UN Global Platform
Gavin Phillips - UN Programme Manager

Sharing algorithms, methods, data and learning using the UN Global Platform for Official Statistics

#UNGlobalPlatform
@UNBigData
Vision:
A global collaboration to harness the power of data for better lives
Global Platform

- Trusted Partners
- Trusted Data
- Trusted Methods
- Trusted Learning

#UNGlobalPlatform
Data Collaborative

Method

Data

Partners

Data Collaborative
Using the Platform

Become a trusted partner

Access the new platform

Discover new data and methods

Learn from best practice

Set-up project based collaboration

Share methods data

modernize statistics and analysis

#UNGlobalPlatform
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**UN Global Platform Members**

- Ronald Janse
- Ronald Janse
- Heather
- Various
- Various
- Various
- Mark Craddock
- Various
- Gavin Phillips
- Various
- TBA
- Jane Harris

**UN Global Platform**

- Strategy Architecture
- Design
- Delivery
- Global Datasets
- Finance
- Marketing / Comms
- Cloud Credits

**Global Platform Services**

- Services
- Strategy Architecture
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- Delivery
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**Platform Services**

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**UN Global Platform for Data, Applications and Services for Statistics**

- Strategy Architecture
- Design
- Delivery
- Global Datasets
- Finance
- Marketing / Comms
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**Task Teams**

- Training
- Handbooks
- Methods
- Algorithms
- Data

**Notes**

- Niels

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Global Support Model

- **24/7 ‘follow the sun’**
  global support model

- **Americas**
  - UNSD - New York

- **Europe**
  - ONS - UK

- **Middle East**
  - Dubai

- **APAC**
  - UNESCAP - Bangkok
Strategy

- Encourage innovation via direct action, collaboration and self-service
- New capabilities created on commoditized components
- Use ecosystem to identify future patterns and user needs
- Reducing cost of development, enables creation of new capabilities in the ecosystem
Strategy Examples

● AIS Data
  ○ Global live feed of ship movements
  ○ Commodified, build new services, algorithms, methods, services
  ○ 40,000,000 + AIS records per day

● ADB-S Data
  ○ Global live feed and archive (since 2016) of flights
  ○ Commodified, build new services, algorithms, methods, services
  ○ Partnered with the world’s largest source of unfiltered flight data - 14 billion historical position reports and 100 billion records growing 3 million records per second
UN Global Platform Services
Methods as a Service

Platform

methods.officialstatistics.org

Training available – contact:

methods@officialstatistics.org

• Outcomes
  ○ Publish & reuse documented methods
Methods Library

- Easy to use
- Easy to find
- Easy to compose
  - Building blocks
- Add to workflow

- Simple utility functions
- Higher-level methods
- ML and deep learning models
- Advanced, use-case specific solutions

Increase in abstraction
Methods as a Service

- Access via APIs
  - Methods as a Service
- Documentation
Marketplace

• Alpha Marketplace live
• One place to search for trusted data, applications, partners, methods & algorithms and services

marketplace.officialstatistics.org
Marketplace

- Technologies and Techniques - Handbooks
- Information Technology Strategy
- Privacy-Preserving Computation Techniques

Urban Forests on the UN Global Platform Methods Service

Overview

Over the past two years the UN Global Platform has been collaborating with the UN’s Data Science Capacity to develop an implementation of the Urban Forests project on the UN Global Platform. The Urban Forests project aims to create an index of vegetation cover and urban forest amount in each country. High quality information on the project is available here, and a full report can be read here.

In order to implement this on the platform, the project team has developed an open-source implementation of a suite of algorithms in the methods service which is supported by Algorithms. This methods service allows for implementations in multiple languages, including Python, R, and Julia, which can be selected from a wide array of texts. The service also supports a combination of languages to easily be used in a single pipeline. Each part of the pipeline is compliant with a common interface, allowing them to be used independently of one another. The post will walk through the creation of a number of these algorithms, how these have been combined to form a pipeline and how this could be reused.

Sampling the road network

The goal of the pipeline is to sample a grid of geographic areas. This might be a square, or an arbitrary shape. The right or manual effort is needed to create the grid or a requested number of reads. In the implementation of the platform, we have taken advantage of the power of algorithms that allow a team to generate many repeatable results along highways.


https://methods.officialstatistics.org/

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Privacy-Preserving Computation Techniques

• Fully Homomorphic Encryption (FHE), Multi-Party Computation (MPC), Differential Privacy
• Access to new sources of (sensitive data)
• Help share data globally - we are currently looking for use cases

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Use Case: Pricing Scanner Task Team

Initial focus on the use of scanner data from retailers to aid the calculation of price indices.

Increase the effective use of scanner data in official statistics:

- through lowering the barriers of entry for countries by providing a library of methods, guidance and training.
- via the sharing of experience, practice and learning between countries on the use of scanner data.
- and through supporting Public-Private collaboration in the acquisition and use of scanner data.

https://methods.officialstatistics.org/algorithms/donal_lynch/FEWS

FEWS

Fixed Effects with a Window Splice. Used to estimate inflation from scanner data.

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Use Case: Pricing Scanner Task Team

The learning output from the Scanner Data Task Team is in the marketplace.

“Scanner data is a Big Data source being increasingly used in national statistical systems for the calculation of price indices as statistical offices explore ways to meet the expectation of society for enhanced products and improved, more efficient ways of working. Many of the price measurement issues and methods for scanner data from supermarket chains and other retailers apply also to other big data sources (for example, online prices obtained from webscraping).”


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Use Case: AIS data

UK Data Science Campus and Trade Task Team investigating use of AIS data.

Calculate the number of ships in port.

- create a set of indicators which allow early identification of large economic changes
- provide insight into economic activity, at a level of timeliness and granularity not possible for official economic statistics.
UN Global Platform
Gavin Phillips - UN Programme Manager

Thank you

contactus@officialstatistics.org

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