UN Global Platform

Mark Craddock

#UNGlobalPlatform
@mcraddock
@UNBigData

A global collaboration to harness the power of data for better lives

Leave no one behind

Endeavour to reach the furthest behind first

UN GWG (Big) Data Membership

Australia; Bangladesh; Brazil; Cameroon; **Canada**; **China**; Colombia; **Denmark**; Egypt; Germany; Indonesia; Ireland; Italy; **Mexico**; Morocco; **Poland**; **Netherlands**; Oman; Pakistan; Philippines; Republic of Korea; Saudi Arabia; Switzerland; **United Arab Emirates**; **United Kingdom**; United Republic of Tanzania; United States of America

United Nations Statistics Division, United Nations Economic Commission for Africa , Nations Economic and Social Commission for Asia and the Pacific, United Nations Economic Commission for Europe, United Nations Statistical Institute for Asia and the Pacific, United Nations Global Pulse, International Telecommunication Union, Universal Postal Union, African Development Bank; CARICOM, GCCSTAT, Eurostat/European Commission, International Monetary Fund, OECD, World Bank

SUSTAINABLE DEVELOPMENT GOALS

1 NO POVERTY

2 ZERO HUNGER

3 GOOD HEALTH AND WELL-BEING

4 QUALITY EDUCATION

5 GENDER EQUALITY

6 CLEAN WATER AND SANITATION

7 AFFORDABLE AND CLEAN ENERGY

8 DECENT WORK AND ECONOMIC GROWTH

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

10 REDUCED INEQUALITIES

11 SUSTAINABLE CITIES AND COMMUNITIES

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

13 CLIMATE ACTION

14 LIFE BELOW WATER

15 LIFE ON LAND

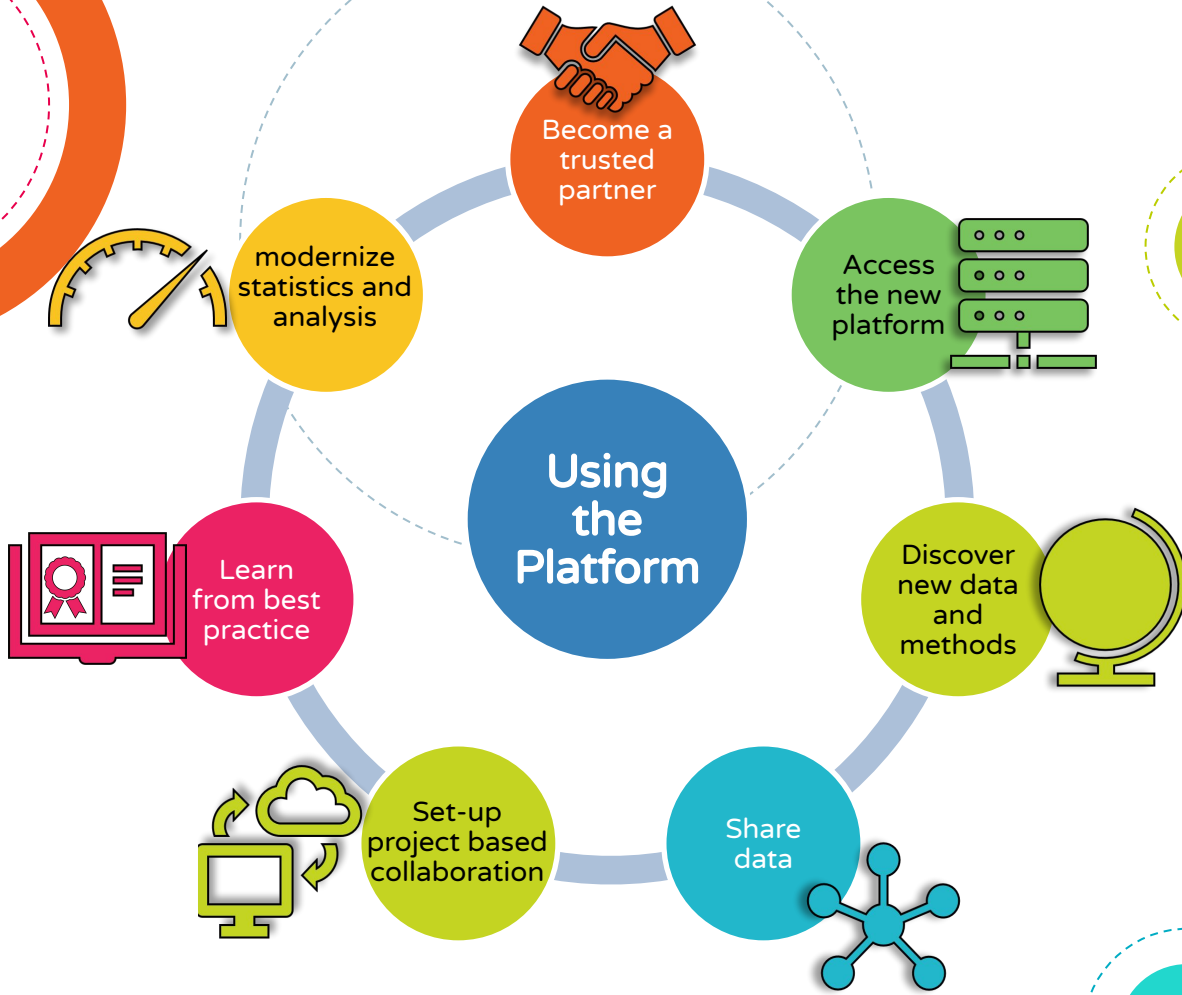**16 PEACE, JUSTICE AND STRONG INSTITUTIONS**

17 PARTNERSHIPS FOR THE GOALS

Global Platform

◎ **Trusted Data**

◎ **Trusted Methods**

◎ **Trusted Learning**

◎ **Trusted Partners**

◎ **AI/ML Ready**

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Using the Platform

- Become a trusted partner
- Access the new platform
- Discover new data and methods
- Share data
- Set-up project based collaboration
- Learn from best practice
- modernize statistics and analysis

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Task Teams

◎ Mobile Phone Data
◎ Satellite Imagery
◎ Scanner Data
◎ Social Media
◎ SDGs
◎ Trade Data / Privacy Techniques
◎ AIS / Economic Indicators
◎ Capacity Development
◎ Privacy Preserving Techniques

Online Community

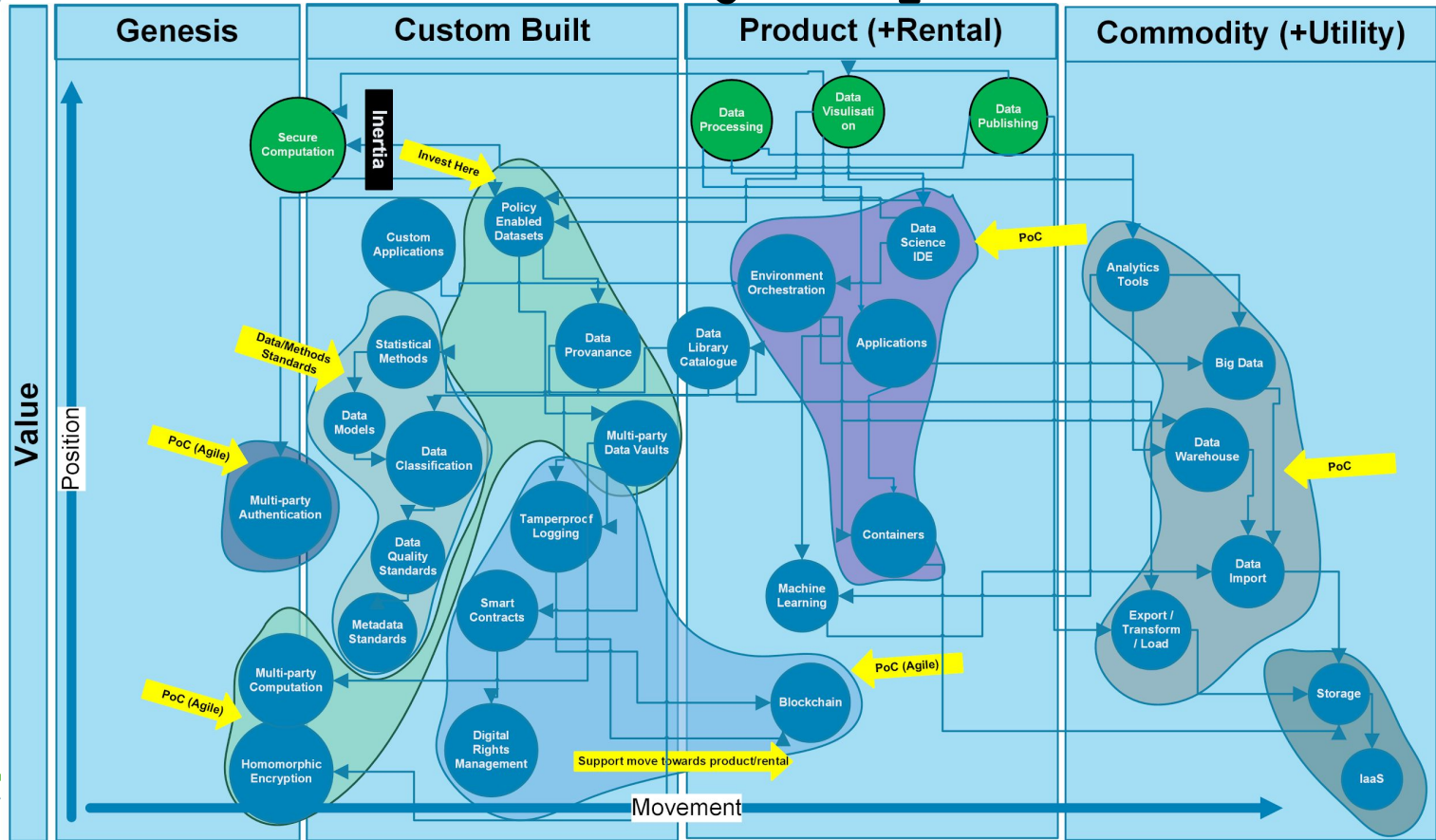# Online Community

◎ Safe Place
◎ Sharing / Collaboration
◎ 360+ people in 14 timezones
◎ 4,000+ messages over last 30 days
◎ Algorithms, Data, Services, Methods, AIS, ADS-B, Cloud Vendors, Privacy Task Team, Task Teams
◎ Join (*http://bit.ly/join-ungp-slack*)
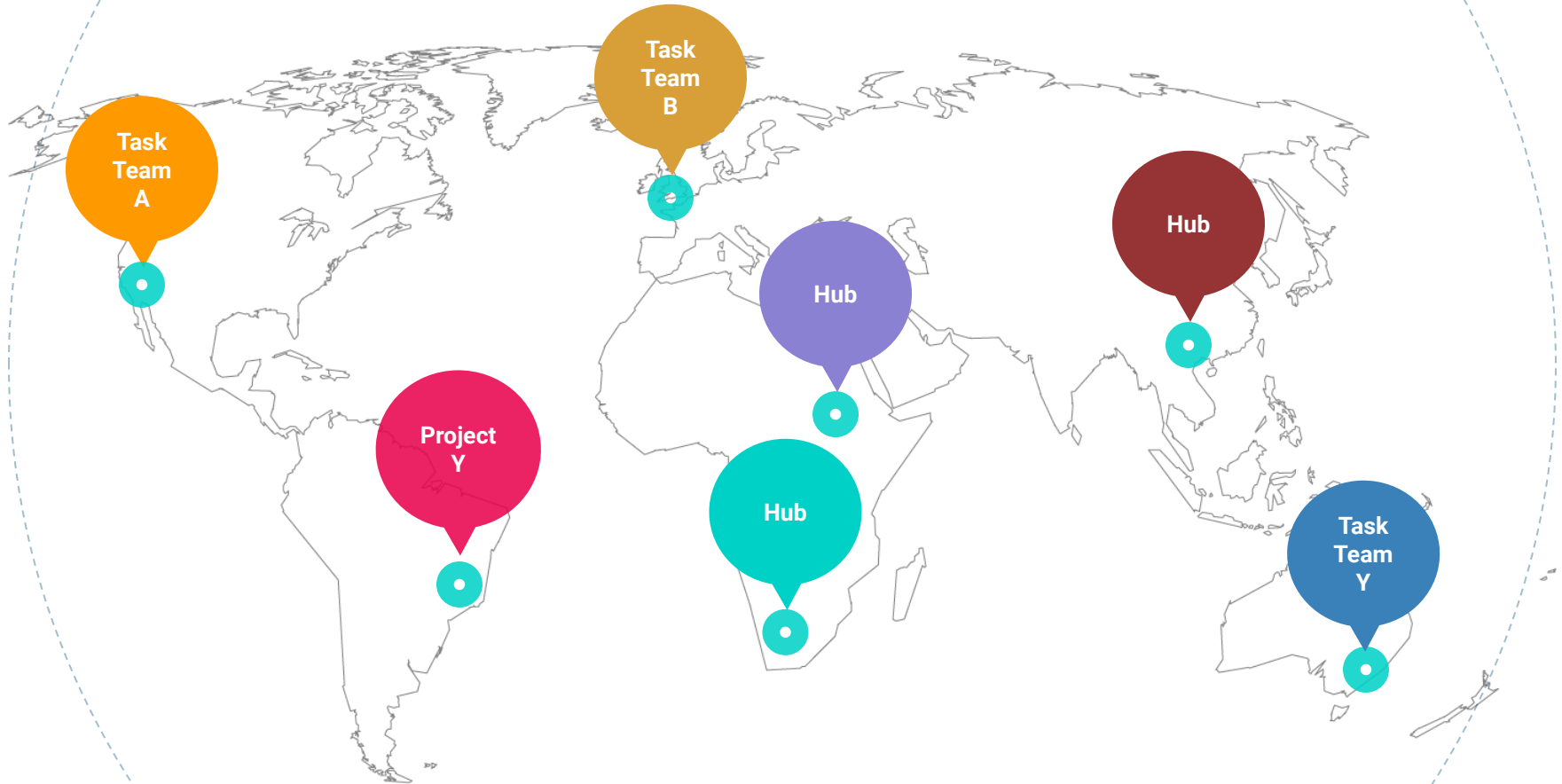
Technology Strategy

Wardley Maps

Technology Strategy Handbook

◎ Mapping the Technology Landscape
  ◉ Cloud
  ◉ Machine Learning
  ◉ Big Data
  ◉ Serverless
  ◉ IoT / Smart Devices
  ◉ Privacy Preserving Techniques
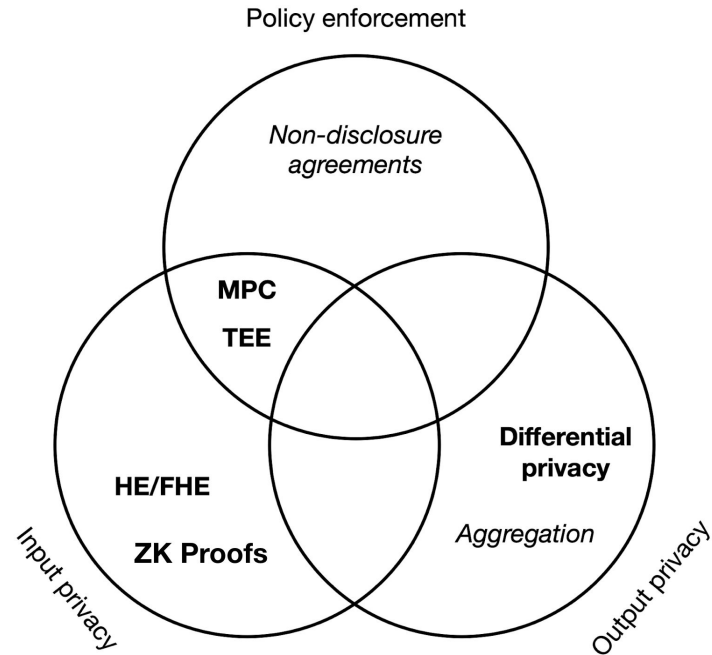◎ [Handbook](#)

Global Billing

Global Billing

Global Billing

◎ Administrative linking of local, regional and global platform

◎ Consolidate Billing Globally
- ⊙ Alibaba, Amazon, Azure, Microsoft, Service Partners

◎ Leverage Discounts

◎ Manage Credits

◎ Allocate Budgets
- ⊙ Per Task Team, Partner, Program

Privacy Preserving Techniques Handbook

Cryptographic Techniques

◎ Multi-party Computation

◎ Fully Homomorphic Encryption

◎ Zero Knowledge Proofs

◎ Trusted Execution Environments

◎ Differential Privacy

Policy enforcement

Non-disclosure agreements

MPC

TEE

Differential privacy

HE/FHE

ZK Proofs

Aggregation
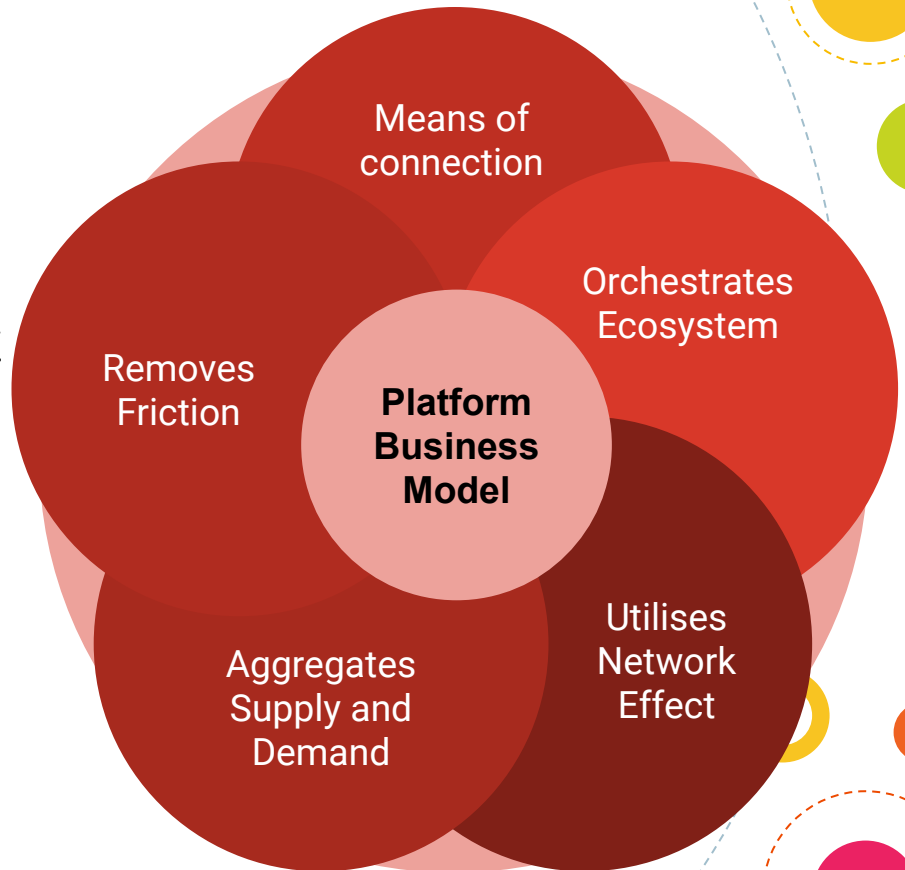
Input privacy

Output privacy

Cryptographic Techniques

◎ [UN Privacy Preserving Techniques Handbook](#)

◎ Proof of Concepts for 62nd ISI World Statistics Congress
- Health Statistics
- Trade Statistics
- Synthetic Data

Business Case/Model

Platform Business Model

◎ A means of connection

◎ Orchestrates an ecosystem

◎ Utilises the network effect

◎ Aggregates supply and demand

◎ Remove frictions

◎ Can have more than one type of value exchange going on

Means of connection

Orchestrates Ecosystem

Removes Friction

Platform Business Model

Aggregates Supply and Demand

Utilises Network Effect

Six distinct aspects of a platform and its ecosystem

◎ Attract/filter/match mechanisms
◎ Guaranteed transaction quality
◎ Building blocks
◎ Information quality/availability
◎ The platform design pattern
◎ Dynamic customer experiences

They are also one of the best organisational structures for enabling rapid evolution

Global Datasets

Big Data

◎ Mostly created and owned by someone else. We don't own the data
◎ Challenges of access to big data (data gravity)

◎ UN Global Platform negotiated access to big data on behalf of the statistical community

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Global Big Datasets

100,000,000,000+

ADS-B Records

40,000,000+

AIS Records / Day

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Automatic Identification System (AIS)

◎ 40 - 80 Million Records / Day
◎ Ship Position / Movement

◎ Analysis via
- ◉ Methods Service
- ◉ Location (Stealth) Service
- ◉ Jupyter Notebooks
- ◉ APIs

Automatic Dependent Surveillance (ADS-B)

◎   3 Million Records / Second
◎   Aircraft Position / Movement
◎   100 Billion Records

◎   Analysis via
  ◉   Methods Service
  ◉   Location (Stealth) Service
  ◉   Jupyter Notebooks
  ◉   APIs

Satellite Imagery

◎ Open Data
  ◉ Landsat
  ◉ Sentinel
◎ Commercial
  ◉ Planet (Trial)
  ◉ AirBus (Trial)
    ○ 1.5m Resolution
    ○ 0.5m Cities

UN Global Platform Services

Marketplace

Satellite Imagery

Location Analytics Service

Earth Observation Service

Global Billing

ADS-B

Trusted Methods Service

Online Community

Developers Service

AIS

AI / ML Ready

UN Global Platform – Update

◎ Trusted Methods Library/Service

  ⊙ https://methods.officialstatistics.org

◎ Earth Observation Service

  ⊙ https://eo.officialstatistics.org

◎ Location Analytics Service

  ⊙ https://location.officialstatistics.org

◎ Marketplace

  ⊙ https://marketplace.officialstatistics.org/

UN Global Platform – Update

◎ Jupyter Service

  ◉ https://jupyter.officialstatistics.org

◎ Operations Service
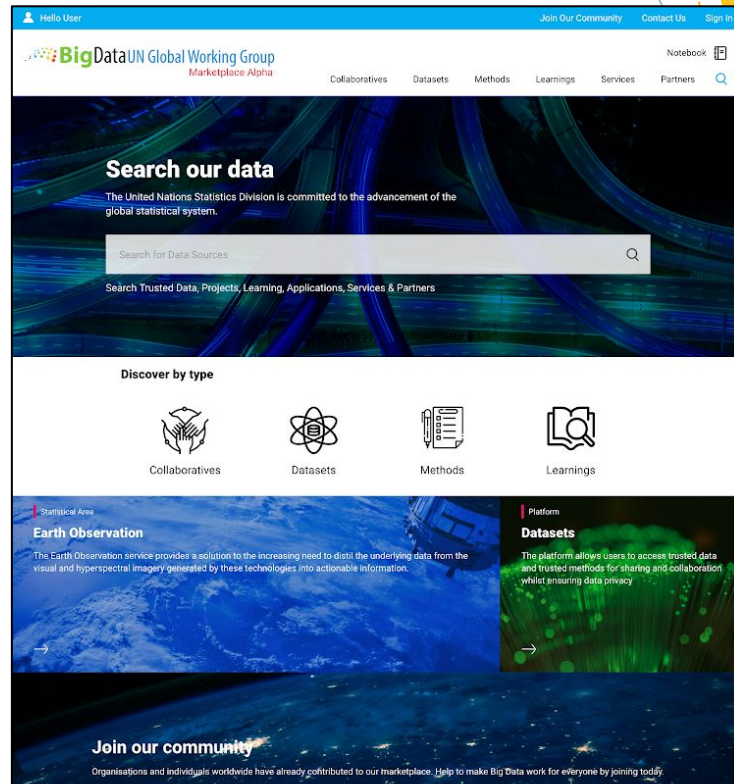
  ◉ https://operations.officialstatistics.org

◎ Helpdesk Service

  ◉ support@officialstatistics.zendesk.com

Marketplace

Marketplace

◎ Alpha Marketplace Live
◎ One place to search for trusted data, applications, partners, methods, algorithms and services
◎ Self Manage Listings (Task Teams, Partners, NSIs)

Marketplace – Users

◎ 100+ Active Confirmed Registered Users
◎ Accessed from 99 Countries
◎ Accessed from 424 Cities
◎ 276.92% increase in searches during Kigali compared to previous week
◎ Most popular browsers, Chrome & Safari
◎ +1,000+ unique views of the Privacy Preserving Techniques Handbook marketplace entry

Location Analytics Service

Location Analytics Service

◎ Visualise and Analyse Location Data
- ⦿ AIS
- ⦿ ADS-B
- ⦿ Mobile Phone
- ⦿ IOT / Smart Devices
- ⦿ "Anything that moves"

◎ Real time data feeds

◎ Visualise and Analyse Anything That Moves

Location Analytics Service

◎ AIS Data Source 1
- ◉ 6GB / Day Ingest
- ◉ 1.23TB
- ◉ From Oct '18

◎ AIS Data Source 2
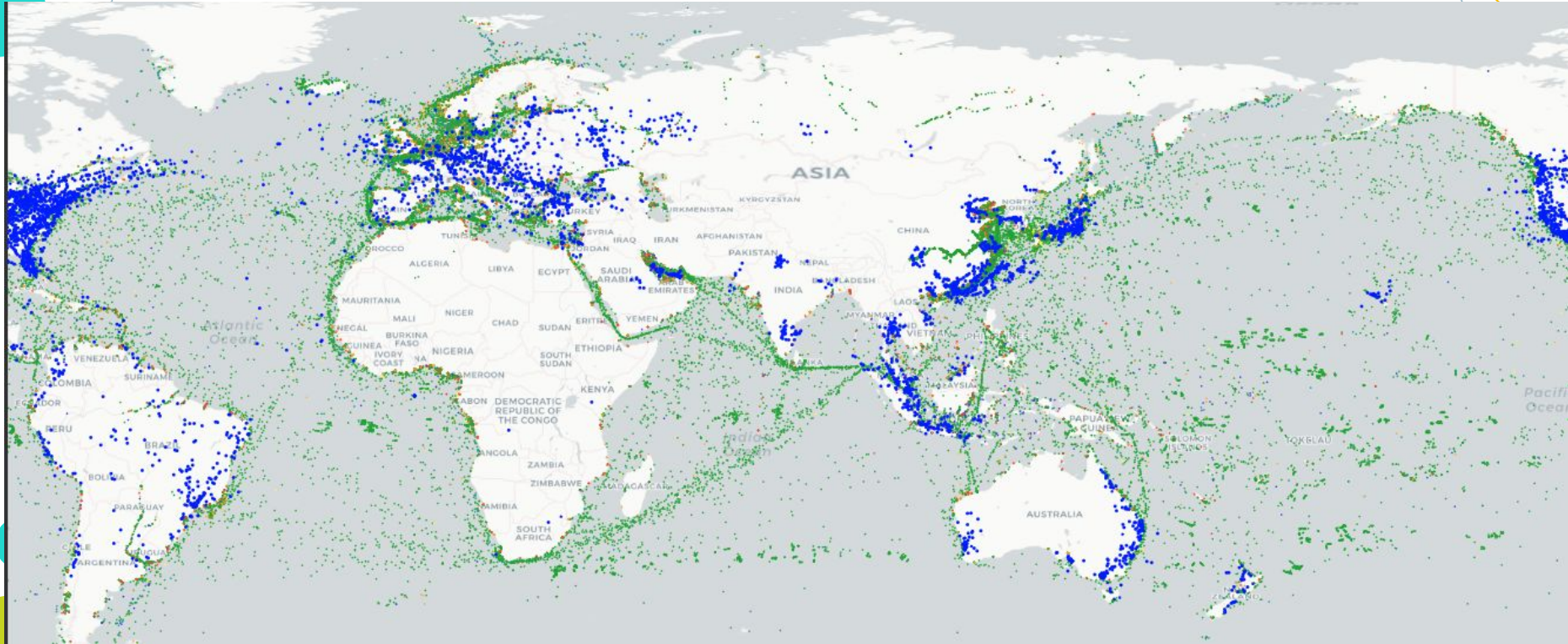- ◉ 29GB / Day Ingest
- ◉ 1.41TB
- ◉ From April '19

*15th May 2019

Location Analytics Service

◎ ASDB Data Source
- ◉ 13GB / Day Ingest
- ◉ 4.49TB*
- ◉ From Oct '18

*15th May 2019

Registered Users

Country	
Croatia	
Denmark	
Estonia	
Ethiopia	
India	
Indonesia	
Mongolia	
Netherlands	
South Korea	
United Kingdom	
United States	

Location Analytics Service

Shanghai – Flights

Shanghai – Cargo Ships

Methods Service

Methods Service

◎ Methods and algorithms must be easy to share and reuse

◎ Methods must be documented and of known quality

◎ Methods must not place too many technology dependencies on users

Methods Service

◎ Provides a library for trusted methods and algorithms that:

⦿ Member countries can collaboratively populate, manage and use

⦿ Allows easy sharing and development of new algorithms

⦿ Does not require specialist knowledge or equipment

Earth Observation Service

Earth Observation Service

◎ Analyse Satellite Imagery
◎ Common Satellite Data
◎ Commercial Satellite Data
◎ Common Algorithms (NDVI, NDWI)
◎ Machine Learning

How Can You Get Involved?

How Can You Get Involved?

◎ Task Teams
◎ Administration Tasks
◎ Technical Specialists
◎ Cloud Specialist Group
◎ Machine Learning Models

◎ Covered by an MOU

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Faster. Quality. Statistics

Thanks!

Any questions?

You can find me at @mcraddock & contactus@officialstatistics.org