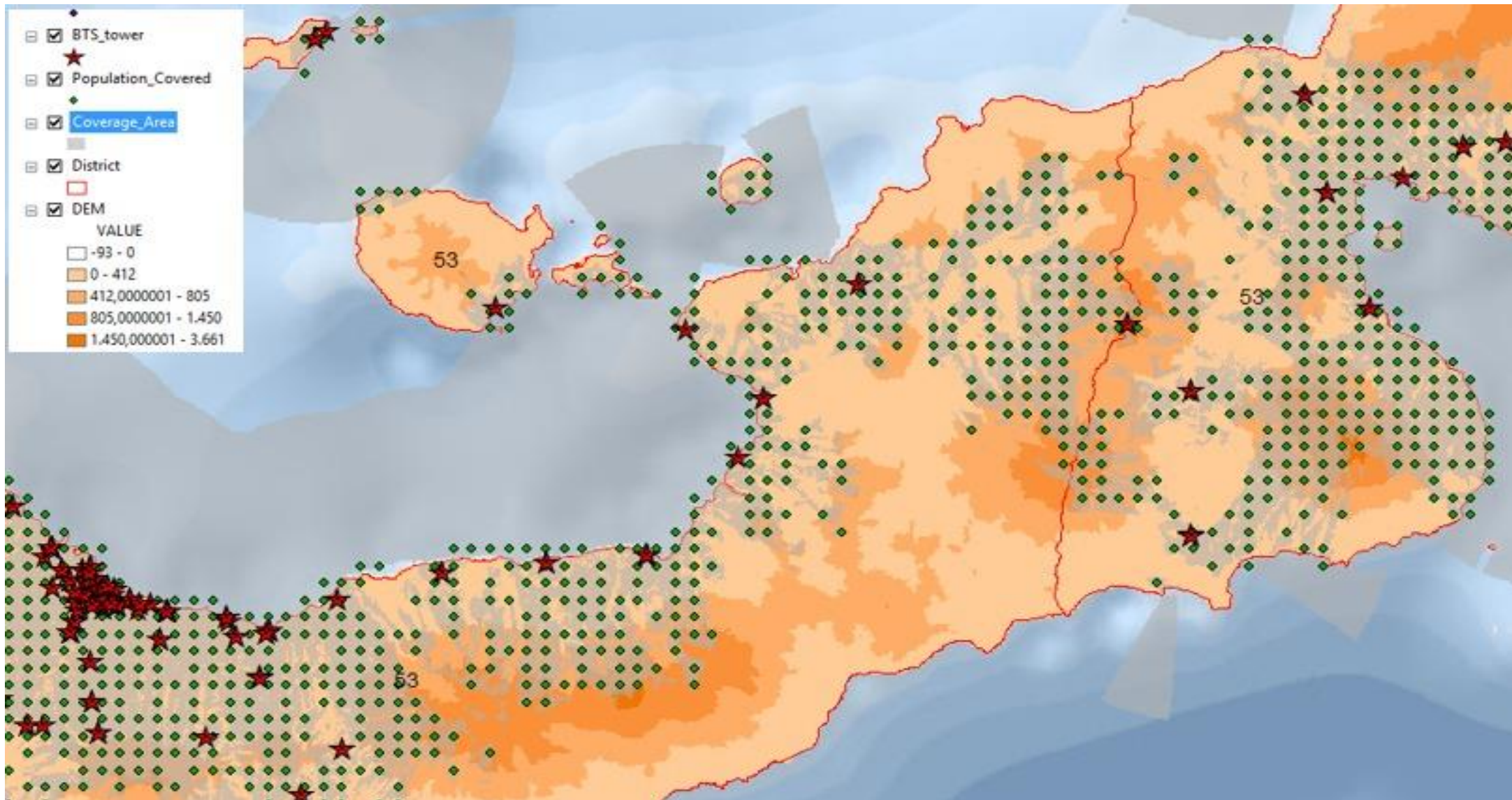
# Cell ID Distributions

## Base Transceiver Station





# Cell ID Coverage exercise







# THANK YOU

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