

# UNECE Applying Data Science and Modern Methods Group

## Achievements in 2022 and Plans for 2023

*23 November 2022, Geneva, Switzerland*

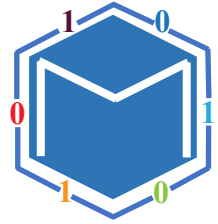


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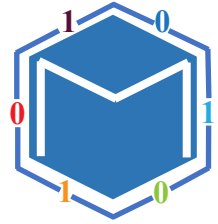
# Agenda

Time	Activity	Presenter
14:30 – 14:35	Introduction of the Group	Wai Kit (Jackie) Si Tou, UNECE
14:35 – 14:40	Task Team 1: Understanding and Selecting Models	Joni Karanka, ONS
14:40 – 14:45	Task Team 2: Accelerating the Implementation of ML-based Solution in Data Editing	Claire Clarke, ABS
14:45 – 14:50	Task Team 3: International Framework on Responsible AI for Official Statistics	Mohammed Haddou, StatCan
14:50 – 15:00	Open discussion	



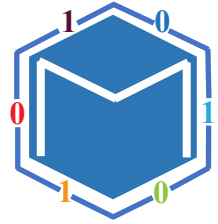
## Introduction

- The Applying Data Science and Modern Methods Group (ADSaMM) was established in 2022, with the aim to identify concrete opportunities to modernize NSO's business processes
- Currently, there are 18 members from 9 organizations
- A [wiki space](#) has been created for the group, with draft outputs and meeting notes
- The group has conducted a market landscape analysis to take stock of existing works in the field of data science and modern methods



## Scoping of work

- Eight potential topics were identified under data collection and integration, data editing, data confidentiality, data dissemination, etc.
- Three task teams have been formed to work on modelling, data editing, and responsible AI
- Preliminary ideas were shared at the ONS Data Science Campus International Collaboration event in Newport, UK, from 12 to 14 July 2022



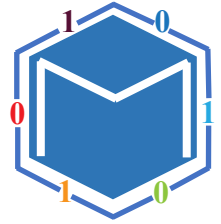
# Task Team 1: Understanding and Selecting Models

## Background:

- There is a large and rapidly developing collection of modern methods and different machine learning models, but this information is scattered in silos with little overarching guidance

## Purpose:

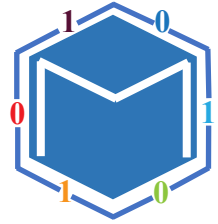
- To consolidate knowledge from NSOs into guidance that enables users to have a comprehensive understanding on how different methods and models fit different types of problem, data and purposes, thereby facilitating the selection of the most suitable solutions



## Task Team 1: Understanding and Selecting Models

### Plans for 2023:

- Collect use cases with detailed discussion on the selection criteria of models
- Prepare an initial decision tree of algorithm or model selection, classified in user-relevant families
- Develop guidance on how to select, describe and use methods and models at an organisational level



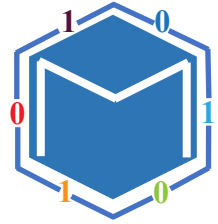
## Task Team 2: Accelerating the Implementation of ML-based Solution in Data Editing

### Background:

- Machine Learning (ML) has a good potential for efficiency gains in complementing or replacing traditional methods, as well as for improving quality in ways that may be difficult to achieve with traditional methods

### Purpose:

- To develop a generic guidance on key organizational issues when implementing ML-based solution in data editing in order to accelerate the productionisation process

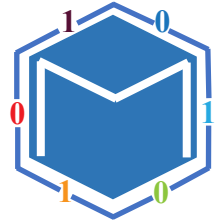


## Task Team 2: Accelerating the Implementation of ML-based Solution in Data Editing

### Plans for 2023:

- Collect use cases to review how project managers attempted to manage the obstacles that have been stopping NSOs from applying ML-based solution in data editing throughout the journey from experiment to production
- Summarize the problems and stakeholders involved and the actions taken to resolve the issues into lessons learned and best practices
- Develop a guidance based on the use cases to offer recommendations to facilitate the implementation of ML-based solutions in data editing





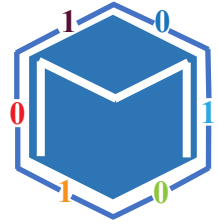
## Task Team 3: International Framework on Responsible AI for Official Statistics

### Background:

- With the wide-scale utilisation and adoption of AI and ML, core principles such as ethics, privacy, fairness, and legality are more important today than ever before

### Purpose:

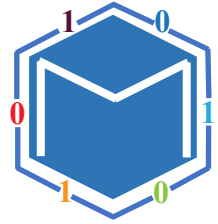
- To set up a common standard for responsible design, development, and deployment of AI-based solutions in NSOs, ensuring these new methods are acceptable from an ethical and human perspective



## Task Team 3: International Framework on Responsible AI for Official Statistics

### Plans for 2023:

- Conduct a literature review to summarise the experience of different NSOs
- Develop an international framework for responsible AI, which consists of a guidance document listing core guiding principles on responsible AI, with clear definitions and guidelines; an assessment tool/checklist along with use cases; and a detailed description of a review process
- Summarise lessons learned and propose recommendations on the implementation of the framework



## Your comments and suggestions are appreciated

- In view of the existing works under the HLG-MOS and other international organizations, **what are the gaps to be filled** (based on the level of urgency and importance)?
- Are there any other areas of work you would suggest the group to consider? **How should this group help address these issues?**
- Do you agree with the focus of the task teams? **What would be a useful output for the international statistical community?**
- What are the **opportunities of collaboration** with your organization?



# Thank you

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