



HLG-MOS Modernisation Workshop 2022

Brief History of Modernisation

12th Annual Workshop of the High-Level Group for the
Modernisation of Official Statistics
22-23 November 2022



Intro slide HLG-MOS

- 2010: High-level group on strategic developments in businesses architecture in statistics (HLG-BAS) created by the Bureau of the Conference of European Statisticians [NL, AU, IT, SL, US & Eurostat, OECD, UNECE]
- 2013: High-level Group for the Modernisation of Statistical Production and Services
 - Trust Fund setup in 2013 & new group structure established (including Executive Board)
- 2015: High-level Group for the Modernisation of Official Statistics (HLG-MOS)
 - Branded as ModernStats
- Chairs:
 - Gosse van der Veen (Statistics Netherlands) 2010-2013
 - Pdraig Dalton (CSO Ireland) 2014-2017
 - Anil Arora (Statistics Canada) 2018-



Current Members HLG-MOS and Executive Board

- Anil Arora (Canada) *Chair*
- David Gruen (Australia)
- Pádraig Dalton (Ireland)
- Gian Carlo Blangiardo (Italy)
- Graciela Márquez Colín (Mexico)
- Angelique Berg (Netherlands)
- Mark Sowden (New Zealand)
- Dominik Rozkrut (Poland)
- KeunKwan Ryu (Republic of Korea)
- Ian Diamond (United Kingdom)
- Mariana Kotzeva (Eurostat)
- Paul Schreyer (OECD)
- Lidia Bratanova (UNECE)
- Jennifer Banim (Ireland) *co-chair*
- Stéphane Dufour (Canada) *co-chair*
- Anders Holmberg (Australia)
- Mikko Lindholm (Finland)
- Orietta Luzi (Italy)
- Sergio Carrera (Mexico)
- Joost Huurman (Netherlands)
- Vince Galvin (New Zealand)
- Emanuele Baldacci (Eurostat)
- *Chairs of Modernisation groups and project managers: see presentations today and yesterday*

Statement of Intent

The community is a **semi-formal alliance**, open to any organisation working in the field of official statistics

Partners in the community are expected **to actively support the goals of the community**

The resources available to the community will be used to **support standards-based modernisation** through **international collaboration**

Community **activities** will be **limited** to a maximum **duration** of one year, after which they will be reviewed

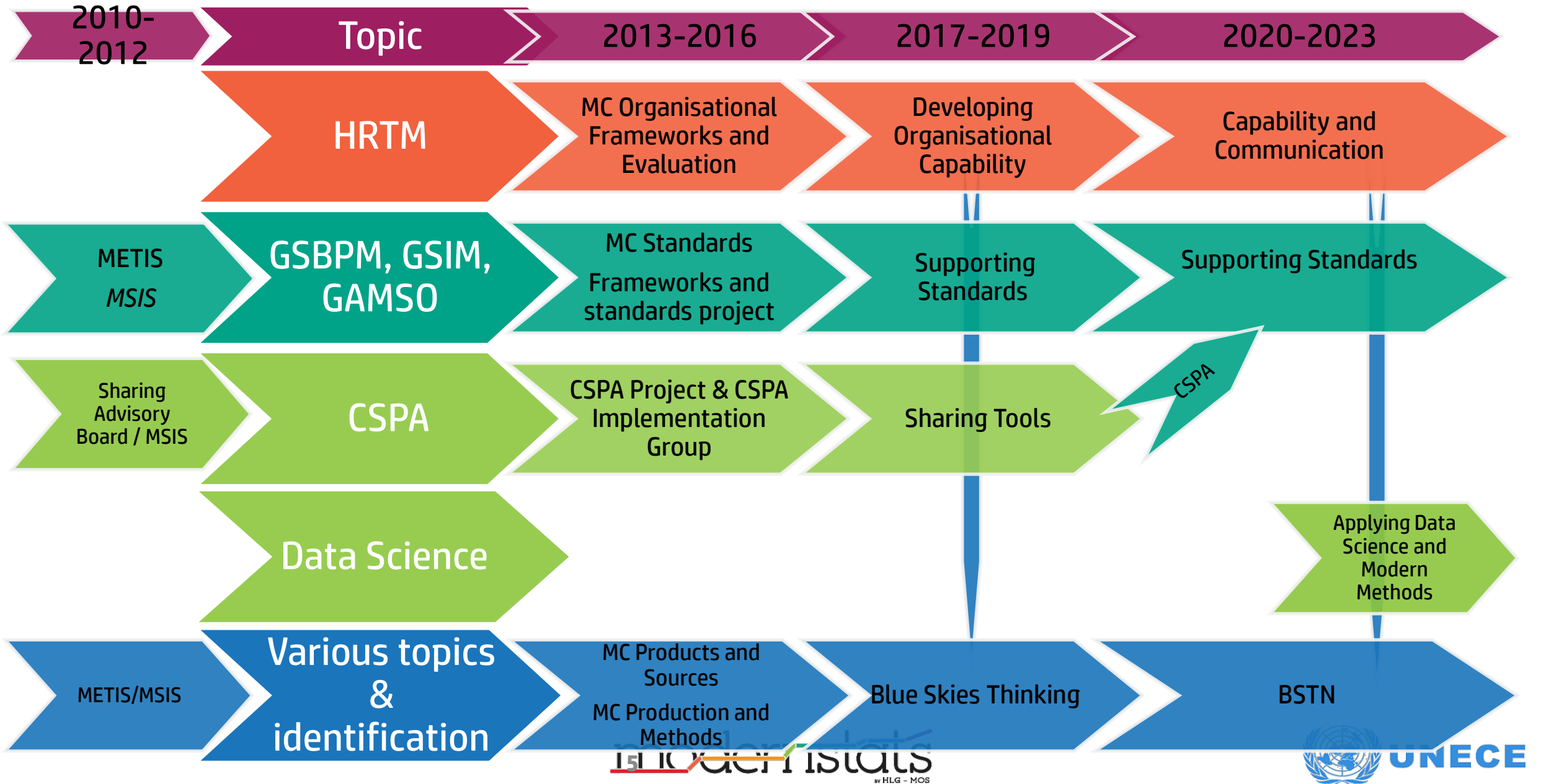
All community **activities** are **voluntary**

The community is the “owner” of products developed or produced as a result of community activities and projects

The UNECE Secretariat will support and facilitate the work of the community and the HLG-MOS

- **Australian Bureau of Statistics**
- **Central Bureau of Statistics (Netherlands)**
- **Central Statistics Office (Ireland)**
- **Eurostat**
- **Hungarian Central Statistical Office**
- **INEGI (Mexico)**
- **Istat (Italy)**
- **OECD Statistics Directorate**
- **Puerto Rico Institute of Statistics**
- **Statistical Office of the Republic of Serbia**
- **Statistical Office of the Republic of Slovenia**
- **Statistics Canada**
- **Statistics Korea**
- **Statistics New Zealand**
- **Statistics Poland**
- **Statistics Sweden**
- **Statistical Office of Montenegro**
- **UNECE Statistical Division**

Group Structure 2013-2022



HLG-MOS Projects

- 2012: Generic Statistical Information Model (GSIM)



- 2013: Frameworks and Standards for Statistical Modernization



- 2014-2015: Common Statistical Production Architecture I & II (CSPA)



- 2014-2015: Big Data for Official Statistics I & II



- 2016: Implementing ModernStats Standards

- Linked Statistical Metadata

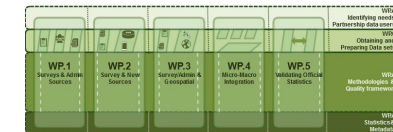
- Roadmap for implementing standards



- 2016-2017: Data Integration Project I & II



- 2017-2018: Data Architecture Project I & II



HLG-MOS Projects

- 2018-2019: Strategic Communication Framework I & II



- 2019-2020: Machine Learning I & II



- 2021: Synthetic Data Guide



- 2021-2022: Input Privacy-preserving Techniques I & II



- 2022: Meta-Academy for the Modernization of Official Statistics



- 2022: Data Governance for Interoperability Framework



- 2023: Data Governance Framework for Data Interoperability; ModernStats Carpentries; Robotic Process Automation; Cloud Usage for Official Statistics; Linking and Querying Statistical Classifications through the Semantic Web Standards

Expert Meetings, Workshops, Webinars and Sprints 2010-2022

- HLG-MOS workshop on the Modernisation of Official Statistics, 22-23 November 2022, Geneva
 - *Meta Academy Seminar 24 November*
 - *Input Privacy-Preservation Techniques Seminar 24 November*
- HLG-MOS workshop on the Modernisation of Official Statistics, 15-16 November 2021, online
 - *Synthetic Data Webinar, 17 November 2021*
 - *Input Privacy-Preservation Webinar, 18 November 2021*
 - *Machine Learning Community Webinar, 19 November 2021*
- HLG-MOS workshop on the Modernisation of Official Statistics, online, 18-19 November 2020
 - *Statsbots Webinar, 20 November 2020 (BSTN subgroup event)*
 - *Machine Learning Project Webinar, 16-17 November, Online (public event)*
- HLG MOS Workshop on the Modernisation of Official Statistics, Geneva, 18-20 November 2019
- HLG MOS Workshop on the Modernisation of Official Statistics, Geneva, 27-28 November 2018
- HLG MOS Workshop on the Modernisation of Official Statistics, Geneva, 22-23 November 2017
- HLG-MOS Workshop on Modernising Official Statistics, Geneva, 22-23 November 2016
- HLG-MOS Workshop on the Modernisation of Official Statistics, The Hague, 24-25 November 2015
- HLG-MOS Workshop, Geneva, 19-20 November 2014
- HLG-MOS Workshop, Geneva, 25-27 November 2013
- HLG-MOS Workshop, Geneva, 7-8 November 2012
- HLG-MOS Workshop, Geneva, 31 October - 1 November 2011
- HLG Seminar on the Process Oriented Approach, 19-21 April 2017, Korea
- HLG-MOS Sprint Session: Strategies to stay relevant

Expert Meetings, Workshops, Webinars and Sprints 2010-2022

- ModernStats World Workshop 2022, 27-29 June 2022, Belgrade, Serbia
- ModernStats World Workshop 2020, 27-30 October 14:00-17:00 CET, online (changed from Belgrade to online event)
- GSIM eTraining workshop, 5 November 2019, online
- ModernStats World Workshop 2019, Geneva, 26-28 June 2019
- Sub-Regional Workshop on Statistical Production Architecture and Software Sharing, Belgrade, 5-6 December 2018
- ModernStats World Workshop 2018, Geneva, 11-13 April 2018
- Workshop on Integrating Geospatial and Statistical Standards, Stockholm, 6-8 November 2017
- CSPA for Digital Transformation Workshop, Wiesbaden, 3-5 July 2017
- Workshop on Implementing Standards for Statistical Modernisation, Geneva, 21 - 23 September 2016
- CSPA Implementation Workshop 2016, Geneva, 22-24 June 2016
- Workshop on the Modernisation of Statistical Production, Geneva, 15 - 17 April 2015
- Workshop of the Modernisation Committee on Standards: International Collaboration for Standards-Based Modernisation, Geneva, 5 -7 May 2015
- Big Data project workshop, 9-12 September 2014, Heerlen, the Netherlands
- Rosstat/EFTA/UNECE Workshop on Modernization of Official Statistics, Nizhny Novgorod, 10 - 12 June 2014
- Big Data Sandbox project training, 28-30 May 2014, Rome, Italy
- Meeting on the Management of Statistical Information Systems, Dublin, 14 - 16 April 2014
- Work Session on Statistical Metadata, Geneva, 6 - 8 May 2013
- Meeting on the Management of Statistical Information Systems, Paris, 23 - 25 April 2013
- Workshop on Strategic Developments in Business Architecture in Statistics, Geneva, 7 - 8 November 2012 (HLG-MOS Workshop)
- High-level Seminar on Modernization of Statistical Production and Services, St. Peterburg, 3 - 5 October 2012
- Meeting on the Management of Statistical Information Systems, Washington D.C., 21 - 23 May 2012
- Workshop on Statistical Metadata: Implementing the GSBPM and Combining Metadata Standards, Geneva, 5 - 7 October 2011
- EFTA / Eurostat / UNECE High-level Seminar on Streamlining Statistical Production, Zlatibor, 7 - 8 July 2011
- Meeting on the Management of Statistical Information Systems, Luxembourg, 23 - 25 May 2011
- Meeting on the Management of Statistical Information Systems-2010, Meeting on the Management of Statistical Information Systems-2010, Daejeon, 26 - 29 April 2010 Daejeon, 26 - 29 April 2010
- Work Session on Statistical Metadata, Geneva, 10 - 12 March 2010

Expert Meetings, Workshops, Webinars and Sprints 2010-2022

- ONS International Data Science Meeting, 12-14 July, Newport, UK
- UNECE/ONS Machine Learning Group sprint sessions 12-14 July
- HLG-MOS Blue Skies Thinking Network sprint sessions 12-13 July
- HLG-MOS Executive Board meeting 12 July
- HLG-MOS Implementing Data Science and Modern Methods sprint sessions 13-14 July
- BSTN Cloud for Statistics Workshop, 29 June 2022, Belgrade, Serbia
- Chief Statisticians Sprint, 10 March 2022, online
- Synthetic Data Challenge, 24-28 January 2022
- Synthetic Data Webinar, 17 November 2021
- Input Privacy-Preservation Webinar, 18 November 2021
- Machine Learning Community Webinar, 19 November 2021
- Linking GSBPM-GSIM task team sprint 2-3 February 2021, online
- Statsbot Webinar, 20 November 2020, online (public event BSTN subgroup)
- Machine Learning Project Webinar, 16-17 November, online (public event UNECE project)
- Machine Learning Project online sessions, 13-15 October (internal)
- Machine Learning Sprint, 1-3 April 2020, Virtual (Webex)
- Machine Learning Sprint, 18-20 September 2019, Belgrade, Serbia
- Complementary Skills Sprint, 10 September 2019, Geneva, Switzerland
- Strategic Communication Framework Project – Phase 2 Sprint, 10-12 June 2019, Gdansk, Poland
- Strategic Communication Framework Phase 2 Sprint, 30 April - 2 May 2019, Geneva, Switzerland
- Machine Learning Sprint, 13-15 May 2019, London & New Port, United Kingdom
- GSIM revision virtual sprint 23-24 January 2019
- CSPA Data Architecture Spring Toulouse, 15-17 October 2018
- Common Statistical Data Architecture Sprint, 25-28 September 2018, Warsaw, Poland
- Strategic Communication Framework Sprint, 28 June 2018, Cork, Ireland
- Common Statistical Data Architecture Sprint, 15-18 May, Belgrade, Serbia
- Strategic Communication Framework Sprint, 12-16 February 2018, Geneva, Switzerland
- CSPA Architecture Patterns Sprint 29 January - 2 February 2018, Oslo, Norway
- HLG-MOS Sprint Session. Innovative organizations: Strategies to stay relevant, 21 November 2017, Geneva, Switzerland
- Data Architecture Project Sprint, 3-5 October 2017, Heerlen, the Netherlands
- Data Integration Project Sprint, 27-30 June 2017, Belgrade, Serbia
- LIM Variable Sprint, 19-23 June 2017, Ottawa, Canada
- Data Architecture Project Sprint, 8-10 May 2017, Rome, Italy
- CSPA Architecture Patterns Sprint, 3-5 May 2017, Rome, Italy
- Linked Open Data Sprint, 12-14 September 2016, Rome, Italy
- Data Integration Project Sprint 24-25 August 2016, Budapest, Hungary
- Big Data Sprint, 20-24 September 2015, Ljubljana, Slovenia
- Big Data Sprint, June 2015, Cork, Ireland
- CSPA Investment Sprint, 16-20 March 2015, Canberra, Australia
- CSPA Information Architecture Sprint, 23-27 February 2015, Ottawa, Canada
- Big Data Partnerships Virtual Sprint, October 2014
- Big Data Quality Virtual Sprint, September 2014
- Big Data Project Workshop, 2-3 April 2014, Rome, Italy
- Big Data virtual sprint, March 2014
- CSPA Proof of Concept Design Sprint, 10-14 June 2013, Rome, Italy
- Architecture Sprint, 8-12 April 2013, Ottawa, Canada
- GSIM Integration Workshop, 17-21 September 2012, the Hague, the Netherlands
- GSIM Sprint, 16-27 April 2012, Daejeon, South Korea
- GSIM Sprint, 20 February - 2 March 2012, Ljubljana, Slovenia

Expert Meetings, Workshops, Webinars and Sprints 2010-2022

- *Workshop on Human Resource Management and Training, 11-13 October, Brussels, Belgium*
- *Online meeting on the COVID-19 response in the area of Communication and HRMT 7-11 September (Replaced the Workshop on Human Resources Management and Training, 9-11 September 2020 Lisbon, Portugal)*
- *Workshop on Culture Evolution, 11-13 September 2019, Geneva, Switzerland*
- *Workshop on Human Resources Management and Training, Oslo, 12 - 14 September 2018*
- *Workshop on Implementing Efficiencies and Quality of Output, Geneva, 27 - 29 September 2017*
- *Workshop on Human Resources Management and Training: Developing Capabilities for the Future, Krakow, 7 - 9 September 2016*
- *Workshop on Risk Management practices in Statistical Organisations, Geneva, 25 - 26 April 2016*
- *Workshop on Human Resources Management and Training: Modernising statistics - how to get there?, Geneva, 15 - 17 October 2014*
- *Workshop on Human Resources Management and Training in Statistical Offices, Budapest, 5 - 7 September 2012*
- *Workshop on Human Resources Management and Training in Statistical Offices, Geneva, 14 - 16 September 2010*
- *Expert Meeting on Dissemination and Communication of Statistics, 13-15 September, online*
- *Expert Meeting on Dissemination and Communication of Statistics, 11-14 October 2021, online Lisbon Portugal due to Covid)*
- *Online meeting on the COVID-19 response in the area of Communication and HRMT 7-11 September (Replaced the Workshop on Statistical Data Dissemination and Communication, 7-9 September 2020, Lisbon, Portugal)*
- *Workshop on Statistical Data Dissemination and Communication, 12-14 June 2019, Gdansk, Poland*
- *Workshop on the Dissemination and Communication of Statistics, 25-27 June 2018, Cork Ireland*
- *Data Dissemination and Communication Workshop, 28-30 June 2017, Geneva, Switzerland*
- *Data Dissemination and Communication Workshop, 5-7 October 2016, The Hague, the Netherlands*
- *Workshop on the Communication of Statistics, 27-29 April 2015, Washington, D.C., USA*
- *Work Session on the Communication of Statistics, 18-20 June 2014, Geneva, Switzerland*
- *Work Session on the Communication of Statistics, 27 - 29 May 2013, Berlin, Germany*
- *Work Session on the Communication of Statistics, 27-29 June 2012, Geneva, Switzerland*
- *Work Session on the Communication of Statistics, 29 June-1 July 2011, Geneva, Switzerland*
- *Work Session on the Communication of Statistics, 30 June-2 July 2010, Paris, France*

Expert Meetings, Workshops, Webinars and Sprints 2010-2022

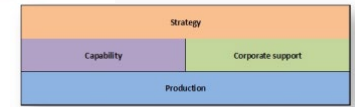
- Expert Meeting on Statistical Data Collection 'Towards a New Normal?', 26-28 October, Rome, Italy
- Expert Meeting on Statistical Data Collection, 27-30 September 2021, online
- Data Collection and the impact, challenges and opportunities of the COVID-19 pandemic: online workshop 5 – 8 October 2020 (Replaced the Workshop on Statistical Data Collection, 5-7 October 2020)
- 'New Sources and New Technologies', 14-16 October 2019, Geneva, Switzerland
- 'Resourceful Data Acquisition', 10-12 October 2018, Geneva, Switzerland
- 'Overcoming Challenges through Modernisation' , 10-12 October 2017, Ottawa, Canada
- 'Visions on Future Surveying', 3 – 5 October 2016, the Hague, the Netherlands
- Riding the Wave of the Data Deluge, 29 April – 1 May 2015, Washington D.C., United States of America
- Seminar on statistical data collection, 25 - 27 September 2013, UNECE, Switzerland, Geneva
- New frontiers in statistical data collection, 31 October - 2 November 2012, UNECE, Switzerland, Geneva
- Expert Meeting on Statistical Data Editing, 3-5 October 2022, online
- Workshop on Statistical Data Editing, 15-17 April 31 August- 4 September 2020, online (Postponed and Changed an online event)
- Workshop on Statistical Data Editing, 18-20 September 2018, Neuchatel, Switzerland
- Work Session on Statistical Data Editing, 24-26 April 2017, The Hague, Netherlands
- Work Session on Statistical Data Editing, 14-16 September 2015, Budapest, Hungary
- Work Session on Statistical Data Editing, 28-30 April 2014, Paris, France
- Work Session on Statistical Data Editing, 24-26 September 2012, Oslo, Norway
- Work Session on Statistical Data Editing, 9-11 May 2011, Ljubljana, Slovenia
- Expert meeting on Statistical Data Confidentiality, 1-3 December 2021, Poznan, Poland (if Covid permits: to be confirmed)
- 2019 Work Session on Statistical Data Confidentiality, 29-31 October 2019, the Hague, the Netherlands
- 2017 Work Session on Statistical Data Confidentiality, 20-22 September 2017, Skopje, North Macedonia
- 2015 Work Session on Statistical Data Confidentiality, 5-7 October 2015, Helsinki, Finland
- 2013 Work Session on Statistical Data Confidentiality, 28-30 October 2013, Ottawa, Canada
- 2011 Work Session on Statistical Data Confidentiality, 26-28 October 2011, Tarragona, Spain













HLG-MOS models and Standards

- **Generic Statistical Business Process Model 5.1** (GSBPM)
- **Generic Statistical Information Model 1.2** (GSIM)
- **Common Statistical Production Architecture 2.0** (CSPA)
- **Generic Activity Model for Statistical Organizations 1.2** (GAMSO)
- **Generic Statistical Data Editing Model 2.0** (GSDEM)
- **Common Statistical Data Architecture 2.0** (CSDA)

- Various Revision & updates
- Metadata Glossary
- Alignment of GSBPM OP with GAMSO
- GSBPM Quality Indicators
- Linking GSBPM and GSIM
- GeoGSBPM
- ModernStats model governance guide
- CSPA Global Artefacts Catalogue

- GSBPM "Task"
- Roadmap for Implementing ModernStats Standards
- CSPA Logical Information Model (CSPA LIM)
- Linked Metadata & Core Ontology
- CSDA ArchiMate model and guidelines
- ModernStats World and other Workshops

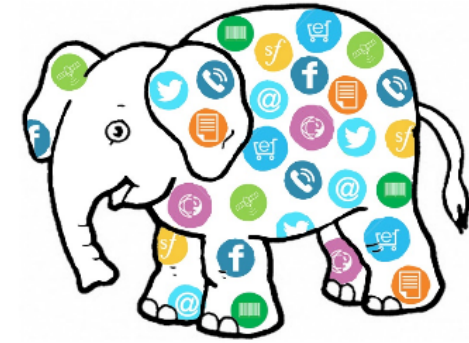


	<p>GSBPM Current version of GSBPM v5.1 available here</p>
	<p>Roadmap for Implementing ModernStats Standards Modernisation Maturity Model (MMM) and MMM Roadmap Tools</p>
	<p>Information flow within GSBPM using GSIM New Information flow within GSBPM described using Generic Statistical Information Model (GSIM)</p>
	<p>Geospatial view of GSBPM New Geospatial-related activities and considerations needed for the production process</p>
	<p>GSBPM Tasks New Finer-level of activities under the eight phases of the process and sub-processes</p>
	<p>Clickable GSBPM Clickable GSBPM v5.1</p>
	<p>Learning GSBPM Are you new to GSBPM and want to learn about it? Check out here for introductory presentations from past training and workshops</p>
	<p>Uses of GSBPM Use cases of GSBPM (mapping specific processes to GSBPM, using GSBPM for managing statistical programmes and etc.)</p>
	<p>Quality Indicators for GSBPM Quality indicators for each GSBPM subprocess</p>
	<p>Previous versions of GSBPM Previous versions of GSBPM (v1.0, v2.0, v3.1, v4.0 and v5.0)</p>
	<p>GSBPM resources repository Click here to browse all resources in the GSBPM wiki space and search by</p>
	<p>GSBPM Discussion Forum Questions about GSBPM? Post them here!</p>

Initiating/Leading work in Official Statistics

• Big Data:

- Classification of Types of Big Data
- Guidelines for the establishment and use of partnerships
- Big Data Quality Framework
- Big Data Inventory
- Etc. etc..



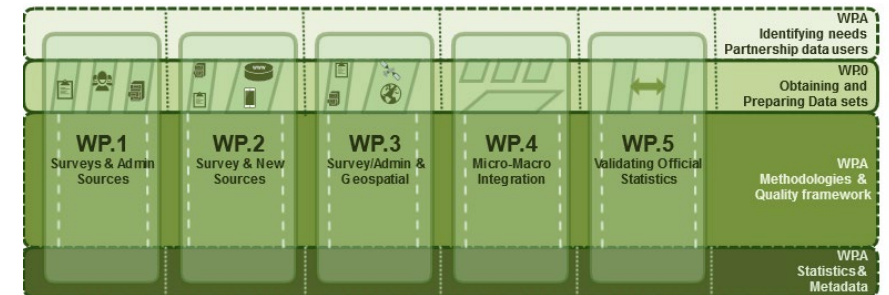
• Machine Learning

- Ethical Consideration in the Use of ML
- Quality Framework for Statistical Algorithm
- Model Retraining
- Training & learning material
- Etc. etc.....



• Data Integration

- Guide to Data Integration for Official Statistics
- Data integration use cases
- Data integration survey
- *Asia-Pacific Guidelines to Data Integration for Official Statistics*

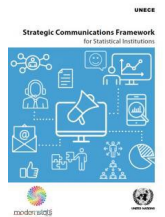


Initiating/Leading work in Official Statistics HRMT

- Guidelines for Managers
- Guidelines on Risk Management
 - risk appetite as a framework for decision making
 - training modules in the various stages of risk management
 - common risks faced by statistical organisations
- Strategic Communication Framework
- Brand and reputation management
- Toolkits for blended working for: manager, employer and employee
- And more....
 - Key Capabilities for Modernising Statistical Organisations
 - Visions, Missions and Target Operating Models
 - Statistical and End User IT Training Framework - based on GSBPM Model (2017)
 - Statistical Training Framework aligned to the GSBPM
 - organisational barriers to international cooperation
 - Big Data competencies profiles
 - Etc..

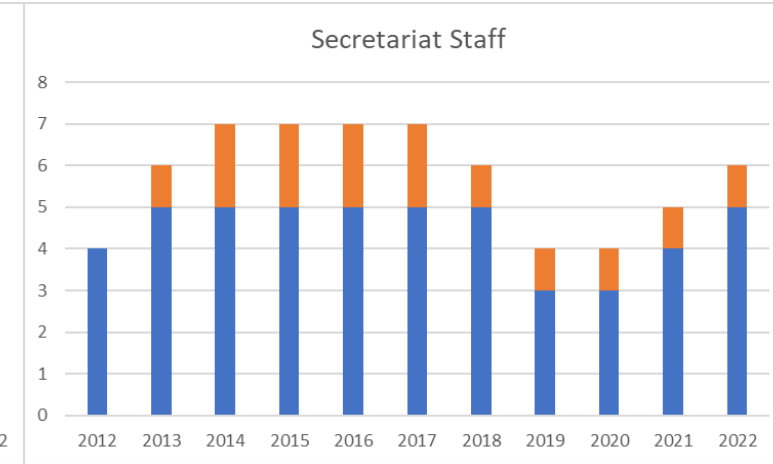
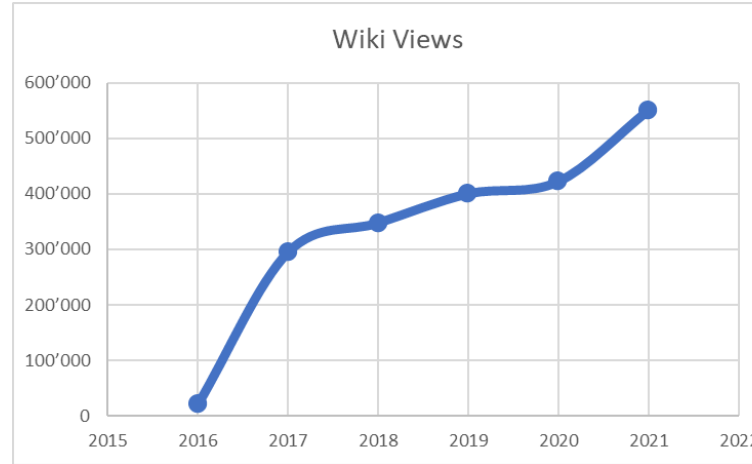


Human resources
and more...



Resources/tools

- Secretariat: 6
- Project Manages: 4
- Wiki (2022: 50 spaces)
- Tools: Github, Slack, Slido, Miro, Jamboard44 etc.
- Webex/Teams (2022: >250 calls)
- Expert meetings, Workshops, Sprints, Pitch talks etc.



Jackie (Wai Kit)
Taeke
Chris
Gerald
Tetyana
InKyung

