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Item 5 of the provisional agenda

**Work of the High-level Group for the Modernisation of Official Statistics**

## **Report on the work of the High-Level Group for the Modernisation of Official Statistics in 2021**

### **Addendum**

## **Work plan of the High-Level Group for the Modernisation of Official Statists for 2022**

**Prepared by the Secretariat**

*Summary*

The document provides an overview of the planned work of the High-Level Group for the Modernisation of Official Statistics (HLG-MOS) in 2022.



## I. Introduction

1. The High-Level Group for the Modernisation of Official Statistics (HLG-MOS) is a collaborative platform for experts in statistics to develop strategies and solutions in a flexible and agile way (see annex 1 for the structure of HLG-MOS). The HLG-MOS work is open to all willing to contribute to the advancement and modernisation of statistical concepts, standards and business processes. HLG-MOS must remain adaptive to changing environment and shifting landscape of challenges and opportunities. Its strategic vision is regularly updated, and new priorities are set. The annual work program reflects these changing needs while supporting or further developing previous outputs. A process combining top-down and bottom-up approach for obtaining inputs is followed, as presented in annex 2.

2. All members of the Conference of European Statisticians (CES) are invited to submit project and activity proposals for consideration by HLG-MOS. Proposals should be aligned with the mission, long-term vision and short- and mid-term priority areas identified by HLG-MOS. The Blue Skies Thinking Network (BSTN) can also be requested to evaluate and strengthen ideas and proposals. The Executive Board of HLG-MOS provides feedback and selects proposals that will be considered as projects or flagged for other types of follow-up. During the annual Workshop on the Modernisation of Official Statistics at the end of November, these proposals are presented and discussed by experts working on national and HLG-MOS modernisation activities. Through small group discussions, project proposals are evaluated and ranked, and suggestions are made for follow-up on activity and other proposals. The Executive Board then discusses and further refines the proposals, and the selected projects and activity proposals are finally submitted for endorsement by HLG-MOS.

3. This document outlines the work programme based on the discussions at the Workshop on the Modernisation of Official Statistics held online on 15-16 November 2021 and further refined by the Executive Board so that the community members can participate in the activities that are of greatest benefit to them.

## II. Projects in 2022

4. For 2022, three projects were exceptionally selected by HLG-MOS<sup>1</sup>: i) Input Privacy-Preserving Techniques project extension, ii) Data Governance Framework to Achieve Data Interoperability, and iii) Meta-Academy for the Modernization of Official Statistics.

5. These projects aim to improve data interoperability, secure data sharing, and training and capability development, which are enablers for new national data stewardship roles and continuous modernising and implementing new tools and technologies. The outcome of the projects will allow accessing external data sources, for example, held by other national and international agencies, and integration of data sources without direct access to sensitive information. It will also provide guidance on setting up a framework to access, share and combine all data produced throughout the organisation in an easy way and with the metadata needed to understand the data using common standards. Additionally, it will show how training initiatives can be shared and co-created to develop the capabilities needed.

6. The HLG-MOS projects are usually led by project managers assigned by a member of HLG-MOS (in-kind) or contracted by UNECE using the HLG-MOS Trust Fund. Work Package, task teams or other specific activities are usually led by chairs chosen from the project members. The UNECE wiki and web conference are used to monitor the progress of the projects, and UNECE provides additional administrative and secretariat support.

### A. Input Privacy-Preservation Techniques Project

7. The 2021 project on input privacy-preserving techniques (IPPT) proved that such techniques could play an important role in making external data sources accessible when there are confidentiality concerns. This approach allows for analysing or integrating external

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<sup>1</sup> Usually two projects are submitted.

data sources and producing statistics without revealing the microdata to the external partner. At the end of 2021, it was concluded that continued collaboration was needed. The following work packages have been identified for 2022:

- **WP1: Deepen practical experiments** with real examples and more complex case studies to access resources that are hitherto inaccessible due to privacy constraints.
  - **WP2: Document use cases and provide guidelines for implementation** based on the 2021 and additional experiments conducted under WP1, guidelines for successful implementation of specific techniques in practical use cases will be developed. The document will include guidelines on the environment and infrastructure needed for successful implementation, including the (external) data provider requirements. Input for the guidelines will be obtained through a consultation survey.
  - **WP3: Create user community** to continue to share experiences and lessons learnt, test remote access and integration of sources held by different partners, and assist national statistical offices (NSOs) in implementing the techniques.
8. The work of the project will be coordinated with the UN Global Working Group Task Team on Privacy Preserving Techniques and activities of Eurostat in this area. The objective is to achieve a broader level of engagement, including with academia and the private sector.

## B. Data Governance for Interoperability Framework Project

9. The main goal of the Data Governance for Interoperability Framework project is to develop a reference framework for data governance programmes focusing on achieving data interoperability. This framework will allow for creating, exchanging, and using data where its meaning and context are preserved independently from a given system or a set of systems. It is an important first step toward creating a Statistical Data Governance Framework<sup>2</sup>.

10. The objective is to increase the value of statistical information by establishing connections between the data from different domains, allowing comparison, reuse and integration of data from different sources. By creating a way to use information and tools, costs will be reduced. The capacity to create a new platform of systems and tools enhancing the analysis and dissemination of statistics will improve the information products and services. In this way, the framework can meet the emerging and more complex needs of our users while improving data and metadata quality by making it more transparent, manageable and comparable.

11. The project will focus on data interoperability. The aim is to create a document describing a reference framework to achieve data interoperability, including recommendations and guidelines around the following four components:

- Establishing a data governance body inside the statistical organisations to agree on conceptual decisions that are necessary for data interoperability;
- Structuring and using the existing models and standards produced by the ModernStat program and by other relevant projects such as Statistical Data and Metadata eXchange (SDMX), Data Documentation Initiative (DDI), and the Semantic Web as components of this framework;
- Identifying core aspects to be covered during the phases and sub-processes described by the GSBPM to ensure that reliable data interoperability will be achieved by the statistical projects;
- Describing how to implement transversal platforms supporting data interoperability and set up concept-driven integrated information systems that have shared concepts and classifications, provide common views, and are supported by common reusable information services, applications and tools.

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<sup>2</sup> Initially, the project proposal referred to Statistical Data Governance Framework, but given the focus on data interoperability, the name was changed to better reflect the scope.

12. For each component, a task team will be set up. The project will be aligned with the earlier HLG-MOS work and standards widely used in the statistical community. The HLG-MOS Supporting Standards Group and the SDMX working group will be consulted where relevant. The participation of experts on data governance, ModernStats Models, SDMX, and DDI, as well as methodologists, statisticians, and ICT experts, will be fundamental.

### C. Meta-Academy for the Modernization of Official Statistics

13. The purpose of the Meta-Academy for the Modernisation of Official Statistics is to remove barriers to the co-creation of training and reuse of content at an international level. This project intends to raise the standards of virtual learning on topics necessary for the modernization of statistics but that are missing or that are inconsistent with that available from academic, commercial or in-house sources. This project will facilitate sharing of skills strategies, as well as catalogues of contents and pedagogical artefacts, and more generally good practices and standards so that scopes for reuse or co-creation in learning capabilities can be more easily and more systematically promoted and leveraged by all NSOs.

14. This project has three work packages (WP) that target the creation of synergies between existing initiatives, identification of gaps in topics and methods development of training and experimentation with co-creation and training in a virtual world:

- **WP1** will focus on the **benchmarking exercise** among existing initiatives for shared good practices, repurpose existing available material and identifying co-creation of any gaps. The full delivery of the WP1 may be subject to the onboarding of external expertise.
- **WP2** will **co-create capacity building content**. A manual about Git and version control in the context of official statistics will be developed, capturing best practices in the management of algorithms and code bases by statisticians and data scientists. The output will form the basis for a pilot course on the same topic. The experience will also provide real-time co-creation lessons learned on frameworks, opportunities and methods developed from WP1.
- **WP3** will **finalize the framework for virtual learning, co-creating and reusing content**: formalize concepts, skills mapping, learning outcomes and journeys and content creation best practices. The work package will also address the best delivery method for content and co-creation.

15. The project will build on an existing collaboration between Statistics Canada and OECD on creating a Git manual. It will consolidate and continue the efforts on creating content and frameworks for virtual training on the modernization of statistics across HLG-MOS, UNECE and other associated groups, such as the UN Big Data Group. This project will leverage existing frameworks, such as the HLG-MOS Capabilities Development and Training Framework<sup>3</sup> and the UNECE Methodology Framework, and networks, such as the Blue Skies Thinking Network, and other frameworks developed at the national and international levels.

## III. Modernisation Groups

16. Modernisation Groups are organized around common themes, with selected activities carried out by Task Teams. Both the main Modernisation Groups and their Task Teams have virtual monthly meetings. Additional meetings or sprint workshops may be organised to expedite the work. The UNECE wiki and other platforms are used for collaboration and coordination.

17. The Executive Board regularly reflects on the structure and the areas of work of the Modernisation Groups and evaluates their alignment with the HLG-MOS priorities. The

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<https://statswiki.unece.org/download/attachments/218890322/Statistical%20Training%20Framework%20-%20January%202018%20.pdf>

Executive Board decided that from 2021, the Sharing Tools Group would be merged with the Supporting Standards Group, and in 2022, a new modernisation group on applying data science and modern methods would be established.

18. The planned activities of the Modernisation Groups are described below. More details of all activities can be found on the [HLG-MOS site](#).

## A. Applying Data Science and Modern Methods Group

19. The group will consider and make proposals on how to develop, implement, promote, support and facilitate the implementation of data science and modern methods initiatives needed for statistical modernization of business processes. The proposals will be driven by the HLG-MOS community.

20. The main activities and outputs of the group will be decided by the group members in early 2022 through a scoping exercise in coordination with the Executive Board. Examples of potential activities are:

- Identifying data science initiatives and new methods that support modernising existing processes
- Identifying new needs that could be addressed by NSOs by means of data science initiatives
- Providing support to implement such data science initiatives and modern methods, including:
  - i. Developing and publishing supporting materials to help implement and use, such as case studies, good practices, etc.
  - ii. Organising workshops and training to promote and ensure consistent use of HLG-MOS supported data science initiatives and modern methods;
  - iii. Managing the periodic reviews of the new data science initiatives and methods to measure their impacts.
- Following developments in data science and statistical methods relevant to the modernization of official statistics and of interest to the HLG-MOS community;
- Providing input as needed to HLG-MOS projects through the Executive Board.

21. The target composition of the group will be a balanced mix of experts in data science and practitioners/methodologists involved in setting up innovative processes and infrastructure for official statistics. The list of members will be confirmed by HLG-MOS, taking into account the representation of different regions, specialists and stakeholder groups. The Group will collaborate and coordinate with the relevant activities of the ONS/UNECE Machine Learning Community, the Blue Skies Thinking Network, as well as with the UN Committee of Experts on Big Data and Data Science for Official Statistics (UN-CEBD) and other related international activities.

## B. Capability and Communication Group

22. The Modernisation Group on Capability and Communication focuses on the organisational changes and the communication challenges necessary to support modernization in statistical organizations. The COVID-19 pandemic has put a lot of strain on the human resources (HR) and communication departments of NSOs. From the start, the group has been adjusting their work programme into assisting statistical offices to cope with the changing working arrangements and the need for more extensive internal and external communication. In 2022, the group will set up task teams to consider the following substantive topics:

- **Future of work toolkits** – The “next normal” at the workplace is conditioned by a substantial evolution regarding work from home (WFH) and flexible work policies. To help countries transition to new working arrangements, in 2021, three toolkits were

created. The next step will be to create an online repository of tools, examples and other material to assist NSOs in implementing new flexible working arrangements and to provide guidance on how to use the toolkits.

- **The Job of the Future** – New generations of employees look differently at life, work, and their jobs. It will become harder for NSOs to attract and retain new people. The nature of NSOs' work is also changing. Statistics need to be created faster, timelier and answer questions of immediate concern. Cross-departmental and multi-disciplinary/multi-generational teams are often needed. The team will explore existing research in this area, investigate the impacts for NSOs and develop solutions and best practices providing guidance and support towards these changes.
- **Reaching Young People** – NSOs have an official task to inform policymakers and citizens and to stimulate data use and statistical literacy. With current communication strategies NSIs are increasingly struggling to reach young people. This activity will aim to gain insight and develop best practices and standardized methods on how to engage young people in statistics effectively in three dimensions: as a data source, a data user and an employee.
- **Ethics** – The activity continues from 2021. Surveys and in-depth analysis identified that ethics management to improve performance and the organisation in general and ethics management of statistical production and dissemination processes (data ethics) are of specific interest. Respondents would welcome setting up a strategic framework, presentation of case studies, a collaboration platform and training programmes. The goal is to define a common vocabulary, a framework, and give concrete suggestions to support NSOs' leadership in real-work-type situations in such areas as data processing, personal data protection, and conflict of interests.
- **Strategic Communication Framework follow-up** – After expanding the Strategic Communication Framework (SCF) in 2021 to include the role of brand and reputation management, marketing and crisis communication in meeting the challenges facing modern NSOs, the task team will continue to add case studies in other areas for example, how to measure the impact of our communications or strategies to tackle and anticipate disinformation.

23. The Capability and Communication Group will organise the (biennial) **Human Resources Management and Training Workshop** in 2022 and contribute to the organisation of the Expert Meeting on Dissemination and Communication of Statistics. The group will furthermore collaborate and create synergy with the 2022 HLG-MOS Meta Academy for Official Statistics project and the new group on data science. The group is jointly chaired by Ireland and Poland.

## C. Supporting Standards Group

24. The Supporting Standards Group provides support for the implementation of the "ModernStats" models (GAMSO, GSBPM, GSIM and since 2021, CSPA) through a range of activities, including the development, promotion and maintenance of the models. As HLG-MOS is the custodian of these models that have a global reach, continued support is essential. In 2022, the Supporting Standards Group prioritized the following activities:

- **GSIM revision** – The work on linking GSBPM and GSIM and on Core Ontology have provided new perspectives on how GSIM should be used in conjunction with GSBPM and GAMSO. To make all ModernStats models work better together and to properly implement GSIM, several key GSIM objects and relationships need to be re-assessed and modified. The task team will be divided into sub-teams that will work on GSIM Groups in parallel. The new version will be shared for feedback and a global consultation at the CES at a later stage.
- **Core Ontology for Official Statistics phase 2** – In 2021, the Core Ontology task team delivered key outputs such as the ontology specification, a governance document, a URI policy and an OWL (Web Ontology Language) ontology. The task

team will now focus on supporting the use of the outputs, providing user guides and explaining and promoting the ontology.

- **GSBPM Task** – The task team will complete the review of examples from countries that have added tasks to their national versions of GSBPM and develop a proposal for the task level for all GSBPM phases and sub-processes under a common set of principles (e.g., coding, granularity, minimality, description format). The task team will identify issues and proposals that will feed into the future revision of the GSBPM.
- **SDMX-DDI-GSBPM** – The complex landscape of standards that have different scopes and strengths often confuses users as to which standards are used for which stage of the production process. Complexity has increased with newer versions offering more options to the organizations on how to use them in the production processes individually or together. The task team will develop a high-level view of where and how SDMX and DDI can be used across the data life cycle based on GSBPM and identify SDMX and DDI artefacts used for GSBPM sub-processes and provide real-life use cases of how it can be used in the production process and statistical life cycle. The work of linking GSBPM and GSIM will provide a basis to link GSBPM and SDMX/DDI.
- **GSBPM overarching processes** – The work on linking GSBPM and GSIM in 2021 identified several important lessons learned and inconsistencies with the models. Additional work is needed on GSBPM to improve interoperability. The task team will work on the overarching processes in GSBPM, will complete their descriptions in the GSBPM and further break down the overarching processes into sub-processes. This will result in further clarification of the relationship between GSBPM and GAMS. The outcome will directly feed into the future GSBPM revision.
- **CSPA capacity building** – CSPA has too often remained disconnected from other ModernStats models in the past. This activity will aim to: (re)build the community behind CSPA by involving expertise and build CSPA capacity to provide support for the whole community and for the future development of CSPA. Processing all the available material and defining a roadmap for the future development of the model are necessary prerequisites for CSPA support.

25. The group will also collaborate and coordinate work with the Statistical Data Governance Framework project and start an internal discussion on how CSDA is interrelated with other ModernStats models and can be reviewed considering recent developments. The Supporting Standards Group will organise the fourth **ModernStats World Workshop** in 2022. The workshop aims to progress work on the development and maintenance of the ModernStats models and provide a ModernStats models user platform. The group is chaired by Hungary.

#### D. Blue Skies Thinking Network

26. The Blue Skies Thinking Network is the ideas factory of the ModernStats community. It is led by an innovation manager and consists of a core group comprised of around twelve members from various NSOs and international organisations, with in-depth, broad and heterogeneous knowledge of innovation-related aspects to allow for a variety of expertise and views. The core group draws from a flexible pool of resources to evaluate the proposals.

27. The group members and invitees hold pitch talks to test new ideas and can set up temporary activities to follow up on promising topics or project proposals that were not selected. In 2022, the Network will elaborate further on the following topics:

- Community on metadata and data virtualization;
- Digital twins;
- Follow-up of the Joint Biosecurity Centre and Rapid Survey System;
- Microdata for understanding declining response rates (postponed from 2021);
- Mobile survey data collection for climate change;

- Nowcasting.

28. During the year, the BSTN will identify new potential topics through actively engaging with the statistical community and collaborating with other modernisation groups. At any time, ideas can be submitted by the community for evaluation. Additionally, the Network will coordinate with the new group on Applying Data Science and Modern Methods on overlapping and joint activities. Depending on the interest of members and expertise needed, sub-groups might be set up around specific topics.

## IV. Machine Learning Community 2022

29. After a very successful first year, thanks to the leadership and ongoing commitment of the Office for National Statistics of the United Kingdom (ONS), the ONS/UNECE Machine Learning (ML) Community will continue in 2022. Support for this community is largely provided by a dedicated team at the data science campus of ONS. Other countries are invited to consider providing additional support. The ambition for 2022 is to be even bolder, bigger and more collaborative and shift focus from proof of concept to production. Ethics and quality of training data will also be considered.

30. The 2022 setup and activities were planned based on an evaluation and future direction survey and additional proposals from the 2021 ONS/UNECE Machine Learning Community Webinar. The 2022 ML Community will have the following structure and planned activities:

### A. Knowledge Sharing

- **Global Data Squad:** will bring together members from different countries in an active research collaboration to advance the statistical community's understanding of how ML technologies can be used. The members will exchange ideas, resources, experience and good practices and provide hands-on experience in applying ML technologies in their day-to-day work. Project teams are already planned on AIS Shipping Data and on an ML Training Curriculum. Additional topics will be decided by the members.
- **Workstreams:** will provide a platform for knowledge exchange, research development, and networking focused on specific areas of the machine learning process, allowing members to keep abreast of the latest developments, get access to advice and expertise, and exchange ideas and experiences.
- **Hackathon(s):** to produce solutions to common problems in an agile and challenging setting.

### B. Capacity Building

- **Monthly Forum:** for the community to share new research and knowledge, connect and network, and hear strategic views;
- **Lightning Talks:** to introduce a subject, project or idea and to get feedback on it;
- **Data Science Leads:** regular speaking slots at the monthly forum, for example, from national data science leads.

### C. Communications

- **Coffee and Coding:** expert tutorial on technical aspects of ML processes;
- **Exchange Scheme:** to exchange skills between ML community members;
- **Online Community:** a platform for data scientists to exchange knowledge and ideas.



31. All the above activities depend on the collaboration of members and organisations and the sharing of resources. Depending on whether additional resources will be obtained, a newsletter, website, library of training material, a Yammer network and external engagements at related conferences will be considered. The work will be coordinated with the Applying Data Science and Modern Methods group as well as with the Capability and Communication group (on ethics, capabilities and training) and with the Global Working Group (GWG) on Big Data and other international activities in the area.

## V. Expert meetings

32. As in the past, several Expert Meetings<sup>4</sup> will be organized under the auspices of HLG-MOS. By decision of the Executive Board, all expert meetings and workshops will have a 24-month cycle for in-person meetings<sup>5</sup>. In the alternate year, online meetings can be organized. As all meetings were online in 2020 and 2021, the intention is to have most meetings in 2022 in-person, if the pandemic permits.

33. The focus is always on innovative developments and modernization, with the target audience including senior and middle-level managers. The meetings are organised by the UNECE secretariat in collaboration with expert Steering Committees. Due to the continuing uncertainty with the COVID-19 pandemic, no meetings are planned for the first half of 2022. For the second half of 2022, the following meetings are being considered:

- Expert Meeting on Statistical Data Dissemination and Communication;
- Expert Meeting on Statistical Data Collection;
- Expert Meeting on Statistical Data Editing.

34. These meetings are organized by Steering Committees, and the programme will be aligned with the HLG-MOS activities where needed. The HLG-MOS Executive Board can also decide, or HLG-MOS can request, to set up short, focused ad-hoc online workshops in emerging areas, for example, the Covid-19 response workshops organized in 2020.

## VI. Monitoring progress, coordination and participation

35. The work of the Groups and Projects is reported on a monthly basis to the Executive Board of HLG-MOS. The Executive Board discusses the modernization updates and evaluates the progress together with the chairs of the groups and the project managers in their monthly meetings. If needed, the work program is adjusted. The modernisation updates are made available to the wider public every two months at the [ModernStats wiki](https://statswiki.unece.org/x/QY0HBg) (<https://statswiki.unece.org/x/QY0HBg>).

36. There is also a conscious effort to ensure that all activities are continuously aligned and coordinated with other international initiatives like the programs under the European Statistical System and the UN Global Platform. This can be achieved by exchange of information, coordination and collaboration and, in most cases, by achieving joint membership.

37. Participation in the activities of HLG-MOS is open to staff of national and international institutes working in official statistics. Active participation contributions from academia and relevant public and private sector organisations that are willing to contribute to modernising official statistics is welcomed and actively sought.

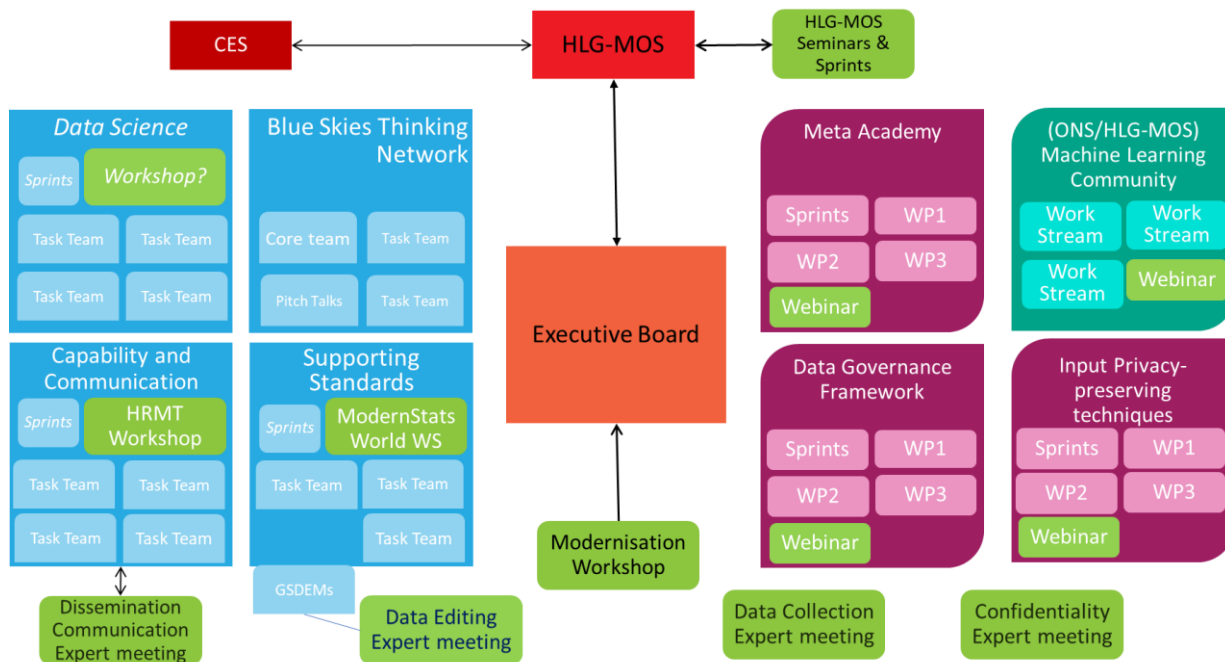
<sup>4</sup> For internal reporting/programming purposes, several workshops were renamed to Expert Meeting from 2021 onward.

<sup>5</sup> The Expert Meeting on Statistical Confidentiality already had a 24-month cycle, while the Expert Meeting on Statistical Data Editing had an 18-month cycle.

## Annex 1

### 2022 Structure of the High-Level Group for the Modernisation of Official Statistics

Figure 1  
HLG MOS Structure in 2022



## Annex 2

### High-Level Group for the Modernisation of Official Statistics Innovation Pipeline

Figure 2  
HLG MOS Innovation Pipeline

