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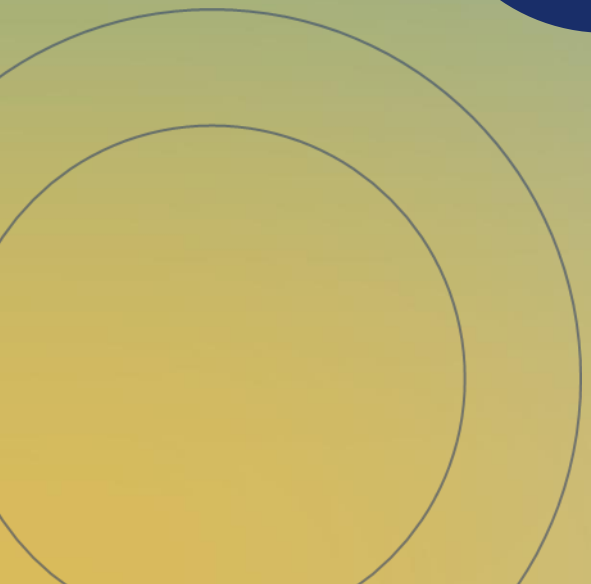

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SESSION 3 – GEOSTATISTICS I

Geospatial Enhancements in Statistical Production at Statistics Portugal

5 JUNE 2024

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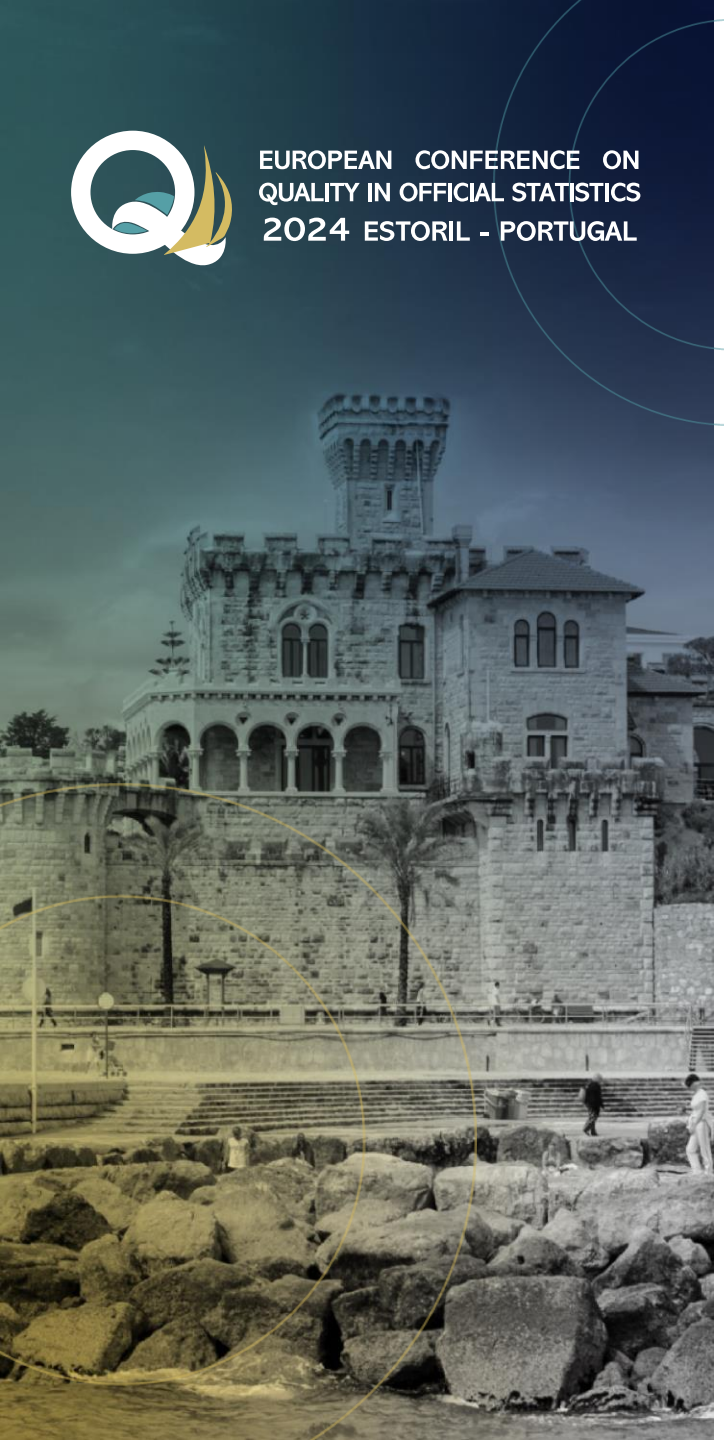

Geospatial Enhancements in Statistical Production at Statistics Portugal

The work was carried out under the ongoing **2023-PT-GEOS** Grant (*Enhanced location data and quality framework for geospatial statistics*), an EU funded project in the following topic **'SMP-ESS-2023-GEOS-IBA — Geospatial Statistics'**

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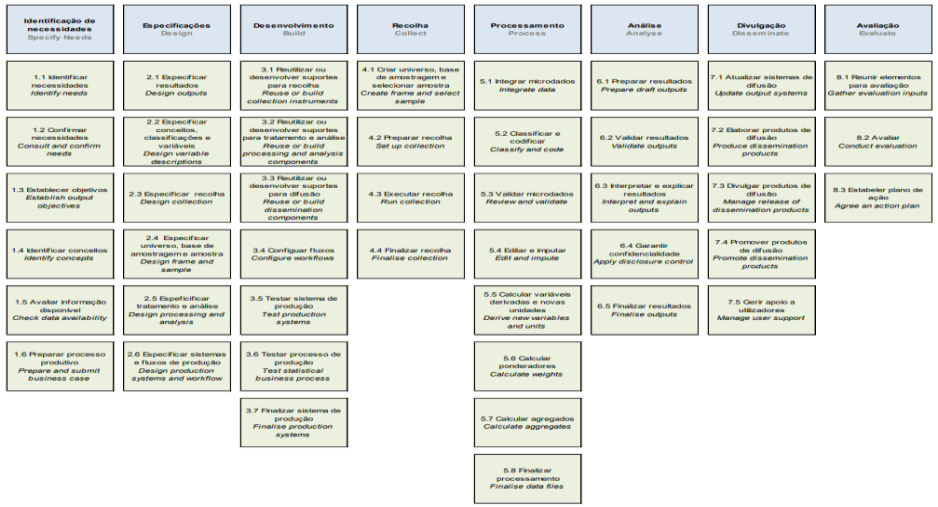
Documenting the statistical business process in Statistics Portugal

The Statistical Production Process Manual (MPPE) – 3rd edition (2020)



The model is aligned with the GSBPM (V. 5.1, 2019) with the addition of one more operational layer - the **business process matrix at the task level**

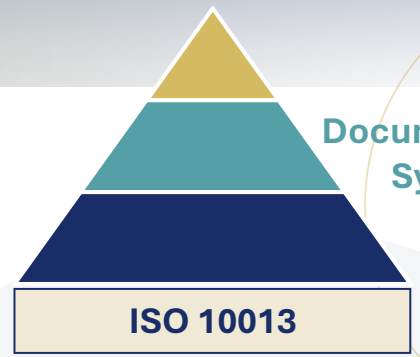
Statistical Business Process Handbook (e.g., reference to ISO 9001, ISO 27001)

+

Adopted model (= GSBPM)

=

Business process matrix
Main tasks of each sub-process
(120 tasks in total)



- **Phase** and **sub-process** description
- **Input data/outputs** for the sub-processes and specific documentation to be produced
- **Tasks** involved, including chronological order, responsible parties and other stakeholders, as well as practical applicability according to the type of statistical activity, type of data source and type of statistical results
- The main tasks are linked to the planning IT application (SIGINE)

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Phase (1st layer)

2.1 Phase 1 – Specify Needs

Organisation and description of the phase

Phase 1 – Specify Needs					
Subprocess 1.1	Subprocess 1.2	Subprocess 1.3	Subprocess 1.4	Subprocess 1.5	Subprocess 1.6
Identify needs	*Consult and confirm needs*	*Establish output objectives*	*Identify concepts*	*Check data availability*	*Prepare and submit business case*
1 task	*1 task*	*1 task*	*1 task*	*2 tasks*	*5 tasks*

This phase is the first of the statistical production process, with most subprocesses and respective tasks being associated with the analysis of the feasibility identified and substantiated information needs

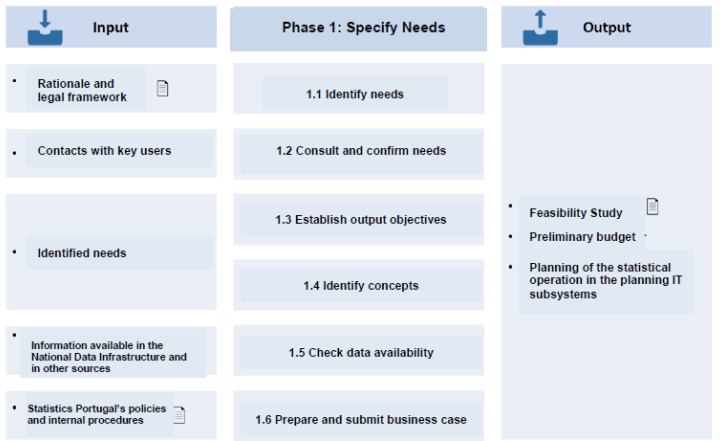
These preliminary characterisation tasks are However, the assumptions of these activities to methodological changes that were the basis

The objective of this phase is to support decisi the implementation of a new statistical operat dialogue between organic units, culminating i proposal for a new statistical operation, desig the "Feasibility Study" is preliminary in nature the main technical and resource components a

Summary of Phase 1 – Specify needs

The following figure schematises the first phase of the production process, highlighting the input information, the expected outputs and the specific documentation to be produced ( ), duly identified:

Figure 3: Summary of Phase 1 – Specify needs



Summary of the phase with input and outputs

Sub-process (2nd layer) and Task (3rd layer)

Subprocess 1.1 - Identify needs

The "Identify needs" subprocess is the first subprocess associated with the design of a statistical operation, having identified a relevant task to characterise it. This is a task prior to the conduct of a new statistical operation, comprising the contextualisation of the operation, namely regarding the legal framework, as well as the identification of the main users and their needs. The output of this task constitutes information to be integrated in the "Feasibility Study" (implemented in subprocess 1.6 - "Prepare and submit business case") and later in the Methodological Document (implemented in subprocess 3.7 - "Finalise production systems").

This subprocess is entirely associated with new statistical operations.

Matrix structure at the task level

Table 2: Main tasks of the "Identify needs" subprocess

Task no.	Task description	Responsible	Stakeholder	Applicability					SIGINE Task Code	SIGINE task	Notes and remarks
				Statistical operations: New/ Ongoing	Survey		Administrative source	Statistics: Primary/ Derived			
					Exhaustive	By sampling					
1	Define the context of the statistical operation, including the rationale and legal framework, the information needs, as well as the main users	DM		New	Yes	Yes	Yes	Primary statistics Derived statistics	351	DESIGN - Definition and planning	Information to be included in the feasibility study and methodological document Categories associated with information needs (point III.2 of DMET): legal obligations; direct request for information; outputs of user needs surveys; information needs of other statistical operations; specific contract/protocol with an external party; other. Categories associated to the main users (point IV.5 of DMET): users of the National Statistical System; other national users; EU users and other international users. Task related to the definition of objectives (subprocess 1.3) and the design of outputs (subprocess 2.1)

Geospatial development in the statistical production matrix (2.0 version)

- **8 out of the mapped 120 tasks** (6.67%) included notes and remarks embodying geospatial aspects, namely related to the **Geographic Information Infrastructure (IIG)** capabilities and functional requirements:

Task no. 11	Task no. 15	Task no. 17	Task no. 30	Task no. 31	Task no. 32	Task no. 44	Task no. 51
Plan the statistical operation in the supporting IT systems	Identify the methods and modes used and functional requirements for collecting and receiving micro-data	Specify the functional requirements for the integration of micro-data in the NDI	Specify the functional requirements for integrating the data in the DW and for supporting data processing and analysis	Specify the functional requirements for disseminating statistical information	Specify the requirements of the IIG to meet production needs (e.g., geocoding)	Enable the IIG according to the specified requirements	Select the sampling frame from the specified reference frame and analyse its quality
1.6 - Prepare and submit business case	2.3 – Design collection	2.3 – Design collection	2.5 - Design processing and analysis	2.1 – Design outputs	2.6 – Design production systems and workflows	3.4 – Configure workflows	3.4 – Configure workflows

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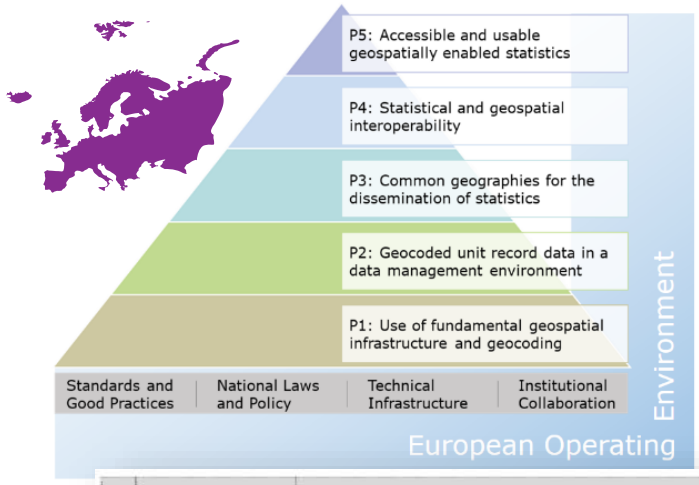
Preliminary results from the geospatial enhancements in the MPPE update

(2024) In the **task matrix**, resulting from structural changes, adding a new lens and implementing innovations



GSGF Principle	Requirement Nr.	Requirement Name	Recommendation Nr.	Recommendation Name	Recommendation Description
P 1	1.1	Use data from National Spatial Data Infrastructures	1.1.1	Use authoritative and INSPIRE compliant geospatial data and services	Any geospatial information used to geospatially enable or display statistical d for geocoding), or to produce statistical content, should preferably be built o data and services.
P 1	1.1	Use data from National Spatial Data Infrastructures	1.1.2	Implement unique identifiers and lifecycle information	Following INSPIRE and UN-GGIM: Europe Core Data specifications, the use of information is recommended, in order to describe the temporal characteristi between versions). Use of unique and persistent identifiers and lifecycle info time and space, thus facilitating integration of geospatial and statistical infor
P 1	1.1	Use data from National Spatial Data Infrastructures	1.1.3	Define roles and responsibilities of organisations involved in production of geospatial information	The different roles and responsibilities of various organisations involved in pr defined through formal protocols, agreements and Memorandum of Underst maintains what information and how often data are updated. Custodian and identify the most relevant stakeholders for a geospatial data source. MoU co statistical integration within the design and production of statistical indicator
P 1	1.1	Use d			

	GSGF Principles					
	Total	1	2	3	4	5
Requirements	18	3	5	2	4	4
Recommendations	66	12	20	9	13	12

Task no.	Task description	Responsible	Stakeholder	Applicability: Statistical operations: New/ Ongoing	Applicability: Survey: Exhaustive	Applicability: Survey: By sampling	Applicability: Administrative source	Applicability: Statistics: Primary/ Derived	SIGINE Task Code	SIGINE task	Notes and remarks	GSBPM Phase	GSBPM Subprocess

129 Tasks

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Preliminary results from the geospatial enhancements in the MPPE update

- **45 out of the mapped 129 tasks** (34.9%)

Principle 1

- 23 tasks

Recommendations:

- 1.1.1
- 1.1.2
- 1.1.3
- 1.1.4
- 1.2.1
- 1.2.2
- 1.2.4
- 1.3.1
- 1.3.2
- 1.3.3

Principle 2

- 26 tasks

Recommendations:

- 2.1.1, 2.1.2, 2.1.3, 2.1.4
- 2.2.1, 2.2.2, 2.2.3
- 2.3.1, 2.3.3, 2.3.4, 2.3.5, 2.3.6
- 2.4.1, 2.4.2, 2.4.3
- 2.5.1, 2.5.2

Principle 3

- 9 tasks

Recommendations:

- 3.1.1
- 3.1.2
- 3.1.3
- 3.1.4
- 3.1.5
- 3.1.6
- 3.2.1
- 3.2.2

Principle 4

- 6 tasks

Recommendations:

- 4.1.3
- 4.1.4
- 4.2.1
- 4.2.2
- 4.2.3
- 4.3.1
- 4.4.2
- 4.4.3

Principle 5

- 7 tasks

Recommendations:

- 5.2.1
- 5.2.4
- 5.3.1
- 5.4.2
- 5.4.4

All 5 Principles

- 1 task (1.1 Identify needs)
- 2 tasks (1.6 Prepare and submit business case)
- 1 task (3.6 Test statistical business process)
- 2 tasks (3.7 Finalise production systems)
- 1 task (6.2 Validate outputs)

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Main conclusions

- More extensive and detailed geospatial enhancements in the MPPE
- Develop and document considerations on the geospatial (data) requirements and technical specifications (e.g., administrative data and emerging data sources)
- Define overarching quality management activities handling the geospatial components across the statistical production process
- Transpose the Requirements and Recommendations and the supporting materials of GSGF Europe to the national case (e.g., geospatial indicators and assessing the statistical-geospatial maturity level)

Future work

- Ongoing development of the update and enhancement of the MPPE with formal geospatial considerations across the different statistical operations (e.g., lessons learned)
- Guiding documentation and related in-house materials for standardised geospatial statistics and moving forward with the GSGF Europe implementation (e.g., improvement actions)

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