

# GEOSTAT 4: Proposal for Geospatial Enhancements of the ESS Quality Assurance Framework

GEOSTAT 4

---

Title: GEOSTAT 4: Proposal for Geospatial Enhancements of the ESS Quality Assurance Framework

Author: GEOSTAT 4

Project: Eurostat ESSnet grant project GEOSTAT 4

Grant agreement number: 945503 - 2019-FI-GEOSTAT4

It is permitted to copy and reproduce the content in this report. When quoting, please state the source.

© GEOSTAT 4 and Eurostat 2021

---

## 1. Purpose of this document

The ESS Code of Practice<sup>1</sup> (CoP) and the ESS Quality Assurance Framework<sup>2</sup> (QAF) constitute the common quality framework for the ESS. Based on these framework high-quality European Statistics are developed, produced and disseminated.

While within this framework various types of data (e.g. survey data, administrative data, privately held data) are addressed in general, geospatial data are not mentioned specifically. This is severe, as the QAF does not explicitly ensure e.g. a mandate of NSOs to access geospatial data or a regular update of geospatial data. In order to fill this gap and to appropriately map geospatial data within this framework, the aim of this document is to propose changes to the QAF regarding geospatial aspects.

## 2. How the document was produced

This document is a result of GEOSTAT 4 WP 3 Quality and was produced by a stepwise approach. It was produced in four steps:

1. It was discussed among project partners which principles of the Code of practice are relevant candidates for possible enhancements of the QAF. Subsequently the principles were distributed in a way that for each relevant principle a pen holder and a reviewer was assigned.
2. Penholders suggested possible changes and after sending them to the WP-leader a first draft of the document was generated. The document was augmented by comments to explain the rationale for changes.
3. A final review round by all project partners was conducted in order to finally calibrate the document.
4. The proposal finally underwent a written consultation by the Eurostat Working Group Quality. The outcome was used to arrive at a final list of proposals.

---

<sup>1</sup> European Statistics Code of Practice: <https://ec.europa.eu/eurostat/web/products-catalogues/-/KS-02-18-142>

<sup>2</sup> QAF: Quality Assurance Framework of the European Statistical System V2.0 <https://ec.europa.eu/eurostat/documents/64157/4392716/ESS-QAF-V1-2final.pdf/bbf5970c-1adf-46c8-afc3-58ce177a0646>

### 3. Nature of the changes

Of course, the QAF should provide stability over time. Nevertheless, when it was created it was presented as a living document which can and should react to developments regarding statistical production. The technological development concerning the world of geospatial applications widened the possible use and dissemination of geospatial data. Given this, a change of the QAF can be considered.

Generally, there are two possible ways how changes in the QAF can be introduced. It is neither the aim nor found necessary to make fundamental changes to encounter for the integration of geospatial aspects. Mostly slight enhancements of the text describing some methods were considered to be sufficient – for instance by introducing a small wording in order to include geospatial aspects. In some occasions it was found useful to include a new method.

### 4. Proposed changes in the QAF presented to the WG Quality

The proposal presented to the Working Group Quality for the written consultation consisted of 18 textual enhancements and 6 new methods. Table 1 presents an overview of the methods, for which changes of the QAF were proposed by the GEOSTAT team, including the nature of and the rationale justifying the 24 proposed changes

*Table 1: Proposal by the GEOSTAT consortium consisting of 24 changes (6 new methods and 18 textual enhancements).*

Principle	Indicator	Method	Nature of change	Vote of the WG Quality
1bis: Coordination and cooperation	1bis.1	<b>11. Coordinated training programme</b>	Enhancement of text	No
	<i>Rationale for change: The goal is to equip staff from diverse specialisations with geospatial knowledge.</i>			
	1bis.3	<b>New Method 6. Cooperation with National Geospatial Information Agencies and other holders of geospatial data</b>	Proposal for a new method	Yes
<i>Rationale for change: National Geospatial Information Agencies are more and more considered to be crucial partners for NSI's.</i>				

Principle	Indicator	Method	Nature of change	Vote of the WG Quality	
2: Mandate for data Collection	2.1	<b>1. Mandate of statistical authorities</b>	Enhancement of text	No	
		<i>Rationale for change: The goal is to ensure a mandate of NSOs to access geospatial data, which is not clear in the existing formulation.</i>			
		<b>5. Procedures for exploring data sources</b>	Enhancement of text	No	
		<i>Rationale for change: The goal is to build awareness for the exploration of geospatial data.</i>			
	2.2	<b>5. Agreements between statistical authorities and administrative data holders</b>	Enhancement of text	Yes	
		<i>Rationale for change: The aim is to emphasize regional and geographical aspects.</i>			
		<b>New method 12. Availability of geospatial data.</b>	Proposal for a new method	Yes	
		<i>Rationale for change: The goal is to regulate the availability of the most current geospatial data.</i>			
2.4	<b>Regards methods 1,2,3,7,8,9,10</b>	Enhancement of text	No		
	<i>Rationale for change: Diversification of privately held data in several methods.</i>				
4: Commitment of Quality	4.2	<b>2.A culture of continuous improvement</b>	Enhancement of text	No	
		<i>Rationale for change: The goal is to ensure a mandate of NSOs to access information to geospatial data, which is not clear in the existing formulation.</i>			
	4.4	<b>New method 10 Assessing and monitoring the quality of geospatial output</b>	Proposal for a new method	Yes	
<i>Rationale for change: The goal is to build a framework of indicators to measure quality of geospatial data.</i>					
5: Statistical Confidentiality and Data Protection	5.5	<b>6.Treatment of identifiers</b>	Enhancement of text	Yes (modified)	
		<i>Rationale for change: The goal is to include geographic identifiers.</i>			

Principle	Indicator	Method	Nature of change	Vote of the WG Quality
7: Sound Methodology	7.3	<b>1. Update of registers and frames</b>	Enhancement of text	Yes
		<i>Rationale for change: The goal is to widen the issue by ground properties.</i>		
8: Appropriate Statistical Procedures	8.3	<b>16. Documentation and sharing of data coding methods .</b>	Enhancement of text	Yes
		<i>Rationale for change: The goal is to include geocoding and georeferencing.</i>		
11: Relevance	11.2	<b>1. Statistical work programme priorities</b>	Enhancement of text	No
		<i>Rationale for change: The goal is to specify that the statistical work programmes are aligned with the work programmes of the Geospatial and Administrative data communities.</i>		
	11.3	<b>4. Satisfaction of key users with specific outputs.</b>	Enhancement of text	Yes (modified)
		<i>Rationale for change: The goal is to highlight the aspects of statistics which are specifically connected with geospatial components.</i>		
12: Accuracy and Reliability	12.1	<b>1. Assessment and validation systems</b>	Enhancement of text	No
		<i>Rationale for change: Goal is to include geospatial data as a separate category.</i>		
		<b>New method 5. Validity of geospatial information</b>	Proposal for a new method	Yes
		<i>Rationale for change: The goal is to emphasize the importance of the validity of geoinformation.</i>		

Principle	Indicator	Method	Nature of change	Vote of the WG Quality	
14: Coherence and Comparability	14.1	<b>1. Procedures and guidelines to monitor internal coherence</b>	Enhancement of text	Yes	
		<i>Rationale for change: The goal is to provide a more exact enumeration of geographical data.</i>			
	14.2	<b>1. Identification of changes to concepts.</b>	Enhancement of text	Yes	
		<i>Rationale for change: The goal is to underline the importance of territorial classifications.</i>			
		<b>3. Publication and explanation of breaks</b>	Enhancement of text	No	
<i>Rationale for change: The goal is to underline the geospatial aspects of this issue.</i>					
15: Accessibility and Clarity	15.2	<b>1. Modern means of dissemination and communication</b>	Enhancement of text	No	
		<i>Rationale for change: The goal is to cover geospatial aspects here as well.</i>			
		<b>New Method 8. Statistics as a service</b>	Proposal for a new method	Yes	
		<i>Rationale for change: The goal is to map the demand on technical accessibility of geospatial information.</i>			
	15.3	<b>New Method 9. User's interactive ability.</b>	Proposal for a new method	Yes	
		<i>Rationale for change: The goal is to emphasize the need on interactively usable tools.</i>			
		<b>5. Provision of custom-designed output</b>	Enhancement of Text	Yes (modified)	
		<i>Rationale for change: The goal is to highlight both, statistics with a higher spatial resolution and (geospatial) services as custom design output.</i>			
15.5	<b>1. Accordance of metadata with European Standards</b>	Enhancement of Text	No		
	<i>Rationale for change: The goal is to include European standards as well as those relevant for geodata.</i>				

---

## 5. The consultation of the Working Group Quality

The document with the 24 proposed changes was presented to the Working Group Quality (WGQ) and it was discussed in a special Working Group meeting on October 19<sup>th</sup> 2021. Members of the WGQ transmitted their comments in written form to the quality unit of Eurostat, where a summarized list of the comments was prepared and provided to the work package leader. The comments consisted mostly of statements if member states are in favour of a proposal or not, additionally some textual modifications of the changes were suggested. Depending on the majority principle it was then decided if a change should be included in the final proposal or not. As a general observation it can be stated that the proposed new methods were seen as very useful. The textual enhancements taking reference to geospatial processing were seen more critically. Consequently, all 6 new methods were accepted but only 8 out of the 18 originally proposed textual enhancements were selected.

After re-adjusting the proposal according to the opinion of the WG Quality a final list of 14 changes was derived. In the following the selected 14 proposals for changes in the QAF are presented in full detail.

### **Proposal 1 concerning Principle 1bis:**

National Geospatial Information Agencies are more and more considered to be crucial partners for NSI's. The proposal is therefore to include the following method in the indicator 1bis.3 as new method 6.

**6. Cooperation with National Geospatial Information Agencies and other holders of geospatial data.** The National Statistical Institute develops appropriate forms of cooperation with National Geospatial Information Agencies and other holders of geospatial data. Regular meetings are held and suitable agreements covering the data needs of the NSI are in place.

### **Proposal 2 concerning Principle 2 Mandate for data Collection:**

Regional and geographical aspects should be included in agreements. The proposal is therefore to emphasize this in principle 2.2 by enhancing the text of method 5 as follows:

**5. Agreements between statistical authorities and administrative data holders.** Written agreements between the statistical authorities and the administrative data holders are in place to operationalise the legal provisions. These agreements set out the data coverage (including regional and geographical aspects), the frequency and timetable of access, the general delivery mode, the data format, metadata and the technology to be used. Furthermore, they specify the consultation procedure/process of the statistical authorities in case of changes in the administrative records, their discontinuation and other relevant cases.



---

### **Proposal 3 concerning Principle 2 Mandate for data Collection:**

The availability of the most current geospatial data is considered crucial to ensure high quality in data processing. The proposal is therefore to include the following method in the indicator 2.2 as new method 12.

**12. Availability of geospatial data.** There are regular processes of updating all relevant information necessary for geographic processes

### **Proposal 4 concerning Principle 4 Commitment of Quality:**

The goal is to build a framework of indicators to measure the quality of geospatial data. The proposal is therefore to include the following new method in the indicator 4.4 as method 10.

**10. Assessing and monitoring the quality of geospatial output:** There are procedures and methods in place to assess the geospatial output of statistical products. The results of such assessments are used to be integrated in user oriented quality reports.

### **Proposal 5 concerning Principle 5 Statistical Confidentiality and Data Protection:**

Data protection must be guaranteed also concerning geographic identifiers The proposal is therefore to include this in principle 5.5 by enhancing the text of method 6 as follows:

**6. Treatment of identifiers.** Names, precise location (such as addresses, cadastral parcels, etc...) or other identifiers are deleted from data files as early as possible.

### **Proposal 6: concerning Principle 7 Sound Methodology**

The Indicator 7.3. foresees the use of registers and frames and to ensure high quality. The proposal is therefore to widen the issue by ground properties and include this in principle 7.3 by enhancing the text of method 1 as follows:

**1. Update of registers and frames.** For registers and frames used for European Statistics, the holder (statistical authority or the administrative body in charge of the registers and frames) is responsible for the updating of all relevant changes in the population, for example businesses, ground properties or individuals. These updates are performed continuously for registers and periodically for frames as appropriate (for example businesses, ground properties or individuals).

---

### **Proposal 7 concerning Principle 8 Appropriate Statistical Procedures**

Where statistical processes include geocoding or georeferencing this should be documented and described together with the other methods in the documentation. The proposal is therefore to include geocoding and georeferencing in principle 8.3 by enhancing the text of method 16 as follows:

**16. Documentation and sharing of data coding methods.** The data coding methods including geocoding and georeferencing are documented and stored. These methods are shared with the relevant staff.

### **Proposal 8 concerning Principle 11 Relevance**

The goal is to highlight the aspects of statistics that are specifically connected with geospatial components. The proposal is therefore to include this in principle 11.3 by enhancing the text of method 4 as follows:

**4. Satisfaction of key users with specific outputs.** Measures to assess satisfaction of key users with specific outputs are in place (e.g. detailed user satisfaction surveys/indicators at output level). This includes different aspects of statistical outputs, namely domains, time periods, territorial scope and dissemination products. The results of this assessment are publicly available, for example in quality reports, dedicated websites.

### **Proposal 9 concerning Principle 12 Accuracy and Reliability**

The goal is to emphasize the importance of valid geospatial information. The proposal is therefore to include the following method in the indicator 12.1 as new method 5.

**5. Validity of geospatial information.** The validity of geospatial information in terms of accuracy and reliability is checked regularly.

### **Proposal 10 concerning Principle 14 Coherence and Comparability**

The goal is to provide a more exact enumeration of geographical data. The proposal is therefore to include this in the indicator 14.1 by enhancing the text of method 1 as follows:

**1. Procedures and guidelines to monitor internal coherence.** Procedures and guidelines to monitor internal coherence are developed and monitoring is carried out in a systematic way. Where appropriate, guidelines should deal with consistency between microdata and aggregated data, between annual, quarterly and monthly data or other periodicity, between local, regional and national data, between domain statistics and National Accounts and with non-deterministic consistency.

---

### **Proposal 11 concerning Principle 14 Coherence and Comparability**

The goal is to underline the importance of territorial classifications. The proposal is therefore to include this in the indicator 14.2 by enhancing the text of method 1 as follows:

**1. Identification of changes to concepts.** Changes in concepts (classifications, including territorial typologies, definitions and target populations) in response to significant changes in reality, as well as their impact, are clearly identified/made visible, for example to facilitate reconciliation of different statistical series.

### **Proposal 12 concerning Principle 15 Accessibility and Clarity**

The goal is to map the demand on technical accessibility of geospatial information. The proposal is therefore to include the following method in the indicator 15.2 as new method 8.

**8. Statistics as a service.** Statistical authorities provide service-oriented dissemination through APIs to enable machine-readable open data format for national geospatial statistics.

### **Proposal 13 concerning Principle 15 Accessibility and Clarity**

The goal is to emphasize the need for interactively usable tools. The proposal is therefore to include the following method in the indicator 15.2 as new method 9.

**9. User's interactive ability.** Statistical authorities promote the user's interactive ability (for instance in order to be able to generate tailor-made cartographic outputs) on statistical outputs through new applications and tools.

### **Proposal 14 concerning Principle 15 Accessibility and Clarity**

The goal is to highlight (geospatial) services as custom designed outputs. The proposal is therefore to include this in principle 15.3 by enhancing the text of method 5 as follows:

**5. Provision of custom-designed outputs and services.** Custom-designed outputs and services are provided on request where possible.

Within QAFgeo, provided as separate Annex, you can find the current version of the Quality Assurance Framework enriched with the actual proposal for the changes and the rationale behind each change as annotation. It should be noted that this is a proposal and to revise the QAF is under the remit of the Working Group Quality and has further on to find its way through the governance of the European Statistical System. An expected next revision will most likely take place after the ongoing third round of Peer Reviews (mid 2023).