Pre-conference workshop descriptions:

Draft Programme - Tuesday 23 September, Pre-Conference Day, Venue: Statistics Norway, Oslo					
09:00 – 09:30	***Registration and coffee***				
09:30 – 09:50	***Welcome and Information***				
Parallel workshops					
10:00 - 10:50	**Python in GIS - by Statistics Poland**	**GeoNode** - Overview - **by CGI**	**GSGF Europe in Action - by GSGF-CARE project**	**Earth Observation-workshop** - Getting started with EO for statistics - **by ESA SEF**	**GeoAI for statistics** - Applying GeoAI to satellite imagery & Using generative AI for surveys - **by ESRI**
10:50 – 11:00	*Break*				
11:00 – 12:00	**Python in GIS, cont.**	**GeoNode** - End users and platform administration - **by CGI**	**GSGF Europe in Action, cont.**	**Earth Observation-workshop, cont.**	**GeoAI for statistics, cont.**
12:00 – 12:30	*Lunch*				
12:30 – 13:20	**Repeated: Python in GIS**	**Repeated: GeoNode** - Overview	**Transition to register-based censuses:** Prerequisites & Overview - **by Statistics Norway**	**Earth Observation-workshop, cont.**	**Deus ex Geomachina** - GeoAI - Learn how to gain geospatial superpowers with Large Language Models - **by Norkart AS**
13:20 – 13:30	*Break*				
13:30 – 14:30	**Repeated: Python in GIS, cont.**	**Repeated: GeoNode** - End users and platform administration	**Addressing systems:** National examples - **by Austria, The Netherlands and Sweden**	**FAIR Calculator** - Tool for evaluation of spatial data - **by The Norwegian Mapping Authority**	**Deus ex Geomachina, cont.**

Alexander S. Nossum, PhD, Innovation manager, Norkart AS, Norway
Mathilde Ørstavik, MSc, Head of AI, Norkart AS, Norway

Deus ex Geomachina: Learn how to gain geospatial superpowers with Large Language Models

Join our practical workshop and learn to combine the power of modern AI with geographic data and analysis. During this session, you will:
Learn how **Large Language Models (LLMs)** can transform and streamline geographic analyses.
Get hands-on experience connecting **ChatGPT-like models to PostGIS databases**.
Explore how to ask complex geographic questions using **natural language**.
Build **interactive maps and visualizations** controlled by AI.
This workshop is designed for both **beginners and experienced geomaticians** who want to explore the analytical tools of the future.
Bring your laptop and join us to discover where artificial intelligence meets geographic intelligence!
Minimum requirements: No prior AI experience is necessary – just bring your geomatics knowledge, a laptop, and a good dose of curiosity!

Pascal Coulon, Vice-President Consulting Expert, CGI, UK

Implementation of GeoNode

Two one-hour workshops centred around the implementation of GeoNode, each tailored to a specific perspective:

1 **Overview of the Product**
This session will introduce the capabilities and architecture of GeoNode, providing a high-level understanding of its components, use cases, and benefits.

2 **End Users and Platform Administrator**
A practical session designed for those interacting with GeoNode for data consumption and basic data publishing.
This will include hands-on activities such as navigating the interface, searching and visualising data, and uploading content.
It will also focus on, user rights, system configuration, and basic maintenance.

Minimum requirements:
Attendees must bring a laptop with a reliable internet connection.
Sessions will require access to an externally hosted GeoNode instance (e.g., https://cgi-geonode-wks.uksouth.cloudapp.azure.com/).

Mirosław Migacz, Statistics Poland
Amelia Wardzińska-Sharif, Statistics Poland

Python in GIS

A workshop to demonstrate the possibilities of GIS programming in Python, using QGIS.
See how to integrate statistics with geospatial data and visualize results solely by writing code.
You will get to know Geopandas - the easiest GIS Python module.
Minimum requirements: Basic Python skills recommended, but not essential. Attendees must bring their own laptop with QGIS installed

GSGF-CARE project consortium

GSGF (Europe) in action

The 'GSGF Europe in Action' is an interactive session on enhancing the capacity of countries and organisations to implement the Global Statistical and Geospatial Framework (GSGF), focusing on the European version and in the regional context.

The session breaks down into two main blocks: first, the evaluation of the situation on statistical-geospatial integration capacity and maturity through a high-level self-assessment tool, and second, practical implementation of GSGF Europe by considering a national action plan from Finland, following a project (GSFI) that interpreted the framework within the national operating environment. In addition, a glimpse of the available reference documentation, guidance materials and resources, involving both technical and non-technical issues, that facilitate a more targeted and effective implementation of GSGF Europe will be briefly showcased.

In a nutshell, the 'GSGF Europe in Action' session aims to support the GSGF Europe implementation from theory to practice by providing a more hands-on learning experience that allows participants to pose questions, share their knowledge and challenges, and engage with each other in order to gain a more in-depth understanding of the framework.

Objectives

- To get to know the GSGF Self-assessment Tool and understand how to use it in your organisation and/or institutional/national environment.

- To showcase the available reference documentation and guidance materials supporting the implementation of the GSGF Europe, following the outcomes of the GEOSTAT projects.

- To gain a more in-depth understanding of GSGF Europe and get practical and straightforward guidance on how to implement the framework in your organisation and/or institutional/national environment.

Target audience

Experts – from operational to top management level - interested in and committed to implementing GSGF Europe in their organisations and/or institutional/national

Minimum requirements:

Laptop recommended, not mandatory.

Kate Hess, ESRI

Applying GeoAI to satellite imagery & Using generative AI for surveys

This hands-on session will cover how to use AI (specifically deep learning) to identify, classify, and extract features from satellite imagery.

Deep learning is a powerful tool for NSOs to jump start enumeration planning, save time in the field for housing and agricultural surveys, and proactively monitor changes over time.

This session will start with an overview of the latest in geospatial usages of AI and showcase work being done by NSOs around the world, then will transition to hands-on exercises so you can learn to implement these models in your own work. We will:

1) Explore spectral signature profiles and the remote sensing science behind the AI models. Learn how these tools go beyond the visual spectrum to identify cultivated areas and differentiate crop types.
2) Run a deep learning AI model to identify agricultural fields from imagery, classifying them as cultivated or uncultivated.
3) Run a pre-trained deep learning model to detect and extract building rooftops from imagery.
4) Use generative AI to create a survey, and see how machine vision can summarize information from cell phone images to autofill form questions.

Minimum requirements: No GIS experience needed but please bring your laptop! ArcGIS log ins will be provided for the training.

Arvid Lillethun, The Norwegian Mapping Authority

FAIR calculator for evaluation of spatial data

FAIR is a framework being used widespread around the world. It is easy to understand.
However, the FAIR principles are not clear concerning use towards spatial data.

There needs to be a practical interpretation of the important criteria for evaluation of such data.
The Norwegian Mapping Authority has developed a tool that is widely used and accepted among different data providers/producers and users.

The methodology and tool are also spread and being used in the neighbouring countries, in maritime communities, presented for the UNGGIM and now to be implemented in Arctic SDI-programme.

The session will include an introduction to https://www.go-fair.org/fair-principles/, a demo of the calculator to show its wide application and finally a round of questions and exchange of ideas on how to make the calculator suitable for geo-statistical data in the statistics community.

Minimum requirements: No particular requirements

Helge Brunborg, demographer at Statistics Norway.
Addressing systems, some national examples: Presentations by Sweden, Austria, Netherlands

Transition to register-based censuses: Prerequisites & Overview.

Addressing systems: examples of national approaches

1 Transition to register-based censuses, prerequisites, an overview

There has been a rapidly increasing interest worldwide in register-based censuses in recent years. Sometimes countries have unrealistic plans about the prerequisites for conducting such censuses. Helge will give an overview of the global development of register-based censuses, including the most important prerequisites. Helge will present examples from several countries, including Norway, which conducted its first fully register-based census in 2011.
The session will be held by Helge Brunborg, PhD, a demographer from Statistics Norway. He has wide experience of using administrative registers for statistical purposes, in Norway and elsewhere. He participated in the expert group developing the UNFPA eLearning Course "Transitioning to a Register-Based Census", 2020-2023.

2 Addressing systems, some national examples. Presentations by Austria, The Netherlands and Sweden

Minimum requirements: No particular requirements

Phillip Harwood, ESA SEF (ESA Stakeholders Engagement Facility)

Earth Observation-workshop, Getting Started with Earth Observation for Statistics - by ESA SEF (ESA Stakeholders Engagement Facility)

Background and Rationale

Earth Observation provides unique, timely, and spatially explicit data that can complement traditional statistical methods, especially in monitoring land, water, ecosystems, and agricultural resources. Despite the growing availability of EO data (e.g., Copernicus, commercial providers), many statistical offices and related institutions lack the practical knowledge and skills to access, interpret, and apply EO information in their workflows.

This workshop aims to provide a hands-on introduction to the basics of EO, demonstrate accessible platforms and tools, and highlight key applications relevant to statistics and environmental accounting.

Objectives

The workshop will:

1. Introduce participants to the fundamentals of EO sensors, data types, and their pros and cons.
2. Provide practical guidance on accessing EO data through free and user-friendly platforms.
3. Showcase concrete use cases of EO applied to statistics and environmental monitoring.
4. Build basic skills to interpret EO datasets and understand their potential integration into statistical workflows.

Format and Methodology

- Short presentations introducing key concepts.
- Hands-on navigation of EO platforms.
- Real-world examples

Expected Skills & Learning Outcomes

- EO Data Understanding: Recognize main types of EO sensors and their applicability for different statistical domains.
- EO Data Access and Use: Navigate online EO platforms, identify suitable datasets, and perform basic data retrieval.
- EO Application Domains: Understand practical examples of EO applications
- Critical Thinking on EO Data Quality: Evaluate strengths and limitations of EO datasets and integrate them cautiously with official statistics.
- Increased awareness of EO as a complementary data source for statistics.

Agenda

10h00-10h50: Basics of EO (50 min)

- Overview of EO: what it is and why it matters
- Types of sensors: optical, radar (SAR), LiDAR
- Spatial, temporal, and spectral resolutions: strengths and limitations
- Pros and cons of EO compared to traditional survey methods

11h00-12h00: Getting Started with EO Tools (60 min)

- How to access open EO platforms: Copernicus Open Access Hub, Copernicus Browser, etc.
- Demonstration: navigating Copernicus Browser and downloading Sentinel-2 data
- Introduction to basic visualization and interpretation of EO data

12h30-13h20: Continuation of EO Tools, plus Key Examples of EO in Practice (50 min)

- Follow up any outstanding items from the previous session
- Some key examples:
  - Agricultural statistics: crop monitoring and yield estimation
  - Ecosystem accounting: mapping land cover and forest change
  - Water quality monitoring: detecting turbidity, chlorophyll, and eutrophication indicators
- Discussion on opportunities and challenges for NSOs and statistical reporting

The ESA SEF team will be available during the main conference for follow up and to discuss any individual issues.

Minimum requirements:

Laptop recommended, not mandatory.