Standard for statistical processes 2011

Peter van Nederpelt

Publication date Statistics Netherlands website: 23 May 2011

Statistics Netherlands

The Hague/Heerlen, 2011

Explanation of symbols

.	= data not available
*	= provisional figure
**	= revised provisional figure
x	= publication prohibited (confidential figure)
–	= nil or less than half of unit concerned
–	= (between two figures) inclusive
0 (0,0)	= less than half of unit concerned
blank	= not applicable
2010–2011	= 2010 to 2011 inclusive
2010/2011	= average of 2010 up to and including 2011
2010/'11	= crop year, financial year, school year etc. beginning in 2010 and ending in 2011
2008/'09–2010/'11	= crop year, financial year, etc. 2008/'09 to 2010/'11 inclusive

Due to rounding, some totals may not correspond with the sum of the separate figures.

Publisher
Statistics Netherlands
Henri Faasdreef 312
2492 JP The Hague

Prepress
Statistics Netherlands
Facility Services

Printed by
OBT bv, The Hague

Information
Telephone .. +31 88 570 70 70
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Standard for statistical processes 2011

Peter van Nederpelt

Abstract: This reports describes the standards for statistical processes at Statistics Netherlands and is basis for audit standards and self-assessments. The standards can also be regarded as requirements for statistical processes in redesign.

Keywords: standard, statistical process.

Version management

Version history			
Version	**Date**	**Change**	**Author**
2011.0	15 January 2011	This version was delivered to Eurostat at 7 March 2011. The Dutch version was approved by the board of directors at 4 April 2011. Previous version 2011.0.p13.	Peter van Nederpelt

Distribution	
Version	
2011.0	Eurostat, Internet, Intranet.

Content

1 Introduction

1.1 Objective of this document

The objective of this document is to describe a Standard for objects that are relevant for statistical processes and products. It is a Standard that can be applied to individual statistical processes.

1.2 Scope

This document describes the standards as laid down by Statistics Netherlands.

The Standard is meant for all managers and staff involved in (re)design, analyzing and assessing statistical processes.

The Standard has no information about quality indicators and methods to assure the quality areas. For this we refer to the Quality guide for statistical output (Van Nederpelt, 2009).

1.3 Background

Statistics Netherlands has received a grant for the development of the Standard. It regards Grant no. 80201.2009.006-2009.327 signed on 30 September 2009 by the Director-General. The contract says that the Standard concerns:

- The quality of statistical output
- The quality of agreements (contracts) with users to assure that statistical output is relevant
- The quality of quality reports

See sections 1 until 11 in the appendix.

Reasons for developing the Standard are:

- Existing frameworks are integrated in the Standard. This enlarges the arrangement of the material for all parties involved.
- Producers of statistics will know in advance what the requirements are and will not be surprised afterwards when a statistical process is audited.
- Standards are explained where necessary, as are the risks if standards are not met. This is relevant for audits as well as self-assessment.
- The Standards is detached from de audit criteria. The audit criteria can be selected from the Standard for each individual audit.
- The Standard can also be used to compose the questionnaire for self-assessment and when redesigning statistical processes.
- The set of standards can be better managed in terms of completeness and consistency.

1.4 Structure of the report

The first part of the report describes the objective of the Standard in chapter 2. Chapter 3 describes the relationship with other frameworks. Chapter 4 defines the scope of the Standards. In chapter 5 the standards are discussed at meta level. Chapter 6 shows which points are outstanding. Chapter 7 explains how certain key quality areas are covered by related quality areas. Chapter 8 contains two glossaries. In chapter 9 shows how all indicators of the Code of Practice are integrated in the Standard. In chapter 10 the same is done for the Data Quality Assessment Framework of the IMF.

The Standard itself is included in the appendix of the report. Each chapter of the appendix represents an ‘object’.

Each section represents a quality area which is a combination of an object and a corresponding characteristic.

In two cases we deviated from the above mentioned division: the quality areas accuracy of data and confidentiality of data. Separate chapters are dedicated to these quality areas, as these quality areas are important.

For each quality area one or more standards are formulated. Each standard is in a box and an explanation is added.

For each standard the risk if the standard is not met is explained. This indicates implicitly what the benefits are when the standard is met ('business case').

Sometimes there is a cause and effect chain: the risk of a risk. This is indicated by the sign "→".

If applicable the corresponding principle and indicator of the Code of Practice is mentioned (Eurostat, 2005). This counts also for the Quality Guide for Statistical Output (Van Nederpelt, 2009).

1.5 Object-oriented quality management (OQM)

The quality model of SN is applied to the Standard: Object-oriented Quality Management (OQM). The model has been used for the structure of the Standard. First the objects are nominated (e.g. Documentation). Secondly the corresponding quality areas are named (e.g. Accessibility of documentation). Requirements or standards are defined and inherent risks are described for each quality area.

The concept of quality areas makes it possible to integrate existing internal and external frameworks into the Standard.

It shows what the similarities and differences are in scope with other quality management instruments of Statistics Netherlands like Process assurance, SN's version of TQM and Risk management.

1.6 Compilation and reviewing of the Standard

The Standard is compiled by Peter van Nederpelt. It is reviewed by Max Boolemen, Frank Hofman, Jac van de Schoor, Peter Struijs, Ron Vellekoop, René Stikkel, Gé Conen and Arthur Giesberts.

Furthermore, the audit team Producer Price Index commented on the Standard (Geert Nielander, Daan Baart and Leon Willenborg) as did the audit team Social Security (Ron Vellekoop, Rob van de Laar and Ron van der Werf) who applied the Standard in their audits.

The realization of the Standard was directed by Dick Kroeze and Peter Struijs.

The translation has been checked by Rita Gircour, translator.

1.7 Ownership en management of the Standard

The initial version of the Standard is determined by de Board of Directors. The board is the owner of the Standard.

The Standard is maintained by sector Process development and quality management of the division Methodology and quality.

The Standard will be adapted as soon as there is a reason for it. This could be a decision made by de Board of Directors and feedback from audit teams.

Contact person for the Standard is Peter van Nederpelt (DMK/DPK).

The Standard is evaluated each year by the Audit bureau together with the audit team leaders.

After the annual evaluation a new edition of the Standard will be published.

The current version of the Standard is valid until the end of 2011. Interim versions are not excluded.

The Standard is accessible from the SharePoint site "CBS Standards – Standards for Statistical Processes".

1.8 References

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- Nederpelt, PWM van (2009b). Checklist for quality of Statistical Output. CBS Den Haag/Heerlen, 17 April 2009.
- Renssen, R. et al. (2008). Continuation of processes, methods and tools (Dutch: Het vervolg van processen, methoden en tools). Internal report. 3 December 2008.
- VIR (2007). Guidelines for information security of central government. (Dutch: Besluit voorschrift informatiebeveiliging Rijksdient). Staatscourant 28 juni 2007, nummer 122.

The above mentioned literature is referred to as usual in the text of the Standard. For instance (CBS, 2008) and (Renssen et al., 2008).

All above mentioned documents can be consulted at the SharePoint site “CBS Standards – Standards for Statistical Processes” in category “References”.

2 Objectives of the Standard

This chapter describes the objectives of the Standard.

These objectives are:

- Contributing to the realization of the mission of Statistics Netherlands: “To publish reliable and coherent statistical information that responds to the needs of the society”.
- Realizing the core values of Statistical Netherlands. These values are reliability, relevance, coherence and topicality. In addition Statistics Netherlands is careful with requirements of privacy and confidentiality (CBS, 2008b).

The Standard makes the following possible:

- To be able to compile audit criteria for individual audits and serve as an explanation of these criteria.
- To be able to compile questions for the self-assessment and to serve as an explanation of these questions.
- Serve as framework in redesigning and change processes.
- Promote compliance with existing frameworks on subareas. See section 3.1 (Existing frameworks).

Audits
The Standard will be applied especially in compiling a set of audit criteria for individual audits. Each audit can select from the 176 standards in this report. This report consequently serves as an explanation of the audit criteria.

Self-assessments
The Standard will also be used to compile the self-assessment questionnaire for statistics that are less important for SN’s corporate image. In this case the report will serve as an explanation of the questions in the self-assessment questionnaire.

Redesigning and changes
Furthermore, the Standard can be used as a guideline by redesigning. It is clear beforehand what the requirements of a statistical process are. It can also serve as a basis for possible actions for improvement, apart from actions that are initiated by audits or self-assessments.

Compliance with existing frameworks
In this Standard existing frameworks on sub areas are integrated. This promotes a clear arrangement of these frameworks.

3 Context of the Standard

This chapter describes the context of the Standard.

The Standard is deduced from existing frameworks on the one hand. On the other hand the Standard relates to other instruments for quality and risk management in SN.

3.1 Existing frameworks

The Standards is deduced from a list of existing frameworks. These frameworks are described below and marked yellow as source in figure 1.

Code of Practice
All relevant principles and indicators of the Code of Practice (Eurostat, 2005) are mapped to the Standard. It concerns principles and indicators that can be applied at the statistical process level (not at the institutional level). The Standard promotes compliance with the Code of Practice. In chapter 9 (Cross Reference with the Code of Practice) the relationship between the Code of Practice and the Standards is specified.

DQAF
The Data Quality Assurance Framework (DQAF), the quality framework of the International Monetary Fund (IMF), is also integrated in the Standard. It concerns all standards that can be applied to individual statistical processes. Chapter 10 (Cross reference with Data Quality Assessment Framework) specifies which DQAF standards are incorporated in the Standard.

Quality guide statistical output
In the Quality guide for statistical output (Van Nederpelt, 2009) all quality areas that are connected to statistical output are explained. Knowledge about these quality areas are collected in the guide.

In cases where the Standard deals with the same quality areas as the Quality guide, the Standard refers to the Quality guide.

Other standards
The Standard refers also to other SN Standards on specific areas, i.e.,
- Standard Methods of SN
- Business Architecture and standard tools
- Decisions of the Board of Directors
- Publication guidelines
  - Editorial guidelines for the website
  - Template for a short description of a statistic
  - Guidelines for adapting published results
- Guidelines on classifications
- List of statistics that are most important to SN
- List of critical and non-critical processes
- Coding guidelines
- Glossaries: Quality assurance (CBS, 2007c), Standard Methods (CBS, 2010d).

These specific standards are integrated in the Standard where the Standard is used as a steppingstone. The specific standards will obviously stay autonomous.

In some cases the Standard refers to decisions of the Board of Directors e.g., in case of embargo policy. This is valid for SN's performance indicators as well.

Long list
All quality areas included in existing frameworks are recorded in the 'long list'. A sub set of the long list is elaborated in the Standard.

3.2 Instruments for quality and risk management

A set of instruments are implemented at SN to manage quality and risk:
- Qualtiy framework, SN's version of TQM, including Risk management
- Standard
- Audits
- Self-assessments

- VIR/Process assurance

Each instrument has two attributes (see table 1):
- Scope. This is indicated by the number of quality areas managed by the instrument.
- Depth. Is the instrument only a framework (set of requirements, demands) or does it include assurance (methods to assure quality). Measuring quality can be regarded as detective methods in this respect.

Table 1 Scope and depth of the instruments

Instrument	Scope	Depth
TQM	66 quality areas at institutional level ('short list' as part of the 'long list')	Assurance
Standard	67 quality areas at statistical process level	Framework
Audits	Identical to the Standard	Assurance
Self-assessment	Identical to the Standard	Assurance
VIR/Process assurance	16 quality areas at statistical process level	Assurance
Risk indicator	9 quality areas regarding statistical output	Measuring

TQM
The TQM efforts of SN mention quality areas that are important at the company level. Requirements are formulated for quality areas, and an assessment is made to what extent the organization is in control and what extra measures should be implemented (assurance).

Some quality areas in TQM are also part of the Standard e.g., accuracy of statistical output. In these cases TQM will refer to the Standard. The Standard is one of the measures to gain control in the quality area.

Audits and self-assessment
The audit criteria are copied from the Standard as are the questions in the questionnaire of the self-assessment.

VIR/Process Assurance
VIR/Process Assurance (VIR, 2007) has been operational for quite some time. Early in 2008 a new version was implemented. Since then 16 quality areas have been brought up. These areas regard statistical processes. Furthermore, the methods to assure these quality areas are standard methods, as laid down in handbooks, agreements, indicident management. The implementation of these methods is specified for each process. Each process is described graphically as well as in text.

Risk indicator
The risk indicator is an instrument to measure the quality of statistics by means of a number of indicators.

Guidelines for quality reports
It is proposed to develop guidelines for quality reports for users (November 2010). In due time the Standard will refer to these guidelines.

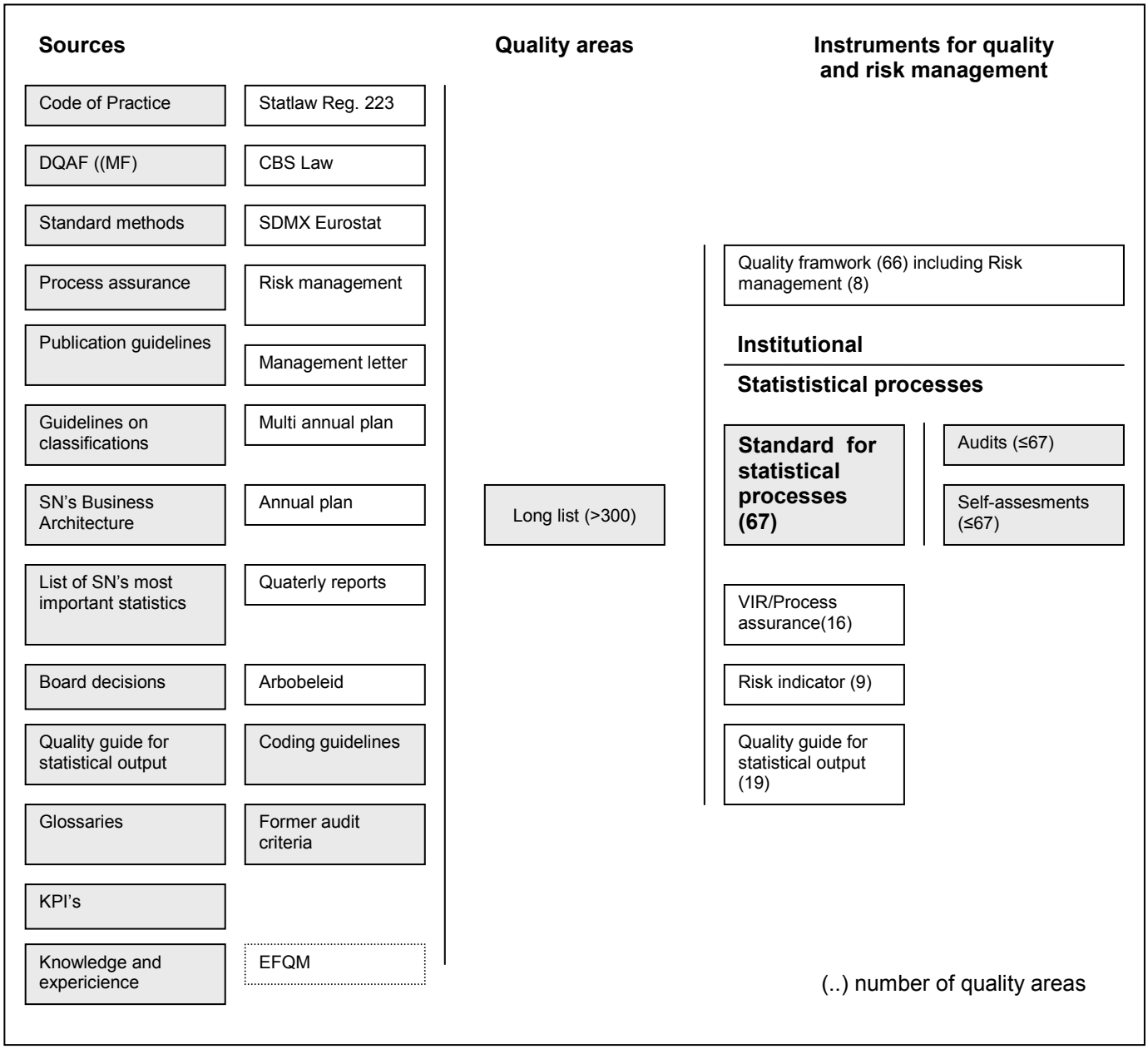

Figure 1 Coherence between sources and instruments for quality and risk mangement

4 Scope of the Standard

This chapter tells which objects are within the scope of the Standard and what the characteristics of these objects are (quality areas).

4.1 Objects

In the Standard a set of objects is discussed that relate to statistical processes. These objects are - in alphabetical order – in table 2:

Table 2 Objects

1. Agreements with external data suppliers
2. Data sources (input)
3. Documentation
4. Information systems
5. Internal agreements
6. Knowledge of subject matter and stakeholders
7. Meta data
8. Methodology
9. Other resources and services
10. Output specifications for external customers
11. Processes
12. Provision of data sources
13. Quality document
14. Quality reports
15. Registers
16. Release of statistical output
17. Release policy
18. Reporting burden
19. Revisions
20. Staff
21. Statistical concept
22. Statistical data
23. Statistical output

These objects are derived from the frameworks mentioned in section 3.1 (Existing frameworks).

There are no object models available yet that can serve as a reference model. This in contrast with process models.

4.2 Quality areas

One or more connecting characteristics are selected for each object. These characteristics are always inherent in the object. The combination of an object and one associated characteristic is called a quality area. A quality area determines the scope of the underlying standards.

4.3 Coverage

Because the Standard is structured along the lines of quality areas, it is relatively easy to determine what the scope of the Standard is. Possible missing objects and/or characteristics are noticed quickly. Good coverage was an objective in setting up the Standard.

5 Standards

The standards are derived from the frameworks mentioned in section 3.1 (Existing frameworks). and from the knowledge and experience of SN's colleagues. This essentially concerns existing standards, self-evident standards or accepted practice. The objective was a reasonable level of ambition.

Higher standards
There is also the issue of 'higher', general applicable standards:

- Stick to an agreement. Processes and products must be compliant with agreements on each level i.e., laws (Code of Practice, Privacy laws, government guidelines), existing SN guidelines, decisions of the Board of Directors.
- Knowledge products must be available (to staff or public), up-to-date, correct, complete, clear and non-ambiguous.
- The Deming cycle (Plan, Do, Check, Act) is applicable in each quality area. However, if this higher standard is made explicit for each quality area, it would result in a great number of standards. Therefore a consequent application of the standard is abandoned.

These higher standards are specified in the appendix.

New standards
In a few cases new standards are introduced i.e., the standards applicable to "Accessibility of documentation" (section 12.4) and "Soundness of methodology" (section 16.1).

Scope
The Standard contains only standards that can be applied to individual statistical processes.

Weighty standards
Some standards are weighty. This means that the risk is high if the standards is not met.

In the formula "risk = chance x impact" the score for impact in case of weighty standards is maximum in advance.

If such a standard is not met there is a good chance of negative effects (impact). This leads, in accordance to the formula above, to a high risk.

High risks may lead to a negative conclusion about the statistical process in an audit.

Standards are weighty in the following quality areas:
1. Confidentiality of data
2. Accuracy of data
3. Quality of data sources
4. Timeliness and punctuality (of dissemination) of statistical output
5. Integrity of information systems
6. Clarity of statistical output
7. Simultaneity of dissemination of statistical output (embargo policy)

Standards for key statistics determining SN's corporate image
The standards applied to key statistics for SN are in principle the same as for all other statistics. Exceptions are mentioned explicitly. For example: for SN's key statistics a Quality Document may not be older than one year while for all other statistics it is three years.

However, for statistics important for SN's corporate image, compliance with the Standard is much more important. In case standards are not met, audits will be rather negative because the impact is larger and the chance of detection is greater.

Standards for European statistics
The ESCoP is applicable for European statistics. The Standards do not distinguish between European and national statistics.

Broad and specific standards

Some standards are broad, others are more specific. The broader standards offer room for interpretation of the assessor. These standards are elaborated in the explanation of the standard.

6 Outstanding points

This chapter describes which objects, quality areas and standards are still not elaborated. They must be evaluated at the first update of the Standard. Future developments regarding the Code of Practice (Eurostat, 2005) are also mentioned.

The following objects are not elaborated:

- **Micro data as output**. Possible characteristics are consistency (with statistics) and confidentiality.

- **Publications**. Consistency of publications with statistical data is a possible quality area. Examples of publications are (Dekker, 2009):
  - Press releases
  - Annual books and periodicals
  - Web magazine
  - Articles on statistical themes
  - Table explanations
  - Publications on surveys

- **Short survey description**. Consistency with other survey descriptions is a possible quality area.

- **Data in the statistical process**. Possible characteristics are life span, reusability en degree of reuse.

- **Customers, respondents, data suppliers and intermediate parties**. It regards the quality of cooperation with these stakeholders.

- **Processing personal data**. Compliance with privacy laws is applicable.

The following objects are partly elaborated:

- **Data sources (input).** Knowledge about the quality of data sources is restricted.

- **Processes.** Compliance of the processes to the business architecture. A report about business architecture is forthcoming. Furthermore, see the long list of quality areas (CBS, 2010e).

- **Agreements with external suppliers.** See chapter 2 (Agreements with external data suppliers). Standards for topicality and validity, clarity, non-ambiguity, correctness and completeness are still missing.

- **Meta data.** See the long list of quality areas (CBS, 2010e). It regards the meta data of the data in the statistical process: from data sources, intermediate products and statistical data.

- **Statistical output.** Frequency of the statistical output is not covered by the Standard. Indicator 4.1.1 of DQAF (IMF, 2003) regards this quality area. The same is applicable for the level of detail of statistical output. Indicator 5.2.2. of DQAF regards this quality area.

Other outstanding point are:

- The Sponsorship on Quality[1] develops a Quality Assurance Framework (status November 2010). This framework describes methods to assure each indicator of the Code of Practice. Methods on the institutional level and the level of statistical processes are distinguished. The latter category of methods will be input for the Standard.

- The same Sponsorship on Quality is revising the Code of Practice (Eurostat, 2005). As soon as the new version of the Code of Practice is in force, the Standard will be adapted.

[1] Advisory group of the ESS Comittee. This committee is established by the Statistical Law, regulation 223/2009.

- Not all standards are elaborated in such a way that they can be applied without explanation. Audits will be used to gather which standards need further elaboration.

- The definitions of risks can be standardized.

7 Related objects and quality areas

This chapter deals with objects and quality areas that are already elaborated by related objects and quality areas.

7.1 Process meta data

There is no chapter about process meta data.

In chapter 12 (Documentation) the quality of documentation in general is already described. All relevant documents are mentioned in this chapter:

- Descriptions of implemented methods.
- Short survey description and possible additional survey descriptions.
- System documentation. The automated part of the process is described in this documentation.
- Working instructions. The manual part of the process in detail.

One of the parts of the Quality document (see chapter 21 Quality document) is a process description graphically as well as textual (template B, C and D). Processes are described here in a logistical sense (“flow”).

The fore mentioned documents are the process meta data.

7.2 Quality meta data

There is no chapter about quality meta data.

Quality meta data is information about the quality of the statistical output and about the quality of the process itself and of the data in the process. This information can be formulated quantitative as well as qualitative.

Quality meta data is recorded in quality reports which are already described in chapter 11 (Quality reports).

7.3 Effectiveness of processes

Processes are effective if they deliver the agreed products of the agreed quality.

The quality area is of utmost importance. However, almost all quality areas in the Standard influence the effectiveness of processes directly or indirectly.

The quality areas that influence the effectiveness of processes most directly are mentioned in the chapters below:

- 4 Statistical concept
- 5 Statistical data (figures)
- 6 Statistical output
- 7 Dissemination of statistical output
- 8 Accuracy of statistical data (figures)

7.4 Necessity of reporting burden

In section 17.1 (Efficiency of implemented processes) the following standard is defined: Administrative data are used in optimal way in order to improve efficiency.

8 Glossary

The glossary in table 3 contains the concepts used in the Standard with definitions and remarks.

Table 3 Glossary

Concept	Definition	Remarks
Accessibility of statistical output	How conveniently users can access and use figures.	Source: Checklist quality of statistical output. Also the criteria for using statistical output (costs, copyright) are covered by this quality area.
Accuracy of data	How close a data estimate is to the exact value of the data.	Source: Checklist quality of statistical output
Bias of the estimate	The average systematic deviation of the estimate from the real value of the data item.	Source: Quality guide. Also called systematic error or purity.
BoS	Bureau of Standards.	None
BoS list	List of variables including definitions that refer to statistical objects.	Application mandatory in SN.
Business Architecture Document (BAD)	Document containing the design of the statistical process, the statistical products and parties involved.	None
Clarity of statistical output	The degree to which 1) The meta data are adequate 2) Data are illustrated by graphics and maps 3) Information is available about the quality of the data 4) The constraints of the use of the data are described 5) Support is provided	Source: Checklist quality of statistical output
Code of Practice	Recommendation of Eurostat (European Commission) which makes demands on the quality of the statistical institute, the statistical processes and the statistical output.	Recommendations of Eurostat have the same status as regulations at SN.
Coding	The activity in the statistical process where a code from a classification is assigned to a description.	Source: Glossary standard methods.
Coherence of statistical concepts	The degree to which statistics use corresponding concepts and can be combined.	Source: Checklist quality of statistical output.
Comparability of data	The degree to which data are sufficiently accurate and data items regarding these data have the same definition.	Data are comparable if they can literally be compared. For example the economic growth of Germany is higher than the economic growth of the Netherlands in 2009. Source: Checklist quality of statistical output
Conceptual meta data	The description of the following components of data in the statistical process (from input to output): ▪ Unit (object type) ▪ Delineation of the population of units ▪ Subpopulations (classifications) ▪ Data items and its definitions ▪ Reference period	None
Consistency of statistical data	The degree to which data that refer to the same phenomenon are identical or show a certain relationship.	Source: Checklist quality of statistical output

Concept	Definition	Remarks
Continuity caused by change in method	The phenomenon that a change in the survey (i.e. questionnaire) causes a discontinuity in a time series.	Source: Glossary standard methods
Coverage error	Deviation of the estimation that arise because the sample framework or register does not correspond with the goal population as result of under coverage or over coverage.	Source: Glossary standard methods.
Dependency analysis	Determining 1) which factors are of interest to achieve the objective of the quality system, ii) what is the interest of these objectives for these goals and iii) what are the requirements for these factors.	Factor and quality area are the same concept. Source: Glossary quality assurance.
Disclose	Discovering a recognizable, individual person, household, company or organization from statistical data.	Source: Glossary standard methods
Euro SDMX Metadata Structure (ESMS)	List of statistical concepts	See recommendation 2009/498/EG of Eurostat.
European Statistical System (ESS)	Partnership comprising Eurostat, National Statistical Institutes and other national statistical bodies responsible in each Member State for producing and disseminating European Statistics.	Source: Code of Practice
European statistics	Community Statistics as defined in Council regulation (EC) No 322/97 of 17 February 1997 on Community Statistics, produced and disseminated by national statistical authorities and the Community's statistical authority (Eurostat) in conformity with Article 285(2) of the Treaty.	Source: Code of Practice
Target data item	The data item aimed at.	SN's Glossary Standard Methods has a different definition e.g. data item that is surveyed and measures a surveyed aspect. The objective of the survey will be to estimate the population parameters of this data item.
Target population	The population aimed at.	The set of statistical units about which a survey says something. Source: SN's Glossary standard methods
Target unit	See statistical unit	
Gross sample	All units in a sample that were asked to fill in a questionnaire.	None
Imputing	Determining and introducing values where a value is missing or unknown.	Source: Glossary standard methods
Information system	A logical unity of software and data.	Source: Glossary quality assurance.
Matching keys	One or more key data items used to match two or more datasets.	Source: Glossary standard methods
Methodology Analysis Document (MAD)	Document that describes the methodological design of a statistical process.	Not yet standardized in 2010.
Net sample	The responding part of the gross sample.	None
Object type (statistical)	See statistical unit.	
Object(type) (business)	Everything that has characteristics.	If the expression "the quality of …" can be put in front of a term, it is an object.

Concept	Definition	Remarks
Outlier	An observation that strongly deviates from the average and therefore needs extra attention; especially in case of editing and raising.	Source: Glossary Methodenreeks.
Output specification	Document which specifies the statistical products and its quality.	A specification in advance (ex ante) regarding external users. An output specification can be part of any kind of agreement, protocol, covenant, contract, regulation, etc.
Over coverage	The fact that a dataset contains units that do not belong to the target population or occur more than once (doubles).	Source: Glossary standard methods. Not applicable to aggregates.
Process	A set of coherent activities that input transforms into output.	Source: Glossary quality assurance.
Process measure	Measure to assure the quality of the process.	This term originate from the quality assurance system, where system standard measures are determined e.g. a calamity procedure.
Process metadata	Information about the process.	None
Punctuality of dissemination of statistical output	The time between the actual and planned publication time.	Source: Checklist quality of statistical output
Quality area	Combination of an object and an associated characteristic.	For example accuracy of data, maintainability of software and efficiency of a process. Internal/operational auditors call this the audit variable. However, this is an undefined concept...
Quality document	The set of completed templates of SN's quality assurance system.	None
Quality metadata	Information about the quality of the statistical process and output.	None
Quality report	Report with quality metadata.	None
Raising	A sort of weighting where the sum of individual weights equals the size of the population.	Source: Glossary standard methods
Response	Answer of a respondent to questions for compiling statistics.	None
Sample	Subset of a population on the basis of which statements are made about the population.	Source: Source: Glossary standard methods.
Sample error	Deviation of the estimate of a population parameter caused by the fact that data are sampled.	Source: Glossary standard methods.
Sample framework	The framework from which a sample is drawn, an administrative representation of the target population.	Source: Glossary standard methods.
Seasonal corrections	Adapting a time series for seasonal influences.	Source: Glossary standard methods
Selectivity of response	Degree to which the net sample is representative for the gross sample.	None

Concept	Definition	Remarks
Service Level Agreement (SLA)	A documented agreement between a supplier and a user about provision of services or products.	An SLA contains also a description of rights and duties of the supplier and user regarding the quality (service level) of the services and products. Source: Glossary quality assurance. See also standard service level (SSL).
SharePoint	Document management system as used by SN	The rights for access to SharePoint can be determined by the users itself in stead of SN's Service desk.
Simultaneity of dissemination of statistical output	Degree to which statistical output is disseminated at the same time.	None
Stakeholder	Party involved in Statistics Netherlands.	Examples of stakeholders are sponsors, users, respondents, data suppliers, supervisors and also staff.
Standard	Way of acting to which a category of persons should of must be guided.	Source: Van Dale (glossary).
Standard Service Level (SSL)	A documented, one-sided agreement of a supplier to provide certain services and/or products.	Source: Glossary quality assurance.
Statistical information	Data about a phenomenon in society and /or publications about these data.	This term is used in the mission of SN.
Statistical authority	At national level, the National Statistical Institute (NSI) and other statistical authorities in charge of producing and disseminating European Statistics and, at community level, Eurostat.	Source: Code of Practice
Statistical concept	The conceptual metadata of statistical output.	None
Statistical process	Process which has statistical information as output.	None
Supplier	Someone who delivers a product or service.	Source: Glossary quality assurance.
Timeliness of the dissemination of statistical output	The period between the planned publication date and the end of the reference period.	Source: Quality guide statistical output.
Total error	Function of bias and variance.	Source: Quality guide.
Transform	Convert one statistical concept into another.	For example transforming fiscal units into enterprises (transforming units).
Under coverage	The fact that a dataset does not contain all units of a target population.	Source: Glossary standard methods Not applicable to aggregates.
Variance of an estimate	The degree to which the error of the estimate spreads around zero.	Source: Quality guide. Also called agility, precision or random error.
Vulnerability analysis	Determine the vulnerability of a quality area based on a dependency analysis. The vulnerability of a quality area is determined by threats (causes of problems) and the risks (effects) if these threats really occur.	Source: Glossary quality assurance.

8.1 Glossary regarding data and datasets

Table 3 Glossary regarding data and dataset

Concept	Definition	Remarks
Administrative data	Data source that is output of an administrative process of an external party.	E.g. VAT-data, call records of cell phones, scanner data. It always regards flows. According to Daas et al. (2008): Data in an administration.
Aggregate	Data set that contains data about classes (subsets) of units.	According to BES (2010): Composition of micro information.
Data	A representation of facts, terms or instructions in a formal manner, suitable for transfer, interpretation or processing by humans or machines.	Source: Daas et al. (2008). Synonymes: values of variables, figures.
Data item	See variable.	None
Data set	A structured set of data.	A dataset is a set of microdata or an aggregate. According to BES (2010): Set containing micro or macro data and described by a view. A view is a selection of data. A data set has units (rows) and variables (columns).
Data source	Data set that is input for a statistical process.	A data source can be an aggregate as well as microdata.
External register	Register managed by an external party.	E.g. population register.
Internal register	Register managed by SN.	E.g. register of business units.
Microdata (set)	Data source that contains data about units.	Microdata can be input for a statistical process or be delivered as a product to a user.
Primary data source	Data source of which SN determines the conceptual metadata (too).	Collection of data does not need to be realized by SN, e.g. public insurance data.
Register	Dataset of units on an entire population where the dataset is managed actively.	E.g. population register, business register, register of motor vehicles. According to Daas et al. (2008): synonym of registration.
Registration	A data set recorded in a structured manner.	Source: Daas et al. (2008).
Secondary data source	Data source of which SN does not determine the conceptual metadata.	E.g., VAT data. The conceptual meta data of a data source describes the unit, the delineation of the population, the data items and associated definitions and reference period. According to BES (2010): Source of data that is collected for another body than SN and for other purposes than SN's purposes.
Source	See data source.	
Source file	Data set of observations delineated in units and variables and with a uniform origin.	Source: BES (2010).

Concept	Definition	Remarks
Statistical unit	Unit type about which a survey reports to users of a statistic.	Source: Glossary standard methods. For example enterprise, individual or household
Steady state	Data source that has an agreed quality and is put in an interface.	Data sources in an interface are accessible for all processes that need data sources.
Unit	The entity about which statistics are made.	For example enterprise, individual or household. Formally a unit type or instance of a unit type i.e. person John Smith.
Variable	Data type that is observed, delivered or derived from other variables.	Source: BES (2010). Synonyms: data item. Three types of variables can be distinguished: ▪ Identifying variables ▪ Classifying variables ▪ Quantifying variables

9 Cross Reference with the Code of Practice

This chapter describes which principles and indicators of the Code of Practice (Eurostat, 2005) are processed in the Standard and in which quality area. If indicators have to be covered by actions at the central level, it is explicitly indicated.

The Standard refers especially to principle 7-15 about statistical processes and statistical output. Principles are marked yellow in the table below.

[..] means that an indicator is split into two parts.

Table 5 Cross reference ESCoP and quality areas

Nr.	Principles and indicators of the ESCoP	Quality area
1-6	**Institutional framework 1 until 6**	
1	**Principle 1: Professional Independence** - The professional independence of statistical authorities from other policy, regulatory or administrative departments and bodies, as well as from private sector operators, ensures the credibility of European Statistics.	
1.1	The independence of the statistical authority from political and other external interference in producing and disseminating official statistics is laid down by law.	Measures at the institutional level
1.2	The head of the statistical authority has sufficiently high hierarchical standing to ensure senior level access to policy authorities and administrative public bodies. He/She should be of the highest professional caliber.	Measures at the institutional level
1.3	The head of the statistical authority and, where appropriate, the heads of its statistical bodies are responsible for ensuring that European Statistics are produced and disseminated in an independent manner.	Measures at the institutional level
1.4	The head of the statistical authority and, where appropriate, the heads of its statistical bodies have the sole responsibility for deciding on statistical methods, standards and procedures, and on the content and timing of statistical releases.	Measures at the institutional level
1.5	The statistical work programs are published and periodic reports describe progress made.	Measures at the institutional level
1.6	Statistical releases are clearly distinguished and issued separately from political/policy statements.	Measures at the institutional level
1.7	The statistical authority, when appropriate, comments publicly on statistical issues, including criticisms and misuses of official statistics.	Measures at the institutional level
2	**Principle 2: Mandate for Data Collection** - Statistical authorities must have a clear legal mandate to collect information for European statistical purposes. Administrations, enterprises and households, and the public at large may be compelled by law to allow access to or deliver data for European statistical purposes at the request of statistical authorities.	
2.1	The mandate to collect information for the production and dissemination of official statistics is specified by law.	Measures at the institutional level

Nr.	Principles and indicators of the ESCoP	Quality area
2.2	The statistical authority is allowed by national legislation to use administrative records for statistical purposes.	Measures at the institutional level
2.3	On the basis of a legal act, the statistical authority may compel response to statistical surveys.	Measures at the institutional level
3	**Principle 3: Adequacy of Resources** - The resources available to statistical authorities must be sufficient to meet European Statistics requirements.	
3.1a	Staff [..] both in magnitude and in quality, are available to meet current European Statistics needs.	2 Availability (qualitative) Availability of staff (quantitative)
3.1b	[..] financial, and computing resources, adequate both in magnitude and in quality, are available to meet current European Statistics needs.	Measures at the institutional level
3.2	The scope, detail and cost of European Statistics are commensurate with needs.	Measures at the institutional level
3.3	Procedures exist to assess and justify demands for new European Statistics against their cost.	Measures at the institutional level
3.4	Procedures exist to assess the continuing need for all European Statistics, to see if any can be discontinued or curtailed to free up resources.	Measures at the institutional level
4	**Principle 4: Quality Commitment** - All ESS members commit themselves to work and co-operate according to the principles fixed in the Quality Declaration of the European Statistical System.	
4.1	Product quality is regularly monitored according to the ESS quality components.	17.2 Completeness of implemented processes
4.2	Processes are in place to monitor the quality of the collection, processing and dissemination of statistics.	17.2 Completeness of implemented processes
4.3a	Processes are in place to deal with quality considerations, including tradeoffs within quality [..].	17.2 Completeness of implemented processes
4.3b	Processes are in place [..] to guide planning for existing and emerging surveys.	Measures at the institutional level
4.4a	Quality guidelines are documented [..]. These guidelines are spelled out in writing and made known to the public.	Measures at the institutional level
4.4b	[..] staff is well trained.	18.2 Availability of staff (qualitative)
4.5	There is a regular and thorough review of the key statistical outputs using external experts where appropriate.	17.2 Completeness of implemented processes
5	**Principle 5: Statistical Confidentiality** - The privacy of data providers (households, enterprises, administrations and other respondents), the confidentiality of the information they provide and its use only for statistical purposes must be absolutely guaranteed.	
5.1	Statistical confidentiality is guaranteed by law.	Measures at the institutional level

Nr.	Principles and indicators of the ESCoP	Quality area
5.2	Statistical authority staff signs legal confidentiality commitments when hired.	Measures at the institutional level
5.3	Substantial penalties are prescribed for any willful breaches of statistical confidentiality.	Measures at the institutional level
5.4	Instructions and guidelines are provided on the protection of statistical confidentiality in the production and dissemination processes. These guidelines are spelled out in writing and made known to the public.	Measures at the institutional level
5.5	Physical and technological provisions are in place to protect the security and integrity of statistical databases.	19.3 Integrity of information systems
5.6	Strict protocols apply to external users accessing statistical microdata for research purposes.	Measures at the institutional level
6	**Principle 6: Impartiality and Objectivity** - Statistical authorities must produce and disseminate European Statistics respecting scientific independence and in an objective, professional and transparent manner in which all users are treated equitably.	
6.1	Statistics are compiled on an objective basis determined by statistical considerations.	Measures at the institutional level
6.2	Choices of sources and statistical techniques are informed by statistical considerations.	Measures at the institutional level
6.3	Errors discovered in published statistics are corrected at the earliest possible date and publicized.	8.12 Publishing 24.1 Compliance of corrections, adjustments and revisions with guidelines
6.4	Information on the methods and procedures used by the statistical authority are publicly available.	6.1 Clarity of statistical output
6.5	Statistical release dates and times are announced in advance.	7.3 Predictability of dissemination of statistical output.
6.6	All users have equal access to statistical releases at the same time and any privileged pre-release access to any outside user is limited, controlled and publicized. In the event that leaks occur, pre-release arrangements should be revised so as to ensure impartiality.	7.5 Simultaneity of dissemination of statistical output
6.7	Statistical releases and statements made in Press Conferences are objective and non-partisan.	Measures at the institutional level
	Statistical processes 7 through 10	
7	**Principle 7: Sound Methodology** - Sound methodology must underpin quality statistics. This requires adequate tools, procedures and expertise.	16.1 Soundness of methodology
7.1	The overall methodological framework of the statistical authority follows European and other international standards, guidelines, and good practices.	Measures at the institutional level

Nr.	Principles and indicators of the ESCoP	Quality area
7.2	Procedures are in place to ensure that standard concepts, definitions and classifications are consistently applied throughout the statistical authority.	4.2 Coherence of the statistical concept with concepts of other statistics
7.3	The business register and the frame for population surveys are regularly evaluated and adjusted if necessary in order to ensure high quality.	Measures at the institutional level
7.4	Detailed concordance exists between national classifications and sectorisation systems and the corresponding European systems.	4.2 Coherence of the statistical concept with concepts of other statistics
7.5	Graduates in the relevant academic disciplines are recruited.	Measures at the institutional level
7.6	Staff attend international relevant training courses and conferences, and liaise with statistician colleagues at the international level in order to learn from the best and to improve their expertise.	Measures at the institutional level
7.7	Co-operation with the scientific community to improve methodology is organized and external reviews assess the quality and effectiveness of the methods implemented and promote better tools, when feasible.	Measures at the institutional level
8	**Principle 8: Appropriate Statistical Procedures** – Appropriate statistical procedures, implemented from data collection to data validation, must underpin quality statistics.	
8.1	When European Statistics are based on administrative data, the definitions and concepts used for administrative purpose must be a good approximation to those required for statistical purposes.	9.5 Coherence of concepts of the micro data set and the statistical concepts of the output
8.2	In case of statistical surveys, questionnaires are systematically tested prior to the data collection.	8 Accuracy of statistical data (figures) 8.3 Data collection
8.3a	Survey designs, sample selections, and sample weights are well based [..]	8 Accuracy of statistical data (figures)
8.3b	Survey designs, sample selections, and sample weights are [..] regularly reviewed, revised or updated as required.	16.1 Soundness of methodology
8.4	Field operations, data entry, and coding are routinely monitored and revised as required.	8 Accuracy of statistical data (figures)
8.5	Appropriate editing and imputation computer systems are used and regularly reviewed, revised or updated as required.	8 Accuracy of statistical data (figures)
8.6	Revisions follow standard, well-established and transparent procedures.	24.1 Compliance of corrections, adjustments and revisions with guidelines

Nr.	Principles and indicators of the ESCoP	Quality area
9	**Principle 9: Non-Excessive Burden on Respondents** - The reporting burden should be proportionate to the needs of the users and should not be excessive for respondents. The statistical authority monitors the response burden and sets targets for its reduction over time.	22.1 Level of reporting burden
9.1	The range and detail of European Statistics demands is limited to what is absolutely necessary.	17.1 Efficiency of implemented processes
9.2	The reporting burden is spread as widely as possible over survey populations through appropriate sampling techniques.	22.2 Spreading of reporting burden
9.3a	The information sought from businesses is, as far as possible, readily available from their accounts [..].	
9.3b	[..] electronic means are used where possible to facilitate its return.	22.1 Level of reporting burden
9.4	Best estimates and approximations are accepted when exact details are not readily available.	5.2 Consistency of statistical data
9.5	Administrative sources are used whenever possible to avoid duplicating requests for information.	17.1 Efficiency of implemented processes
9.6	Data sharing within statistical authorities is generalized in order to avoid multiplication of surveys.	17.1 Efficiency of implemented processes
10	**Principle 10: Cost Effectiveness** - Resources must be effectively used.	
10.1	Internal and independent external measures monitor the statistical authority's use of resources.	Measures at the institutional level
10.2	Routine clerical operations (e.g. data capture, coding, validation) are automated to the extent possible.	17.1 Efficiency of implemented processes
10.3	The productivity potential of information and communications technology is being optimized for data collection, processing and dissemination.	17.1 Efficiency of implemented processes
10.4	Proactive efforts are being made to improve the statistical potential of administrative records and avoid costly direct surveys.	17.1 Efficiency of implemented processes
	Statistical output 11 through 15	
11	**Principle 11: Relevance** - European Statistics must meet the needs of users.	
11.1	Processes are in place to consult users, monitor the relevance and practical utility of existing statistics in meeting their needs, and advise on their emerging needs and priorities.	4.1 Relevance of the statistical concept
11.2	Priority needs are being met and reflected in the work programme.	Measures at the central level
11.3	User satisfaction surveys are undertaken periodically.	4.1 Relevance of the statistical concept
12	**Principle 12: Accuracy and Reliability** - European Statistics must accurately and reliably portray reality.	

Nr.	Principles and indicators of the ESCoP	Quality area
12.1	Source data, intermediate results and statistical outputs are assessed and validated.	17.2 Completeness of implemented processes
12.2a	Sampling errors [..] are measured and systematically documented according to the framework of the ESS quality components.	8.2 Sampling 11.2 Compliance of quality reports with Eurostat regulations
12.2b	[..] non-sampling errors are measured and systematically documented according to the framework of the ESS quality components.	11.2 Compliance of quality reports with Eurostat regulations
12.3	Studies and analysis of revisions are carried out routinely and used internally to inform statistical processes.	24.2 Existence of processes for analyzing corrections, adjustments and revisions
13	**Principle 13: Timeliness and Punctuality** - European Statistics must be disseminated in a timely and punctual manner.	7.4 Punctuality of dissemination of statistical output
13.1	Timeliness meets the highest European and international dissemination standards.	7.2 Timeliness of dissemination of statistical output
13.2	A standard daily time is set for the release of European Statistics.	7.3 Predictability of dissemination of statistical output.
13.3	Periodicity of European Statistics takes into account user requirements as much as possible.	Eurostat
13.4	Any divergence from the dissemination time schedule is publicized in advance, explained and a new release date set.	7.3 Predictability of dissemination of statistical output.
13.5	Preliminary results of acceptable aggregate quality can be disseminated when considered useful.	5.2 Consistency of statistical data 7.2 Timeliness of dissemination of statistical output
14	**Principle 14: Coherence and Comparability** - European Statistics should be consistent internally, over time and comparable between regions and countries; it should be possible to combine and make joint use of related data from different sources.	
14.1	Statistics are internally coherent and consistent (e.g. arithmetic and accounting identities observed).	5.2 Consistency of statistical data
14.2	Statistics are coherent or reconcilable over a reasonable period of time.	5.1 Comparability of statistical data
14.3	Statistics are compiled on the basis of common standards with respect to scope, definitions, units and classifications in the different surveys and sources.	4.2 Coherence of the statistical concept with concepts of other statistics

Nr.	Principles and indicators of the ESCoP	Quality area
14.4	Statistics from the different surveys and sources are compared and reconciled.	5.2 Consistency of statistical data
14.5	Cross-national comparability of the data is ensured through periodical exchanges between the European Statistical System and other statistical systems; methodological studies are carried out in close co-operation between the Member States and Eurostat.	5.1 Comparability of statistical data
15	**Principle 15: Accessibility and Clarity** – European Statistics should be presented in a clear and understandable form, disseminated in a suitable and convenient manner, available and accessible on an impartial basis with supporting metadata and guidance.	6.2 Accessibility of statistical output
15.1	Statistics are presented in a form that facilitates proper interpretation and meaningful comparisons.	6.1 Clarity of statistical output
15.2	Dissemination services use modern information and communication technology and, if appropriate, traditional hard copy.	Measures at the institutional level
15.3	Custom-designed analysis is provided when feasible and is made public.	Measures at the institutional level
15.4	Access to microdata can be allowed for research purposes. This access is subject to strict protocols.	Measures at the institutional level
15.5	Metadata are documented according to standardized metadata systems.	14.3 Standardization of conceptual meta data
15.6a	Users are kept informed on the methodology of statistical processes [..].	6.1 Clarity of statistical output
15.6b	Users are kept informed on [..] the quality of statistical outputs with respect to the ESS quality criteria.	6.1 Clarity of statistical output

10 Cross reference with Data Quality Assessment Framework

This chapter states which indicators of the Data Quality Assessment Framework (DQAF) of the International Monetary Fund (IMF) are integrated in the Standard (IMF, 2003).

We have limited ourselves to the lowest hierarchical level of DQAF called “indicators. Higher levels - dimensions and elements - are not mentioned in table 6 below as well as in the Standard.

Table 6 Cross-reference DQAF and the Standard

Indicator	Section
0.1.1 The responsibility for collecting, processing, and disseminating the statistics is clearly specified.	Measures at institutional level
0.1.2 Data sharing and coordination among data-producing agencies are adequate.	Measures at institutional level
0.1.3 Individual reporters’ data are to be kept confidential and used for statistical purposes only.	13.1 Confidentiality of micro data
0.1.4 Statistical reporting is ensured through legal mandate and/or measures to encourage response.	Measures at institutional level
0.2.1 Staff, facilities, computing resources, and financing are commensurate with statistical programs.	18.1 Availability of staff (quantitative) 18.2 Availability of staff (qualitative)
0.2.2 Measures to ensure efficient use of resources are implemented.	17.1 Efficiency of implemented processes
0.3.1 The relevance and practical utility of existing statistics in meeting users’ needs are monitored.	4.1 Relevance of the statistical concept
0.4.1 Processes are in place to focus on quality.	Measures at institutional level
0.4.2 Processes are in place to monitor the quality of the statistical program.	Measures at institutional level
0.4.3 Processes are in place to deal with quality considerations in planning the statistical program.	Measures at institutional level
1.1.1 Statistics are produced on an impartial basis.	Measures at institutional level
1.1.2 Choices of sources and statistical techniques as well as decisions about dissemination are informed solely by statistical considerations.	Measures at institutional level
1.1.3 The appropriate statistical entity is entitled to comment on erroneous interpretation and misuse of statistics.	Measures at institutional level
1.2.1 The terms and conditions under which statistics are collected, processed, and disseminated are available to the public.	6.1 Clarity of statistical output
1.2.2 Internal governmental access to statistics prior to their release is publicly identified.	7.5 Simultaneity of dissemination of statistical output
1.2.3 Products of statistical agencies/units are clearly identified as such.	Measures at institutional level

Indicator	Section
1.2.4 Advanced notice is given of major changes in methodology, source data, and statistical techniques.	11.1 Availability of quality reports
1.3.1 Guidelines for staff behavior are in place and are well known to the staff.	Measures at institutional level
2.1.1 The overall structure in terms of concepts and definitions follows internationally accepted standards, guidelines, or good practices.	4.2 Coherence of the statistical concept with concepts of other statistics
2.2.1 The scope is broadly consistent with internationally accepted standards, guidelines, or good practices.	Measures at institutional level
2.3.1 Classification/sectorization systems used are broadly consistent with internationally accepted standards, guidelines, or good practices.	4.2 Coherence of the statistical concept with concepts of other statistics
2.4.1 Market prices are used to value flows and stocks.	8.8 Transforming
2.4.2 Recording is done on an accrual basis.	8.8 Transforming
2.4.3 Grossing/netting procedures are broadly consistent with internationally accepted standards, guidelines, or good practices.	8.8 Transforming
3.1.1 Source data are obtained from comprehensive data collection programs that take into account country-specific conditions.	Measures at institutional level
3.1.2 Source data reasonably approximate the definitions, scope, classifications, valuation, and time of recording required.	9.5 Coherence of concepts of the micro data set and the statistical concepts of the output
3.1.3 Source data are timely.	10.1 Punctuality of input provision
3.2.1 Source data—including censuses, sample surveys, and administrative records—are routinely assessed, e.g., for coverage, sample error, response error, and nonsampling error; the results of the assessments are monitored and made available to guide statistical processes.	8 Accuracy of statistical data (figures) 9 Data source (input)
3.3.1 Data compilation employs sound statistical techniques to deal with data sources.	16.1 Soundness of methodology
3.3.2 Other statistical procedures (e.g., data adjustments and transformations, and statistical analysis) employ sound statistical techniques.	16.1 Soundness of methodology
3.4.1 Intermediate results are validated against other information where applicable.	5.2 Consistency of statistical data
3.4.2 Statistical discrepancies in intermediate data are assessed and investigated.	5.2 Consistency of statistical data
3.4.3 Statistical discrepancies and other potential indicators or problems in statistical outputs are investigated.	5.2 Consistency of statistical data
3.5.1 Studies and analyses of revisions are carried out routinely and used internally to inform statistical processes (see also 4.3.3).	24.1 Compliance of corrections, adjustments and revisions with guidelines
4.1.1 Periodicity follows dissemination standards.	Measures at institutional level

Indicator	Section
4.1.2 Timeliness follows dissemination standards.	7.2 Timeliness of dissemination of statistical output
4.2.1 Statistics are consistent within the dataset.	5.2 Consistency of statistical data
4.2.2 Statistics are consistent or reconcilable over a reasonable period of time.	5.1 Comparability of statistical data
4.2.3 Statistics are consistent or reconcilable with those obtained through other data sources and/or statistical frameworks.	5.2 Consistency of statistical data
4.3.1 Revisions follow a regular and transparent schedule.	24.1 Compliance of corrections, adjustments and revisions with guidelines
4.3.2 Preliminary and/or revised data are clearly identified.	24.1 Compliance of corrections, adjustments and revisions with guidelines
4.3.3 Studies and analyses of revisions are made public (see also 3.5.1).	24.1 Compliance of corrections, adjustments and revisions with guidelines
5.1.1 Statistics are presented in a way that facilitates proper interpretation and meaningful comparisons (layout and clarity of text, tables, and charts).	6.1 Clarity of statistical output
5.1.2 Dissemination media and format are adequate.	6.2 Accessibility of statistical output
5.1.3 Statistics are released on a preannounced schedule.	7.3 Predictability of dissemination of statistical output.
5.1.4 Statistics are made available to all users at the same time.	7.5 Simultaneity of dissemination of statistical output
5.1.5 Statistics not routinely disseminated are made available upon request.	Measures at institutional level
5.2.1 Documentation on concepts, scope, classifications, basis of recording, data sources, and statistical techniques is available, and differences from internationally accepted standards, guidelines, or good practices are annotated.	6.1 Clarity of statistical output
5.2.2 Levels of detail are adapted to the needs of the intended audience.	Outstanding point
5.3.1 Contact points for each subject field are publicized.	Measures at institutional level
5.3.2 Catalogs of publications, documents, and other services, including information on any changes, are widely available.	Measures at institutional level

APPENDIX:

STANDARD FOR STATISTICAL PROCESSES

1 Output specifications for external users

In output specifications it is documented which products will be delivered to external users and what the required quality of these products is. It regards 'ex ante' specifications, not explanations afterwards ('ex post').

Output specifications are not necessarily communicated with or signed by the user. Goal of the output specification is that the producer knows what should be delivered.

To be able to assess the standards in this chapter, there must be an overview of all deliveries to external users.

These characteristics of output specifications are distinguished:
- Availability
- Topicality
- Clarity and non-ambiguity
- Completeness

1.1 Availability of output specifications

A	An output specification is available for each delivery to an external user.

Explanation:
- Deliverables for Eurostat are specified in regulations and agreements.
- Deliverables for UN, ILO, IMF, OECD and ECB are specified in agreements.
- The output specification can be part of an agreement (protocol, contract) with the user. Other items may be discussed in this agreement too.
- There is no agreement with every user. For non-paying users this is not required as yet.

Risk if the standard is not met:
- Lack of clarity about the product that should be delivered to the user.

1.2 Topicality of output specifications

A	All output specifications regard at least the current production process.

Explanation:

- There must always be a current output specification. Output specification must therefore be revised on time.
- Older versions of the output specifications may also be available and/or specifications of wishes.

Risk if the standard is not met:

- It is unclear which products should be delivered and what the quality of these products should be. This applies especially if output specifications should be revised.

1.3 Clarity and non-ambiguity of output specifications

A	All output specifications are clear and non-ambiguous

Explanation:
- Output specifications may not contain contradictions en should not be susceptible to several interpretations.
- Output specifications must be understandable for the staff involved.

Risk if the standard is not met:
- Same risk if output specifications are not topical or not available.

1.4 Completeness of output specifications

A	The statistical products are specified in all output specifications.

Explanation:
- The statistical concept is described: unit, definition of the population, subpopulations, data items including definitions and reference period.
- In chapter 14 (Conceptual meta data) the term statistical concept is explained.

Risk if the standard is not met:
- Misunderstanding (internal) about the products that should be delivered.

B	The quality criteria of the products are specified in all output specifications.

Explanation:
- Quality criteria of the products are:
  - Timeliness. What is the required release date and time?
  - Punctuality. Which margins are allowed in release dates?
  - Accuracy. Which margins are allowed? Which statistical methods and / or procedures are required?
  - Coherence. Which combinations should be possible with other statistics?
  - Comparability in time or between (sub) populations.
  - Consistency.
- Timeliness and accuracy are in output specifications the most important criteria.

Risk if the standard is not met:
- Misunderstanding (internal) about the required quality

C	The required quality reports are specified in all output specifications.

Explanation:
- Quality reports report to what extent the requirements are met or the quality is accounted for.
- Quality reports could also be a summery of changes on individual units e.g. changes of the NACE code.
- Quality reports may not be required.
- Process information and process tables can be regarded as quality reports.

Risk if the standard is not met:
- Misunderstanding (internal) about the required content of quality reports.

2 Agreements with external data suppliers

In this chapter standards concerning the quality of agreement with external data suppliers are described.

As yet no standards are formulated concerning the correctness, completeness and topicality of these agreements.

In order to be able to assess the standards in this chapter, an overview must be available of all deliverables from external data suppliers.

2.1 Availability of agreement with external suppliers

A	There is an agreement with every external data supplier.

Explanation
- An agreement is a legal obligation (contract or law).
- For example municipalities are legally obliged to deliver data about social security. This is arranged by the Ministry of Social Affairs.

Risk if the standard is not met:
- Misunderstanding about the product that should be delivered and about the quality of this product.

3 Internal agreements with users and suppliers

This chapter deals with standards that refer to the quality of agreements with internal users and suppliers. It concerns users who act as links in a chain; not only the starting point and end of the chain.

The following characteristics of internal agreements are distinguished:
1. Availability
2. Correctness
3. Completeness
4. Topicality and validity
5. Clarity and non-ambiguity

In this framework it regards only users and suppliers of data and meta data.

In order to be able to assess the standards in this chapter, an overview must be available of all deliverables of internal suppliers and internal users.

3.1 Availability of internal agreements

A	For each internal user and internal supplier a Service Level Agreement (SLA) is available.

Explanation:
- In case of mutual deliveries between two parties it is sufficient to have one SLA.
- Also a Standard Service Level (SSL) can be considered as an internal but unilateral agreement.

Risk if the standard is not met:
- Misunderstanding about the product that should be delivered and about the quality of this product.
- It is impossible to assess if the required products and the required quality are delivered.
- Different interpretations of a verbal agreement.

3.2 Correctness of internal agreements

A	The information in the internal agreements is correct.

Explanation:
- Staff names must be correct for example.

Risk if the standard is not met:
- Incorrect decisions are made.

3.3 Completeness of internal agreements

A	All internal agreement should specify the statistical products.

See 1.4 (Completeness of output specifications): standard A.

B	All internal agreement should specify quality dimensions of the product.

See 1.4 (Completeness of output specifications): standard B.

C	All internal agreement should specify the required quality reports.

See 1.4 (Completeness of output specifications): standard C.

D	All internal agreement should mention future developments.

Explanation:
- All parties involved need time to prepare for future developments.

Risk if the standard is not met:
- The required output is not ready in time.

E	All internal agreements should list the still unfulfilled needs of the internal user.

Explanation:
- This is not a hard standard. However, it is user friendly to make explicit which needs of the internal user are still not fulfilled.

Risk if the standard is not met:
- Dissatisfied user.

F	All internal agreements should specify the period of validity.

Explanation:
- There are no rules for the period of validity of a SLA, but most are valid for one year.

Risk if the standard is not met:
- It is not clear when the agreement must be revised and if an agreement is still valid.

G	All internal agreement should specify contact persons on both sides.

Explanation:
- Contact persons are those staff members who should be contacted in case of problems with the execution of the agreement.

Risk if the standard is not met:
- It not clear how problems should be addressed.

H	All internal agreements should include an evaluation procedure.

Explanation:
- It must be described when and by whom the agreement between parties is discussed for revision or prolongation (service level management).

Risk if the standard is not met:

- Revision or prolonging of the SLA will be take place too late.

I	All internal agreements should include a complaints procedure.

Explanation:
- It should describe by whom and how complaints are discussed between parties.
- The same standard is valid for incidents. In case of incidents also the supplier can take the initiative.

Risk if the standard is not met:
- Complaints are not processed effectively.

3.4 Topicality and validity of internal agreements

A	All internal agreements are still valid.

Explanation:
- There must be always a valid agreement. Therefore an agreement must be revised or reconfirmed in time.
- In case of transfer of activities to other people or other departments reconfirmation is required.

Risk if the standard is not met:
- Misunderstanding about the products that should be delivered and about the delivery date.

B	All internal agreements are less than 36 months old.

Explanation:
- In general agreements that are older that 36 month are no longer topical.
- Internal agreements can be confirmed too.

Risk if the standard is not met:
- Misunderstanding about the product that should be delivered and about the quality of this product.
- It is impossible to assess if the required products and the required quality are delivered.

3.5 Clarity and non-ambiguity of internal agreements

A	All internal agreements are clear and unambiguous.

Explanation:
- Agreements do not contain contradictions and are not interpretable in more than one way.
- Agreements must be clear for the parties concerned.

Risk if the standard is not met:
- Misunderstanding about the product that should be delivered and about the quality of this product.
- It is not possible to assess if the required products and the required quality is delivered.

4 Statistical concept

The statistical concept is the description of the statistical unit (object type), the delineation of the population, subpopulations (classifications), the data items including the definitions and the reference period (population time) of the output.

Statistical concept is synonymous to conceptual metadata of aggregated data.

In order to be able to assess the standards in this chapter, an overview of all deliverables to users must be available.

Characteristics of the statistical concept are:
1. Relevance
2. Coherence with other statistics

4.1 Relevance of the statistical concept

See chapter 5 in the Quality Guide Statistical Output (Van Nederpelt, 2009) for further information about this quality area.

A	It is recorded which users need the statistical information.

Explanation:
- What is the aim of the statistic?
- It regards only known users. Not the anonymous users of StatLine.

Risk if the standard is not met:
- Data do not come up to expectations or do not fulfill the needs of the user.
- SN cannot think along with the user about the required statistical concept.

B	All statistics that are published are included in SN's annual plan.

Explanation:
- Including the statistics in the annual plan means that the compilation and release of the statistics are approved.

Risk if the standard is not met:
- Unauthorized publication of statistics.

C	Each StatLine table was visited at least 15 times in the last quarter.

Explanation:
- This refers only tables that are still updated not once-only statistics and statistics that have been stopped.
- This standard is also too strict for recently published tables, so it applies from one quarter after initial publication onwards.
- The number of StatLine visits is published in Intranet reports. Refer to the number of table visits.
- 15 visits or more means the table is in the best 80% of table visit frequency.
- This standard has the characteristics of an indicator (what is happening here?) instead of a strict standard.

Risk if the standard is not met:
- Resources are not used adequately.

D	User satisfaction surveys are undertaken periodically.

Code of Practice:
- Indicator 11.3: User satisfaction surveys are undertaken periodically.

Explanation:
- It regards known internal and external user and the satisfaction about the statistical concept.
- Anonymous users of StatLine are outside the scope of this standard.
- It is less logical to assess survey user satisfaction in case of regulation based statistics.
- It is important that statistics are usable. This may be a more adequate term than relevance.
- In case users are dissatisfied, a follow-up will take place.

Risk if the standard is not met:
- Dissatisfied users.

E	The frequency of statistics is so that developments are visible.

Explanation:
- Some phenomena are so stable that it makes no sense to measure them frequently.

Risk if the standard is not met:
- Unnecessary use of capacity.

F	Users are consulted regularly about the usability of statistics and about future needs and priorities.

Explanation:
- This applies only to known users and not anonymous StatLine users.

Code or Practice
- Indicator 11.1: Processes are in place to consult users, monitor the relevance and practical utility of existing statistics in meeting their needs, and advise on their emerging needs and priorities.

DQAF:
- Indicator 0.3.1: The relevance and practical utility of existing statistics in meeting users' needs are monitored.

Risk if the standard is not met:
- The practical utility of statistics degrades in the course of time.

4.2 Coherence of the statistical concept with concepts of other statistics

See chapter 7 of the Quality Guide of Statistical Output (Van Nederpelt, 2009) for further information about this quality area.

In general the coherence of the statistical concept must comply with the Standard Methods (CBS, 2010b). Part 3 of this document addresses the dimension coherence: seven levels of coordination are distinguished by Ad Willeboordse.
These seven coordination levels of Willeboordse are translated into the first three standards in this section.

This Standard aims at coherence of data items and subpopulations (classifications). Coherence in units, populations and reference periods are possible as well. This is not mentioned as yet.

A	The definitions of the data items are sufficiently clear, complete and unambiguous.

Explanation:
- In chapter 1 (Output specifications for external users) the clarity, non-ambiguity and completeness of output specifications are already mentioned.
- Aim of this standard is to be able to detect coherence between statistics.
- It regards other documents than output specifications, e.g., de specifications of the data items in the table explanations in StatLine.
- Coherence is aimed at the user. The user must be able to combine data. This standard regards data items that are visible for external (and internal) users.
- The definitions are unambiguous if they cannot be interpreted in different ways.
- The definitions are complete if all data items are defined.

Risk if the standard is not met:
- It is impossible to assess the coherence between statistics.

B	Unique names are used for data items.

Explanation:
- No synonyms and homonyms are used within the statistical process.
- Different names may be used by suppliers and for respondents and for users. Connection with their frame of reference is needed. The relationship between the unique name and synonyms are explicitly indicated.

Risk if the standard is not met:
- It is impossible to assess the coherence between statistics. It assumes knowledge of synonyms and homonyms.

C	The data items can be related in meaningful ways to other data items within the same domain/theme.

Explanation:
- This means that data items of statistics can be combined in one table. This is only possible if the units and subpopulations are identical.
- It is for example possible that ratios can be derived based on two data items.

Code of Practice:
- Principe 14: [...] it should be possible to combine and make joint use of related data from different sources.
- Indicator 14.3: Statistics are compiled on the basis of common standards with respect to scope, definitions, units and classifications in the different surveys and sources.

Risk if the standard is not met:

- Data items cannot be combined.

D	Data items have standard definitions.

Explanation:
- Use of the definitions of the Bureau of Standards (BoS) is mandatory.
- If data items are not mentioned on the BoS list, the procedure must be followed to put new data items on the BoS list.

Code of Practice
- Indicator 7.2: Procedures are in place to ensure that standard concepts, definitions and classifications are consistently applied throughout the statistical authority.

DQAF:
- Indicator 2.1.1: The overall structure in terms of concepts and definitions follows internationally accepted standards, guidelines, or good practices.

Risk if the standard is not met:
- Lack of clarity for users.

E	There is coherence in subpopulations.

Explanation:
- Where possible international classification systems are used.
- Sometimes specific (combinations of) subpopulations are compiled. This is undesirable because this hampers combining statistics.
- Some classification systems are explicitly approved by the Board of Directors. See table 5.

Table 7 Internal guidelines regarding classifications

Standard	**Date of approval**
Coordinated population of companies	July 2002
Strategy report BoS 2003-2008	20 November 2002
Standard classification SBI	18 December 2002
Standard classification Regions	18 December 2002
Standard classification Turnover	18 December 2002
Harmonization guide lines for Age	26 May 2003
New NACE2008 combinations	2 June 2009 and 30 November 2009

Code of Practice:
- Indicator 7.4: Detailed concordance exists between national classifications and sectorisation systems and the corresponding European systems.

DQAF:
- Indicator 2.3.1: Classification/sectorization systems used are standards, guidelines, or good practices.

Risk if the standard is not met:
- Statistics cannot be combined.
- Lack of uniformity in the presentation of data.

5 Statistical data (figures)

Statistical data are the values of the data items or - shortly - figures.

In order to be able to assess the standards in this chapter, an overview of all deliverables to users must be available.

Characteristics of statistical data are:
1. Accuracy. A separate chapter is dedicated to this dimension.
2. Comparability
3. Consistency

5.1 Comparability of statistical data

See chapter 8 in the Checklist quality of statistical output (Van Nederpelt, 2009b) for further information about this quality area.

There are three categories of comparability:
- Comparability over time
- Comparability between subpopulations
- Comparability between countries (regional populations)

Code of Practice:
- Principle 14: European Statistics should be consistent internally, over time and comparable between regions and countries. [..]

Comparability of data is only possible if there is coherence between de concepts.

Agreements on comparability should be met. If there are no agreements about comparability, the quality must be self-evident.

A	The figures are comparable over a reasonable period of time.

Explanation:
- The time series must be long enough. This applies to realized as well as planned time series.
- Comparability over time is lost if statistical concepts or methods are changed (discontinuity).

Code of Practice:
- Indicator 14.2: Statistics are coherent or reconcilable over a reasonable period of time.

DQAF:
- Indicator 4.2.2: Statistics are consistent or reconcilable over a reasonable period of time.

Risk if the standard is not met:
- Developments over time are not visible. → Dissatisfied users.

B	Figures of subpopulations are sufficiently comparable.

Explanation:
- Subpopulations are broken down into categories or classes from a classification system. This also applies to regional classifications within a country.
- There is no comparability between subpopulations if the methods for compiling the data differ.

Risk if the standard is not met:
- Figures of subpopulations cannot be compared. → Dissatisfied users.

C	Statistics are produced in compliance with Eurostat regulations.

Explanation:

- Compliance with Eurostat regulations means, that the data between EU countries are comparable. At least they use the same concepts.

Code of Practice:

- Principle 14: European Statistics should be [...] comparable between regions and countries.
- Indicator 14.5: Cross-national comparability of the data is ensured through periodical exchanges between the European Statistical System and other statistical systems; methodological studies are carried out in close co-operation between the Member States and Eurostat.

Risk if the standard is not met:

- Data cannot be aggregated to the European level.

5.2 Consistency of statistical data

See chapter 9 in the Checklist quality of statistical output (Van Nederpelt, 2009b) for further information about this quality area.

Agreements on consistency should be met. If there are no agreements about consistency, the quality must be self-evident.

There are different categories of consistency:
- Consistency between preliminary and final data
- Consistency between short and long term data, e.g., quarterly and annual data
- Consistency between sources and the National Accounts
- Deterministic consistency between data
- Non-deterministic consistency between data
- Consistency between microdata and aggregates

Consistency of data is only possible if there is coherence between the concepts.

A	Preliminary and final data are sufficiently consistent.

Explanation:
- If the standard is not met, the methods used should be assessed. It can also lead to not, or delayed disseminating the preliminary data.

Key performance indicators:
- For Quarterly Economic Growth, International Trade and Population Growth in 2011 performance indicators are in place for deviations between de preliminary and final data (CBS, 2010f).

Code of Practice
- Indicator 9.4: Best estimates and approximations are accepted when exact details are not readily available.
- Indicator 13.5: Preliminary results of acceptable aggregate quality can be disseminated when considered useful.

Risk if the standard is not met:
- Inaccurate data. → Irrelevant data.
- The preliminary data do not 'predict' the final data well enough.

B	Short term data and long term data are sufficiently consistent.

Explanation:
- Monthly data can be aggregated to annual data for example.

Risk if the standard is not met:
- Incomprehensibility for users.

C	Data are sufficiently consistent with the National Accounts.

Explanation:
- Absolute consistency can not be required because data must be fit in the National Accounts.
- It must be clear which changes the National Accounts made and why. There must be a systematic evaluation and feedback between the producers of the source data and the National Accounts.

Code of Practice
- Indicator 14.4: Statistics from the different surveys and sources are compared and reconciled.

Risk if the standard is not met:
- Incomprehensibility for users.

D	Data are internally consistent (if applicable).

Explanation:
- In case of internal consistency there is a deterministic relation between data: x=y or a+b=c. For example return = costs + profit.
- Symmetric flows are e.g., export of the Netherlands to Germany and import from Germany to the Netherlands. These flows should be identical.
- Other terms used are arrhythmic identities, accounting identities and equations.
- For National Accounts 100% internal consistency is required.
- Also between statistics and publications consistency is required.

Code of Practice
- Indicator 14.4: Statistics from the different surveys and sources are compared and reconciled.

DQAF:
- Indicator 4.2.1: Statistics are consistent within the dataset.

Risk if the standard is not met:
- Incomprehensibility for users.
- Data errors.

E	Data that are related must be sufficiently consistent.

Explanation:
- It regards ‘loose’ consistency as to data items in the business cycle tracer. Developments should point in the same direction like consumption and consumption confidence.
- Data can also be compared with expectations of subject matter experts.
- Key word is plausibility here.

Code of Practice
- Indicator 14.4: Statistics from the different surveys and sources are compared and reconciled.

DQAF:
- Indicator 3.4.1: Intermediate results are validated against other information where applicable.
- Indicator 3.4.2: Statistical discrepancies in intermediate data are assessed and investigated.
- Indicator 3.4.3: Statistical discrepancies and other potential indicators or problems in statistical outputs are investigated.
- Indicator 4.2.3: Statistics are consistent or reconcilable with those obtained through other data sources and/or statistical frameworks.

Risk if the standard is not met:
- Incomprehensibility for users.

F	Aggregates and micro data are sufficiently consistent.

Explanation:
- Inconsistency originates in case of meso and macro editing without changing the micro data.
- It is possible that this standard is not met on purpose because of efficiency.

- If SN makes the micro data available to third parties this should be taken into account and explained.

Risk if the standard is not met:
- Aggregates cannot be derived from micro data.

6 Statistical output

Statistical output means statistical presentations in various forms such as tables including explanations, graphs, diagrams, charts, animations. This regards only output for external users.

Characteristics of statistical output are:
1. Clarity
2. Accessibility

6.1 Clarity of statistical output

See chapter 13 in the Checklist quality of statistical output (Van Nederpelt, 2009b) for further information about this quality area.

Code of Practice:
- Principle 15: European Statistics should be presented in a clear and understandable form. [..]
- Indicator 15.1: Statistics are presented in a form that facilitates proper interpretation and meaningful comparisons.
- Indicator 15.6: Users are kept informed on the methodology of statistical processes and the quality of statistical outputs with respect to the ESS quality criteria.

DQAF:
- Indicator 1.2.1: The terms and conditions under which statistics are collected, processed, and disseminated are available to the public. Zie ESCoP 15.6.
- Indicator 5.1.1: Statistics are presented in a way that facilitates proper interpretation and meaningful comparisons (layout and clarity of text, tables, and charts). Zie ESCoP 15.1.
- Indicator 5.2.1: Documentation on concepts, scope, classifications, basis of recording, data sources, and statistical techniques is available, and differences from internationally accepted standards, guidelines, or good practices are annotated.

A	The explanations of the StatLine tables comply with the Editorial guidelines.

Explanation:
- The Editorial guidelines (CBS, date unknown) can be found on the Intranet.
- The guidelines concern:
  - Title
  - Explanation of the table
  - Tabs
  - Definitions of data items
- In case of an audit with a broad scope it is not feasible to assess all guidelines. When glaring shortcomings are found, it is recommended to assess if the guideline is applicable.

Risk if the standard is not met:
- The StatLine table is less understandable and informative.

B	The short survey description complies with the template for short survey description.

Explanation:
- The template for short survey description can found on the Intranet (CBS, 2006).
- The table explanation links to the short survey description.
- Items of the short survey description are:
  - Goal
  - Population
  - Statistical unit
  - Start survey
  - Frequency
  - Publication strategy (=release policy)

- Type of survey
- Data collection method
- Respondents
- Sample size
- Monitoring and correction methods
- Weighting
- Accuracy
- Comparability over time
- Quality strategy

Code of Practice
- Indicator 6.4: Information on the methods and procedures used by the statistical authority are publicly available.

Risk if the standard is not met:
- The information about the statistic is incomplete and therefore less informative.

C	The statistical concept of the StatLine table is explained.

Explanation:
- See glossary for the definition of the term statistical concept.
- The statistical concept is explained in the table explanation (variables) and the short survey description (statistical unit, population).

Risk if the standard is not met:
- The StatLine table cannot be interpreted correctly.

History:
- A concept template is available for a long survey description. It contains the following items:
  - Objective
  - Background
  - Population
  - Data collection and response
  - Data processing
  - Outcomes and calculation methods
  - Quality and accuracy of the output
  - Information
- This template has never been approved and published.
- See previous standard for the short survey description.

6.2 Accessibility of statistical output

See chapter 12 in the Checklist quality of statistical output (Van Nederpelt, 2009b) for further information about this quality area.

Accessibility of statistical output is mainly implemented at the central level (SN's website). Therefore, the number of standards for this quality area is small. The following standards can be applied to one statistical process.

A	The output is sufficiently accessible for internal users.

Explanation:
- This standard regards only deliverables to internal users.
- According to the business architecture, statistical products are recorded in 'steady states' so accessibility is optimal. This is facilitated by the Data Service Centre (DSC). However, DSC is only operational for a restricted number of statistics. Therefore, the standard concerns only local solutions.

Risk if the standard is not met:
- Dissatisfied users.

B	The output is delivered according to the medium and format as agreed to internal and external users.

Explanation:
- This standard regards only deliveries to known users.
- If no agreements are made, this standard is not applicable.
- Medium: paper, CS, mail, data com, Date Service Centre (DSC), database, etc.
- Format: Word, PFD, Excel, HTML, Access, SDMX, ASCII, etc.
- In section 11.2 (Compliance of quality reports with Eurostat regulations) demands are made on the format of quality reports.

Code of Practice:
- Principle 15: European Statistics should be [..] disseminated in a suitable and convenient manner [..]

DQAF:
- Indicator 5.1.2: Dissemination media and format are adequate.

Risk if the standard is not met:
- Dissatisfied users.

7 Dissemination of statistical output

In order to assess the standards in this chapter an overview of all internal and external deliveries should be available.

Data can be delivered passively by making data available to the user, or actively by sending the data to the user.

The term release is also used instead of dissemination.

Characteristics of dissemination of statistical output are:
1. Completeness
2. Timeliness
3. Predictability
4. Punctuality
5. Simultaneity

7.1 Completeness of release of statistical output

See chapter 15 in the Checklist quality of statistical output (Van Nederpelt, 2009b) for further information about this quality area.

Completeness can only be assesses if agreements are available. It regards output for internal as well as external users. Compliance with agreements is assessed here.

A	All statistics listed in the annual plan of SN are published on StatLine.

Explanation:
- The annual plan of SN indicates when which tables are published on StatLine.
- Not more than the statistics listed in the annual plan are published for reasons of efficiency.

Risk if the standard is not met:
- Less published than planned. → Dissatisfied supervisors and users.

B	All agreed data items are delivered.

Explanation:
- This standard is stronger than the previous one.
- This standard applies to all deliveries to internal and external users.
- It regards data items as mentioned in the output specifications and the SLA's. The standards can only be assessed if these documents are available.

Risk if the standard is not met:
- Dissatisfied customers.
- SN is considered unreliable.

C	The deliveries concern the agreed population and subpopulations.

Explanation:
- See chapter 14 in the Checklist quality of statistical output (Van Nederpelt, 2009b) for further information about this quality area.

Risk if the standard is not met:
- The need for information of the user is not met.
- Insufficient coherence with other statistics concerning the subpopulations.

D	All deliveries to external users are published on StatLine or on SN's website.

Explanation:

- In 2000 a project was realized aiming to put all available data on StatLine.
- The same information is available for all users at the same time.
- This standard is also valid for custom-made statistics.

Risk if the standard is not met:

- Some users get information before other users.

7.2 Timeliness of dissemination of statistical output

See chapter 10 in the Checklist quality of statistical output (Van Nederpelt, 2009b) for further information about this quality area.

A	The 1-to-1 standard is met.

Explanation:
- The production is not longer than the reference period. The duration of the production starts at the end of the reference period.
- Eurostat regulations generally mention a delivery date. This delivery date should be met.
- The standard applies to the first version of the data (preliminary data).
- The standard is valid for external users.
- See also section 5.2 (Consistency of statistical data).

Code of Practice:
- Principle 13: European Statistics must be disseminated in a timely [..] manner.
- Indicator 13.1: Timeliness meets the highest European and international dissemination standards.
- Indicator 13.5: Preliminary results of acceptable aggregate quality can be disseminated when considered useful.

DQAF:
- Indicator 4.1.2: Timeliness follows dissemination standards.

Remark
- Timeliness is a proven method to increase the efficiency of a process. By shortening the duration bottlenecks in the process become clear and can be resolved.

Risk if the standard is not met:
- Data are not up to date. → Data are no longer relevant.

7.3 Predictability of dissemination of statistical output.

See chapter 11 in the Checklist quality of statistical output (Van Nederpelt, 2009b) for further information about this quality area. It regards output for internal as well as external users.

A	Date and time of dissemination of output are announced in advance.

Explanation:
- The release date is determined by SN taking into account the requirements of users like Eurostat.
- A standard release time is set for all statistics.
- This standard is meant to avoid the appearance that the day and time of publication is chosen for opportunist reasons. If SN publishes data about immigrants a day before or a day after the elections, it is because it was planned this way and not because of the elections.

Code of Practice
- Indicator 6.5: Statistical release dates and times are pre-announced.
- Indicator 13.2: A standard daily time is set for the release of European Statistics.

DQAF:
- Indicator 5.1.3: Statistics are released on a preannounced schedule.

Risk if the standard is not met:
- People may get the idea that SN is not impartial.

B	Any divergence from the dissemination time schedule is publicized in advance, explained and a new release date set.

Explanation:
- None

Code of Practice
- Indicator 13.4: Any divergence from the dissemination time schedule is publicized in advance, explained and a new release date set.

Risk if the standard is not met:
- SN will not pass inspection.

7.4 Punctuality of dissemination of statistical output

See chapter 11 in the Checklist quality of statistical output (Van Nederpelt, 2009b) for further information about this quality area. It regards output for internal as well as external users.

Code of Practice
- Principle 13: European Statistics must be disseminated in a [...] punctual manner.

A	The dissemination of data is pre-announced at least one month in advance on the Internet.

Explanation:
- This standard regards only external users.

Risk if the standard is not met:
- Lack of clarity for the user.

B	The most important data were published on time in the last 12 months.

Explanation:
- 'The last 12 months' indicate that the process is in control.
- The announced time means the time of publication on the Internet.
- The auditor determines together with the audited party what the most important data are.

Key performance indicators:
- For 2011 the following indicators are valid (CBS, 2010f):
  - The percentage press releases published on time. Target is 90%.
  - The percentage deliveries to Eurostat on time. Target is 90%.

Code of Practice
- Principle 13: European Statistics must be disseminated in a [..] punctual manner.

Risk if the standard is not met:
- Users regard SN as unreliable. → Damaging SN's image.

C	A production planning is available for the whole process.

Explanation:
- The process can be monitored only if a planning is available.
- A production planning describes at least when the input is delivered and when interim products and end products are ready.
- The 'whole process' regards the part of the chain within the scope of the audit.

Risk if the standard is not met:
- Delay in dissemination of data. → Irrelevant data.

7.5 Simultaneity of dissemination of statistical output

See chapter 11 in the Checklist quality of statistical output (Van Nederpelt, 2009b) for further information about this quality area.

A	All users have equal access to statistical releases at the same time.

Explanation:
- If the standard is not met, this must be published.
- On SN's website it is indicated for which statistics and for which parties data are available in advance under embargo (Over het CBS > Publicatiebeleid).
- At 9 November 2009 the Board of Directors has decided to not comply with a request for a pre-release arrangement. Existing agreements will be cut whenever possible.

Board of directors 25 October 2010 (embargo policy):
- There is no possibility to inspect publications in advance.
- If publications are prepared in cooperation with other parties, inspection in advance is unavoidable.
- Existing agreements are published on the website.
- The list of agreements has to be reduced within two years to a set of nominated agreements (at the latest 25 October 2012).

Code of Practice
- Indicator 6.6: All users have equal access to statistical releases at the same time and any privileged pre-release access to any outside user is limited, controlled and publicized. In the event that leaks occur, pre-release arrangements should be revised so as to ensure impartiality.

DQAF:
- Indicator 1.2.2: Internal governmental access to statistics prior to the release is publicly identified.
- Indicator 5.1.4: Statistics are made available to all users at the same time.

Risk if the standard is not met:
- SN is not regarded as impartial.
- Some users have prior knowledge which they can use to their advantage.

8 Accuracy of statistical data (figures)

In this chapter standards are defined regarding the accuracy of data. See chapter 6 in the Checklist quality of statistical output (Van Nederpelt, 2009b) for further information about this quality area.

Accuracy of statistical data regards aggregates, not micro data.

The accuracy of data depends on:
1. steps in the statistical process and
2. data sources (input)

Ad 1: Process steps
Causes of problems with accuracy of data can occur in the following process steps:
- Sampling
- Data collection
- Raising response
- Editing
- Imputation
- Outlier detection and processing
- Coding
- Transforming
- Linking
- Weighting and raising
- Correcting
- Publishing
- Logistic operations

As soon as a list of standard process steps is available, the list above can be replaced.

Ad 2: Data sources
- Data sources are data that are used but not produced by a statistical process.
- The quality of data sources is described in chapter 9 (Data source (input)).
- For aggregated external data chapter (8) at hand is applicable.

In order to be able to assess this chapter an overview of all deliverables to internal and external users must be available. The standards are applicable to all individual deliverables.

If specific agreements are made about accuracy of data these agreement should be complied with.

Code of Practice
- Indicator 8.3a: Survey designs, sample selections, and sample weights are well based [..]
- Indicator 8.4: Field operations, data entry, and coding are routinely monitored and revised as required.
- Indicator 8.5: Appropriate editing and imputation computer systems are used and regularly reviewed, revised or updated as required.

DQAF:
- Indicator 3.2.1: Source data – including censuses, sample surveys [..] – are routinely assessed, e.g., for coverage, sample error, response error, and nonsampling error; the results of the assessments are monitored and made available to guide statistical processes.

Evaluation of the design
The design of a method used in a statistical process can be evaluation by verifying how the design is effected (process-oriented instead of product-oriented evaluation). This way it can be prevented that the design must be evaluated again. This is not feasible in a standard audit or self-assessment.

Standards are:

1. The design is compiled and/or reviewed by a methodology expert.
2. The design is compiled and/or reviewed by a subject matter expert.
3. The design is complete, coherent and non-ambiguous.
4. The method is part of the Standard methods (CBS, 2010b).

There are two options if a method does not comply with the Standard methods
- Offer the method to the editors of the Standard methods so the method can be added to the Standard methods.
- Compiling a plan to migrate to the right method. The timeline is dependant on the consequences for the accuracy of the data (urgency).

Evaluation of the implementation
Also the implementation of a method in a statistical process can be evaluated by verifying how the implementation of the method is effected and how the production process is organized.

Standards are:
5. The application is tested by the users (acceptance test).
6. The acceptance test contains test cases, test expectancies en test results. The test results are compared with test expectancies. There are reports about the acceptance test.
7. In case of changes the application is retested. A test where the application is integrally tested stands out clearly (regression test).
8. Parameters of the method are regularly evaluated. The frequency of evaluation is dependant on the frequency of the statistic and the stability of the phenomenon that is observed.

Evaluation of the realization
9. Processes are in place to check the plausibility of the results.
10. Applications are used as intended. Work-arounds and bypasses don't exist.
11. Staff follows the guidelines and instructions.

The evaluation period is the last 12 month.

8.1 Compliance with the allowed margins

A	The right combination of methods is chosen in order to realize the allowed margins.

Explanation:
- A margin is synonymous with total error.
- It must be clear which methodological considerations have been made in order to realize the allowed margin.
- If the margin is not spelled out in writing in an output specification, a self-evident margin can be assumed.

Risk if the standard is not met:
- The allowed margin is not realized.

8.2 Sampling

A	The sampling method should be well designed.

Explanation:
- See "Evaluation of the design" at the beginning of this chapter.
- The method must comply with the Standard methods: Sampling design.
- As a rule of thumb the sampling design is not older than 5 years.
- See chapter 9 (Data source (input)) about the quality of the sample framework.

Risk if the standard is not met:
- Inaccurate data.

B	The sampling method is well implemented.

Explanation:
- See “Evaluation of the implementation” at the beginning of this chapter.

Risk if the standard is not met:
- Inaccurate data.

C	The sampling method is realized properly.

Explanation:
- See “Evaluation of the realization” at the beginning of this chapter.

Risk if the standard is not met:
- Inaccurate data.

D	The sampling error is known.

Explanation:
- None

Code of Practice
- Indicator 12:2a: Sampling errors [..] are measured and systematically documented according to the framework of the ESS quality components...

Risk if the standard is not met:
- Unfamiliarity with data variance.

E	The sampling error meets the requirements.

Explanation:
- This standard is only applicable if agreements are made about the allowed sampling error.

Risk if the standard is not met:
- Variance is too large.

8.3 Data collection

A	The questionnaire is well designed.

Explanation:
- The method must comply with the Standard methods: Questionnaire development.
- The Questionnaire lab is asked to assess the questionnaire and the associated instructions.

Code of Practice
- Indicator 8.2: In case of statistical surveys, questionnaires are systematically tested prior to the data collection.

Risk if the standard is not met:
- The questionnaire is not valid. → Measurement errors. → Bias.

B	The questionnaire is well implemented.

Explanation:

- The design of the questionnaire is well converted into Blaise or in a paper version.

Risk if the standard is not met:
- The questionnaire is not valid. → Measurement errors. → Bias.

C	The approach strategy is well designed.

Explanation:
- See “Evaluation of the design” at the beginning of this chapter.
- The method must comply with the Standard methods: Approach strategy.

Risk if the standard is not met:
- The questionnaire is not valid. → Measurement errors. → Bias.

D	The approach strategy is well implemented.

Explanation:
- See “Evaluation of the implementation” at the beginning of this chapter.

Risk if the standard is not met:
- De collected data are not valid. → Measurement errors. → Bias

E	The approach strategy is realized properly.

Explanation:
- See “Evaluation of the realization” at the beginning of this chapter.

Risk if the standard is not met:
- De collected data are not valid. → Measurement errors. → Bias.

F	The interviewers are well instructed for the survey at hand.

Explanation:
- Interviewers are fieldworkers and staff who contact respondents by phone or email.
- Interviewers must be instructed for each survey.
- The method must comply with the Standard methods: Interview training.

Risk if the standard is not met:
- The collected data are not valid. → Measurement errors. → Bias.

8.4 Response

It regards response in case of preliminary data collection.

A	The response raising measures are well designed.

Explanation:
- See “Evaluation of the design” at the beginning of this chapter.
- The method must comply with the Standard methods: Response raising measures.

Risk if the standard is not met:
- The response is too low. → Inaccurate data.

B	The response raising measures are well implemented.

Explanation:
- See “Evaluation of the implementation” at the beginning of this chapter.

Risk if the standard is not met:
- The response is too low. → Inaccurate data.

C	The response raising measures are realized properly.

Explanation:
- See “Evaluation of the realization” at the beginning of this chapter.

Risk if the standard is not met:
- The response is too low. → Inaccurate data.

D	The response rate is known.

Explanation:
- Response = net sample.
- See coverage in case of secondary data sources 9.1 (Completeness of units in the register).

Risk if the standard is not met:
- Variance is too high. → Inaccurate data.

E	The response rate meets the requirements.

Explanation:
- This standard is only relevant if the response rate is agreed upon.

Risk if the standard is not met:
- Variance is too high. → Inaccurate data.

F	The selectivity of the response is known.

Explanation:
- Selectivity of the response can cause bias, even if the sample is random.
- Familiarity with the selectivity of the response makes corrections possible.

Risk if the standard is not met:
- Bias is unknown. → Inaccurate data.
- Correction for selectivity of the response is impossible.

8.5 Editing

A	The editing methods are well designed.

Explanation:
- See “Evaluation of the design” at the beginning of this chapter.
- The method must comply with the Standard methods: Correct.

Risk if the standard is not met:
- Inaccurate data.

B	The editing methods are well implemented.

Explanation:
- See “Evaluation of the implementation” at the beginning of this chapter.

Risk if the standard is not met:
- Inaccurate data.

C	The editing methods are realized properly.

Explanation:
- See “Evaluation of the realization” at the beginning of this chapter.

Risk if the standard is not met:
- Inaccurate data.

8.6 Imputation

A	The imputation method is well designed.

Explanation:
- See “Evaluation of the design” at the beginning of this chapter.
- The method must comply with the Standard methods: Imputation.

Risk if the standard is not met:
- Inaccurate data.

B	The imputation method is well implemented.

Explanation:
- See “Evaluation of the implementation” at the beginning of this chapter.

Risk if the standard is not met:
- Inaccurate data.

C	The imputation method is realized properly.

Explanation:
- See “Evaluation of the realization” at the beginning of this chapter.

Risk if the standard is not met:
- Inaccurate data.

8.7 Outlier detection and processing

A	The method for outlier detection and processing is well designed.

Explanation:
- See “Evaluation of the design” at the beginning of this chapter.
- The method must comply with the Standard methods: Representative outliers.
- In case of outliers extreme values exist that are not wrong as it is.

Risk if the standard is not met:
- Inaccurate data.

B	The method for outlier detection and processing is well implemented.

Explanation:
- See “Evaluation of the implementation” at the beginning of this chapter.

Risk if the standard is not met:
- Inaccurate data.

C	The method for outlier detection and processing is realized properly.

Explanation:
- See “Evaluation of the realization” at the beginning of this chapter.

Risk if the standard is not met:
- Inaccurate data.

8.8 Transforming

Another term for transforming is deducing.

There are no methods available in the Standard methods for transformations with the exception of the calculation of indices.

In the standards below it is assumed that transformations are done in one step. However, it is possible that this is done in two or more steps.

A	The transformation to target units is well designed, implemented and realized.

Explanation:
- This regards transformation of observed units to target units e.g., transformation of legal units to statistical units and transformation from allowances to persons with one or more allowances.
- See “Evaluation of the design, implementation respectively realization” at the beginning of this chapter.

Risk if the standard is not met:
- Inaccurate data.

B	The transformation to the target population is well designed, implemented and realized.

Explanation:
- This regards transformation of the observed population to the target population.
- If Imputation or Weighting and raising are used, this standard can be skipped.
- See “Evaluation of the design, implementation respectively realization” at the beginning of this chapter.

Risk if the standard is not met:
- Inaccurate data.

C	The transformation to target data items are well designed, implemented and realized.

Explanation:
- It regards the transformation of observed data items to goal data items.
- See “Evaluation of the design, implementation respectively realization” at the beginning of this chapter.

Risk if the standard is not met:
- Inaccurate data.

D	The transformation to goal classifications is well designed, implemented and realized.

Explanation:
- There are three types of transformations to target classifications.
    - Recoding: transforming to another classification data item without loss of information.

        - Classifying: transforming to another classification data item with loss of information.
        - Coding: transforming open answers to closed answers. Other terms are classifying and categorizing.
- The Standard method does not describe this subject.
- The Supplementary standard method does describe this subject but this description is not suitable as framework.
- The terms frame errors or classification errors are also used in this context.
- However, frame errors also concern other errors in the sampling framework, like coverage errors.
- See “Evaluation of the design, implementation respectively realization” at the beginning of this chapter.

Risk if the standard is not met:
- Classification errors. → Incorrect distribution of data over the subpopulations.

E	The transformation to target period or time is well designed, implemented and realized.

Explanation:
- This regards transformation of the observed period or time to the target period or time.
- The term ‘population time’ is also used.
- See “Evaluation of the design, implementation respectively realization” at the beginning of this chapter.

Risk if the standard is not met:
- Inaccurate data.

F	Calculations are well designed, implemented and realized.

Explanation:
- Examples of calculations are: aggregate to totals, calculate averages, calculate developments (growth rates), and calculate indices.
- See “Evaluation of the design, implementation respectively realization” at the beginning of this chapter.
- The method must comply with the Standard methods in case of indices: Indices.

DQAF:
- Indicator 2.4.1: Market prices are used to value flows and stocks.
- Indicator 2.4.2: Recording is done on an accrual basis.
- Indicator 2.4.3: Grossing/netting procedures are broadly consistent with internationally accepted standards, guidelines, or good practices.

Risk if the standard is not met:
- Inaccurate data.

8.9 Matching

A	The matching method is well designed.

Explanation:
- See “Evaluation of the design” at the beginning of this chapter.
- The method must comply with the Standard methods: Matching.

Risk if the standard is not met:
- Inaccurate data.

B	The matching method is well implemented.

Explanation:
- See “Evaluation of the implementation” at the beginning of this chapter.

Risk if the standard is not met:
- Inaccurate data.

C	The matching method is realized properly.

Explanation:
- See “Evaluation of the realization” at the beginning of this chapter.

Risk if the standard is not met:
- Inaccurate data.

8.10 Weighting and raising

A	The weighting and raising methods are well designed.

Explanation:
- See “Evaluation of the design” at the beginning of this chapter.
- The method must comply with the Standard methods: Weighting as correction for non-response.

Risk if the standard is not met:
- Inaccurate data.

B	The weighting and raising methods are well implemented.

Explanation:
- See “Evaluation of the implementation” at the beginning of this chapter.

Risk if the standard is not met:
- Inaccurate data.

C	The weighting and raising methods are realized properly.

Explanation:
- See “Evaluation of the realization” at the beginning of this chapter.

Risk if the standard is not met:
- Inaccurate data.

8.11 Adjustments (not editing)

A	The correction method is well designed.

Explanation:
- The term adjustment is not meant as editing but for:
  - Seasonal adjustments
  - Adjustments for working days
  - Adjustments for shopping days
  - Adjustments for quality of a products
- See “Evaluation of the design” at the beginning of this chapter.
- In case of seasonal adjustments the method must comply with the Standard methods: Seasonal adjustments.

Risk if the standard is not met:
- Bias.

B	The correction method is well implemented.

Explanation:
- See “Evaluation of the implementation” at the beginning of this chapter.

Risk if the standard is not met:
- Bias.

C	The correction method is realized properly.

Explanation:
- See “Evaluation of the realization” at the beginning of this chapter.

Risk if the standard is not met:
- Bias.

8.12 Publishing

A	The variance of each data is acceptable.

Explanation:
- The smaller the sample or response the larger the variance. This is true for each subpopulation about which data is published (or table cell).
- The argument “there is nothing better available” is no argument to publish.
- The acceptability of the variance is also dependant on the requirements of the user. However, there is a limit to what SN will publish.

Risk if the standard is not met:
- Inaccurate data.

B	All numerals in a published figure are significant.

Explanation:
- The figure 234 contains the numerals 2, 3 and 4.
- The number of numerals in which a figure is published suggests that each numeral is significant. For example the figure 34.6 suggests that the real value is 34.6 ± 0.05 and the number 300 suggests that the real value is between 250 and 350.
- The variance must be known in order to evaluate if the number of significant numerals of each figure is right.

Risk if the standard is not met:
- Apparent accuracy.

C	The statistical symbols are properly applied in the StatLine tables.

Explanation:
- The following symbols are distinguished:
  . : data not available
  * : provisional figure
  - : nil
  x : publication prohibited
  a blank : category not applicable

Risk if the standard is not met:
- Mislead users.

8.13 Logistic operations

Logistic operations in this framework are data-entry, importing, selecting, replacing and publishing of data.

Also logistic operations are designed, implemented and realized. This triad is not used explicitly here.

A	Sufficient measures have been taken to avoid or correct errors with data entry and or importing data.

Explanation:
- In case of importing data into files or databases they must have been checked and the data must be fully included (completeness check).

Risk if the standard is not met:
- Inaccurate data.

B	Sufficient measures have been taken to avoid or correct errors with selecting and replacing files.

Explanation:
- It is possible to select a wrong version of a file.

Risk if the standard is not met:
- Inaccurate data.

C	Sufficient measures have been taken to avoid errors in published statistical output.

Explanation:
- Publication errors originate when the results of the production process is converted into StatLine tables and product that are delivered to users.

Risk if the standard is not met:
- Inaccurate statistical output.

9 Data source (input)

A data source is a data set that is input for a statistical process.

A data set can fulfill different roles:
- Data for compiling a statistic
- Sample framework
- Input for determining weights for raising

A data source can be a micro data set as well as an aggregate.

In case of a micro data set the following objects and associated characteristics can be distinguished:
- Dataset: completeness, stability and timeliness/punctuality.
- Unit: completeness, confidentiality, correctness, selectivity, stability, timeliness and unicity.
- Data (items): coherence, completeness, confidentiality, correctness, selectivity, stability, timeliness and unicity.

These sub objects and characteristics are derived from the paper authored by Daas et al. (2010).

As yet a choice from the mentioned characteristics is made for the Standard. The characteristics of the object register are not exhaustive.

The characteristics of aggregates are dealt with in chapter 4 (Statistical concept), 5 (Statistical data (figures)), 6 (Statistical output), 7)Dissemination of statistical output) en 8 (Accuracy of statistical data (figures)).

For data sources the following characteristics are distinguished:
1. Completeness of units (in case of registers)
2. Correctness of units (in case of registers)
3. Completeness of data
4. Correctness of data
5. Coherence of data items with the statistical concept of the output
6. Accuracy (in case of aggregates)

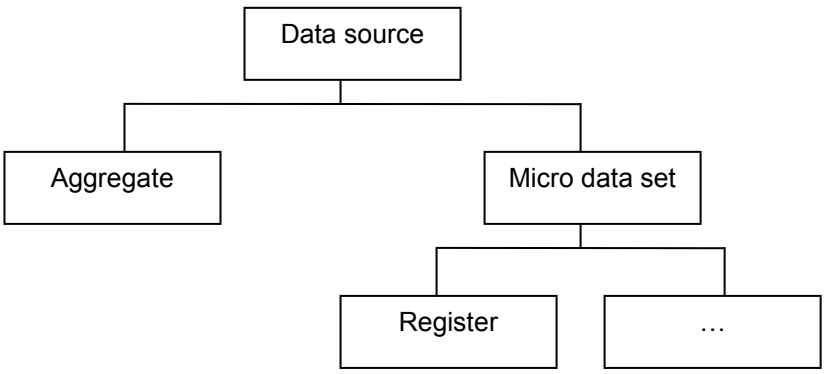

Figure 2 Object model

DQAF:
- Indicator 3.2.1: Source data – including [..] administrative records – are routinely assessed, e.g., for coverage, sample error, response error, and nonsampling error; the results of the assessments are monitored and made available to guide statistical processes.

9.1 Completeness of units in the register

A	Overcoverage is sufficiently adjusted.

Explanation:
- In case of overcoverage the datasets contains more units than the target population. The register includes units that don't belong there (for our purpose).
- Overcoverage must be known in order to make adjustment possible.

Risk if the standard is not met:
- Coverage error. → Bias.

B	Double units are removed.

Explanation:
- Doubles can also occur across datasets.
- Doubles must be recognized in order to be able to remove them.

Risk if the standard is not met:
- Coverage error. → Bias.

C	Undercoverage is sufficiently adjusted.

Explanation:
- In case of under coverage the dataset contains fewer units than the target population.
- This corresponds with unit non-response at primary data collection. It this case it regards unit non-response at the data supplier.
- It is possible that a dataset gets filled in the course of time, but one cannot wait until all units are available. The degree of filling is then insufficient. This happens for example with the VAT data.
- For unit non-response see section 8.4 (Response).
- Structural undercoverage is also possible.
- Undercoverage must be known in order to be able to make adjustments.

Risk if the standard is not met:
- Coverage error. → Bias.

9.2 Correctness of units in the register

A	A deviating structure of units is sufficiently adjusted.

Explanation:
- The structure of a unit deviates if this unit does not comply with the definition of this unit.
- This is only relevant if the structure of a unit influences the end result, e.g., business units.
- For example total turnover is dependant on the composition of a business unit. As units are larger and turnover is consolidated, total turnover becomes smaller. Turnover within units is ignored.
- See also in section 8.8 (Transforming) the standard about transformation of units.

Risk if the standard is not met:
- Bias.

9.3 Completeness of data in a micro data set

A	Missing data are sufficiently adjusted.

Explanation:
- It regards item non-response in the process of the data supplier.
- Missing values.
- Distinguish the design, implementation and realization of the adjustments.

Risk if the standard is not met:
- Inaccurate data.

9.4 Correctness of data in the micro data set

A	Errors in identifying data items are sufficiently adjusted.

Explanation:
- Identifying data items identify a unit (primary key) or link to another unit in another dataset (foreign keys).
- Example is someone's social security number.
- Identifying data items are necessary for matching datasets and remove doubles in a dataset.

Risk if the standard is not met:
- Matching is not realized (missed matches). → Enrichment of data is not effected.
- Wrong matches take place (mismatches). → Inaccurate data.
- Doubles are not recognized. → Bias.

B	Errors in classifying data items are sufficiently adjusted.

Explanation:
- Classifying data items are data items from classification systems like NACE, regions, size, etc.

Risk if the standard is not met:
- Bias of data of subpopulations.

C	Errors in quantifying data items are sufficiently adjusted.

Explanation:
- Quantifying data items are used to calculate the figures.

Risk if the standard is not met:
- Bias.

9.5 Coherence of concepts of the micro data set and the statistical concepts of the output

A	The concepts of the micro data set sufficiently match the concepts of the output.

Explanation:
- There is sufficient resemblance between the concepts of the micro data set and the statistical output concerning:
  - Unit
  - Definition of the population
  - Subpopulations
  - Data items
  - Reference period
- Coherence can be a problem in case of secondary data sources, where SN did not determine the statistical concepts.

Code of Practice:
- Indicator 8.1: When European Statistics are based on administrative data, the definitions and concepts used for administrative purpose must be a good approximation to those required for statistical purposes.

DQAF:
- Indicator 3.1.2: Source data reasonably approximate the definitions, scope, classifications, valuations, and time of recording required.

Risk if the standard is not met:
- Too many transformations necessary. → Inaccurate output.
- Irrelevant output if not all necessary transformations are executed.

9.6 Accuracy of the aggregates

A	Aggregates are sufficiently accurate.

Explanation:
- It concerns aggregates that are uses as auxiliary dataset, e.g., in case of weighing and raising.

Risk if the standard is not met:
- Bias.

10 Provision of data sources (input)

A data source can be provided by internal as well as external suppliers. See chapter 9 (Data source (input)).

10.1 Punctuality of input provision

A	Data sources were provided on time in the last 12 months.

Explanation:
- "Twelve months" indicate that the provision process is in control.
- It is assumed that agreements have been made about the date of provision. See chapter 2 (Agreements with external data suppliers) and section 3.2 (Correctness of internal agreements).

DQAF:
- Indicator 3.1.3: Source data are timely.

Risk if the standard is not met:
- Data are not published on time. → Damage to reputation.

10.2 Continuity of provision of data sources

Continuity of provision of data sources is the degree to which input is provided on time.

A	A risk analysis is available regarding the continuity of provision of data sources.

Explanation:
- This standard concerns only statistics important for the SN's image and secondary data collection. For other statistics this standard is a recommendation.
- The Board of Directors decided on this standard on 26 January 2009. Update of the risk analysis must be realized synchronous with the update of the Quality document. This update is annual.
- This risk analysis has been called fall-back scenario or emergency procedure.
- There is a relationship with 7.4 (Punctuality of dissemination of statistical output). If the input is not on time, there is chance that the output will not be on time as well.

Risk if the standard is not met:
- Delay of statistical output.

11 Quality reports

In the chapter standards are described that regards the quality of the quality reports to all users (internal and external, except StatLine users).

Section 6.1 (Clarity of statistical output) describes the quality of quality report (table explanation) for StatLine users.

Quality reports are used for two purposes:
- Testing if the agreed quality is realized and subsequently managing the process. Extra measures can be considered if the quality is insufficient.
- Giving account about the quality of the products.

In order to be able to assess the standards in this chapter, an overview of all output specifications or agreements with users should be available.

The following characteristics of quality reports are distinguished:
1. Availability
2. Compliance with Eurostat regulations
3. Compliance with agreements with other users
4. Punctuality of provision

11.1 Availability of quality reports

A	All agreed quality reports are provided.

Explanation:
- This standard concerns quality reports to internal users as well as external users.
- According to the business architecture datasets must be accompanied by quality reports. The user of the dataset can test if the realized quality complies with the agreed quality.

DQAF:
- Indicator 1.2.4: Advanced notice is given of major changes in methodology, source data, and statistical techniques.

Risk if the standard is not met:
- Users cannot evaluate the quality of the output.

11.2 Compliance of quality reports with Eurostat regulations

A	Information about quality required according to Eurostat regulations is provided.

Explanation:
- Eurostat regulations include guidelines, recommendations and gentlemen's agreements.
- It is dependent on the regulation if quality information is asked for and if yes, which information.
- Regulation 58/97 1996 concerning structural business statistics (SBS) states in section 6 of Annex 1: "[..] Member States will indicate the degree of precision by reference to a confidence level of 95% [..]"

Risk if the standard is not met:
- Damage to reputation.

B	There is a plan to migrate to Euro SDMX Metadata Structure (ESMS) for deliveries to Eurostat.

Explanation:
- "Recommendation on reference metadata for the ESS" (Eurostat, 2009) prescribes which quality information should be provided. See items 13-17 of its annex.
- This recommendation concerns all statistics that are provided to Eurostat.
- Moreover, national statistical authorities are invited to regularly inform the Commission (Eurostat) of their application of the concepts and sub-concepts listed in the Annex.
- At SN it is common practice to consider recommendations as regulations.

Code of Practice:
- Indicator 12.2: Sampling errors and non-sampling errors are measured and systematically documented according to the framework of the ESS quality components.

Risk if the standard is not met:
- Damage to reputation at Eurostat.

11.3 Compliance of quality report to agreements with other users than Eurostat

A	Quality reports have the agreed content.

Explanation:
- This standard concerns internal and external users.
- If there are no agreements about quality reports this standard is not applicable.

Risk if the standard is not met:
- Dissatisfied users.

11.4 Punctuality of provision of quality reports

A	Quality reports were provided on time in the last 12 months.

Explanation:
- This standard concerns all users: internal, external including Eurostat.

Risk if the standard is not met:
- Dissatisfied users.

12 Documentation

The standards in this chapter are new and introduced in this report.

Remark: Ask the auditee to comply with the standards below in preparation for an audit. This supports the efficiency of the statistical process as well as the auditing process.

The following characteristics of documentation can be distinguished:

1. Completeness
2. Topicality
3. Version, validity and status
4. Convenience of arrangements
5. Accessibility

12.1 Completeness of the documentation

A	The documentation consists of a minimum set of information.

Explanation:

- The following information is part of the documentation:
  1. Agreements with external users: regulations, protocols, contracts, manuals with required methods, etc.
  2. Output specifications regarding all external users.
  3. Agreements with external suppliers
  4. SLA's and SSL's with internal suppliers and users
  5. Risk analysis secondary data sources (only for statistics that are important for SN's image)
  6. Short survey description and possible other survey descriptions
  7. Release policy
  8. Quality document
  9. Documents that describe the implemented methodology (process metadata). This can be documents like the Business Analysis Document (BAD) and Methodology Advise Document (MAD) as far as they already exist for the process at hand.
  10. Document with proposal, suggestions, etc. about adaptations of the methodology. Analysis and results of experiments.
  11. System documentation of the implemented information systems.
  12. Handbooks and instructions.
  13. Test documentation about the acceptance of implemented information systems including a standard test set.
  14. Production planning
  15. Announcements within the framework of the Dutch privacy law.
  16. All other documents to which is refereed in the Quality document.
- Statistical data and quality reports are not part of the minimum set. In the future the Data Service Centre will provide this information.

Risk if the standard is not met:

- It takes too much time for users, assessors and developers to find the right information.

12.2 Topicality of documentation

A	The documentation concerns the process that is currently in production.

Explanation:
- The documentation must comply with the current process.
- Documents must be distinguished that refer to the current process, historical versions and future versions.
- If changes take place in the process all relevant documents must be changed as well. Changes take for example place in case of an incident.
- The topicality of the Quality document is already mentioned in section 21.2 (Topicality and status of the Quality document).

Risk if the standard is not met:
- It takes too much time for users, assessors and developers to find the right information.

12.3 Version, validity and status of the documentation

A	Version, validity and status of all documents are clear.

Explanation:
- The version of a document can be indicated by a version number and/or version data.
- It must be clear which reference period of the statistic corresponds with the documentation.
- It must be clear if a document is approved and by whom.

Risk if the standard is not met:
- It takes too much time to assess or change a process.

B	All documents are approved by the process owner.

Explanation:
- This standard is valid for documentation that concerns the current process.

Risk if the standard is not met:
- Unauthorized processes and methods.

12.4 Convenience of arrangement of documentation

A	Documentation is stored in an organized manner.

Explanation:
- A logical, organized folder structure is chosen that makes retrieval of documents easy.
- Each folder has subfolders for each reference period of the statistic (if applicable).

Risk if the standard is not met:
- It takes to much time to retrieve documents.

Remark:
- It is recommended to develop and implement a *standard folder structure* for SN.

12.5 Accessibility of documentation

It concerns the minimum set of documentation as described in section 12.1 (Completeness of the documentation).

A	Documentation is stored on SharePoint on a (sub) site.

Explanation:
- SharePoint is one of the standard tools for storing documentation that must be shared.
- The access rights can be managed by the users instead of the Service desk.
- Documentation is stored for each process on a SharePoint site.

Risk if the standard is not met:
- It cost too much time to manage documentation.

B	Documentation can be retrieved by all SN's staff.

Explanation:
- SN's staff have the right to read all documents on the site. User: cbs\domain users.
- This promotes transparency and transfer of knowledge.

Risk if the standard is not met:
- No transfer of knowledge about statistical processes.

13 Confidentiality of data

Code of Practice:

- Principle 5: The privacy of data providers (households, enterprises, administrations and other respondents), the confidentiality of the information they provide and its use only for statistical purposes must be absolutely guaranteed.

13.1 Confidentiality of micro data

A	The access to micro data is restricted to staff that has to process these data.

Explanation:

- The 'need to know' principle must be used.
- Micro data can appear as input as well as output.

DQAF:

- Indicator 0.1.3: Individual reporters' data are to kept confidential and used for statistical purposes only.

Risk if the standard is not met:

- Leaking information. → Confidence in SN shaken. → Respondents no longer respond.

B	Data of individuals (citizens) are made anonymous.

Explanation:

- Making data of individuals anonymous must be done as early as possible in the process.
- Data on businesses can also contain data about individuals e.g. in case of single owner businesses.

Risk if the standard is not met:

- Noncompliance with the Dutch privacy law.

13.2 Confidentiality of published data

A	Published data are statistically secured.

Explanation:
- The method must comply with the Standard methods on Statistical disclosure.
- The risk of disclosure of individual units (persons, businesses) must be sufficiently small.
- This standard is also valid for custom-made statistics.
- See chapter 16 in the Checklist quality of statistical output (Van Nederpelt, 2009b) for further information about this quality area.
- This standard is not valid for Eurostat as a user. SN and Eurostat both belong to the European Statistical System (ESS).
- See chapter 16 of the Checklist

Risk if the standard is not met:
- Lack of trust in SN. → Respondents no longer respond.

14 Conceptual meta data

Conceptual meta data are data (information) about data. This is:

- The description of the statistical unit.
- The description of the delineation of the population of these units.
- The names and definitions of the data items.
- The reference period or time. Also population time.

For statistical output (aggregates) the following is also applicable:

- The description of subpopulations by means of classification systems.

The conceptual metadata of statistical output is called the statistical concept.

In this chapter the conceptual metadata refer to the situation as it should be (ex ante).

In chapter 1 (Output specifications for external users) the quality of output specifications is described. In the output specification the statistical concept must be described.

In chapter 12 (Documentation) the quality of documentation in general is described. This includes the output specification.

The following characteristics of conceptual meta data are distinguished

1. Availability
2. Topicality
3. Degree of standardization

14.1 Availability of conceptual meta data

A	Conceptual metadata of all data in the statistical process are available.

Explanation:
- All data items in the statistical process must at least be defined (ex post). It must be clear what the meaning of each data item is.
- Further specification of data items is possible, but is not required yet. This will be addressed when the Data Service Centre is implemented.
- Section 1.4 (Completeness of output specifications) says that the conceptual metadata of output must be specified (‘ex ante’).

Risk if the standard is not met:
- Coherence between data items cannot be determined.

B	Conceptual meta data are available to staff.

Explanation:
- See also section 12.5 (Accessibility of documentation).

Risk if the standard is not met:
- Reuse of data is not promoted.

14.2 Topicality of conceptual meta data

A	Conceptual meta data correspond with the data of the current process.

Explanation:
- None

Risk if the standard is not met:
- The conceptual metadata are unusable or even misleading. → It takes too much time for assessors and developers.
- The explanation of the output is incorrect.

14.3 Standardization of conceptual meta data

A	Conceptual metadata are documented according to the guidelines of the Data Service Centre (DSC).

Explanation:
- This standard is valid as far DSC is used.
- DSC does not record data without conceptual meta data.
- See also the standard on Euro SDMX Metadata Structure (ESMS) in 11.2 (Compliance of quality reports with Eurostat regulations).
- ESMS and DSC are as yet separate.

Code of Practice
- Indicator 15.5: Metadata are documented according to standardized metadata systems.

Risk if the standard is not met:
- The meaning of data is not clear and is incorrect interpreted.

15 Knowledge

Several kinds of knowledge can be distinguished. Knowledge about subject matter, products, process, methodology, information systems, metadata and stakeholders.

In chapter 12 (Documentation) the knowledge is in writing is already mentioned. There is an exception for subject matter knowledge and knowledge about stakeholders.

15.1 Availability of knowledge of staff

A	Subject matter knowledge is adequately maintained.

Explanation:
- Subject matter knowledge concerns the phenomenon that is surveyed.
- Can be part of the contract between staff and management. Reading circles are a possible solution.

Risk if the standard is not met:
- The plausibility of data cannot be judged properly. → Inaccurate data.
- Changes in society are not observed.

B	Knowledge about stakeholders is adequately maintained.

Explanation:
- Stakeholders are supervisors, principals, users, suppliers, respondents.
- An account manager explicitly has the task to keep contact with certain stakeholders.

Risk if the standard is not met:
- Lack of cooperation of stakeholders. → Decreasing quality of statistical output.

16 Methodology

16.1 Soundness of methodology

A	Methodology is reviewed regularly.

Explanation:
- Reviewing takes place annually.
- See for evaluation criteria chapter 8 (Accuracy of statistical data (figures)).
- Methodology is preferably reviewed by an independent expert. This is not necessarily a DMK methodologist. Self-evaluation is an option too.
- It does not regard an audit. Audits have a broader scope. Audits can certainly use the results of these reviews.

Code of Practice:
- Principle 7: Sound methodology must underpin quality statistics. This requires adequate tools, procedures and expertise.
- Indicator 8.3b: Survey designs, sample selections, and sample weights are [..] regularly reviewed, revised or updated as required.

DQAF:
- Indicator 3.3.1: Data compilation employs sound statistical techniques to deal with data sources.
- Indicator 3.3.2: Other statistical procedures (e.g., data adjustments and transformations, and statistical analysis) employ sound statistical techniques.

Risk if the standard is not met:
- Inaccurate data.

17 Processes

Standards in this chapter concern only implemented processes (not: designed processes).

The following characteristics of processes are distinguished:
1. Efficiency
2. Completeness

17.1 Efficiency of implemented processes

Efficiency of processes means that the required quality is provided with minimal costs.

Code of Practice
- Principle 10: Resources must be effectively used.

DQAF:
- Indicator 0.2.2: Measures to ensure efficiënt use of resources are implemented.

A	Double work is avoided in the chain.

Explanation:
- None

Risk if the standard is not met:
- Productivity is too low.

B	IT is used in an optimal way in order to improve efficiency.

Explanation:
- IT-costs must be recovered within a reasonable time. The business cast or cost-benefit analysis must be positive.

Code of Practice
- Indicator 10.2: Routine clerical operations (e.g. data capture, coding, and validation) are automated to the maximum.
- Indicator 10.3: The productivity potential of information and communications technology is being optimized for data collection, processing and dissemination.

Risk if the standard is not met:
- Productivity is too low.

C	Methodology is used in an optimal way in order to improve efficiency.

Explanation:
- Methodology can also be used to improve the efficiency of processes.

Risk if the standard is not met:
- Productivity is too low.

D	The production activities are done by staff that has the right qualifications.

Explanation:
- Staff working below their level of competence is too expensive.

Risk if the standard is not met:
- Cost of labor is too high.

E	Administrative data are optimally used in order to improve efficiency.

Explanation:
- Primary data collection is generally more expensive that secondary data collection.
- Secondary data sources must have enough 'quality' to be useful for compiling statistical data with enough quality.

Code of Practice:
- Indicator 9.5: Administrative sources are used whenever possible to avoid duplicating requests for information.
- Indicator 10.4: Proactive efforts are being made to improve the statistical potential of administrative records and avoid costly direct surveys.

Board of Directors 16 August 2010:
- SN has the following survey strategy. Use secondary data sources as much as possible (completeness, timelines and quality are the criteria) and primary data collection if everything else fails (in the sequence: XBRL, web surveys, paper, CATI and CAPI).

Risk if the standard is not met:
- Administrative burden is too high.
- The costs of data collection and processing are too high.

F	Data that are already available within SN are (re)used.

Explanation:
- An important aim of the concepts of steady states in the business architecture is to reuse data. Datasets in steady states can be used by more internal users.
- This standard must be realized in the design stage. If the standard is not met, redesign can be considered. However, there must be a business case for such a change.

Code of Practice
- Indicator 9.6: Data sharing within statistical authorities is generalized in order to avoid multiplication of surveys.

Risk if the standard is not met:
- Surveys overlap. → Costs are too high.

G	Only variables and subpopulations are provided that are mentioned in the output specifications.

Explanation:
- See glossary for the term output specification.
- Subpopulations concern categories or classes or the level of detail of data.

Code of Practice
- Indicator 9.1: The range and detail of European Statistics demands is limited to what is absolutely necessary.

Risk if the standard is not met:
- Resources are not used adequately.

H	Standard output is optimally used.

Explanation:
- In case of custom made statistics standard solution can be considered.

Risk if the standard is not met:
- Costs are too high.

I	Generic services of SN are optimally used.

Explanation:

- Generic services are Data collection and Data Service Centre.

Risk if the standard is not met:

- Maintenance of specific solutions. → Costs are too high.

17.2 Completeness of implemented processes

A	Processes are in place for monitoring and validating source data, interim results and statistical output.

Explanation:
- If necessary – for statistics that are important for SN – support is asked from external experts.

Code of Practice
- Indicator 4.2: Processes are in place to monitor the quality of the collection, processing and dissemination of statistics.
- Indicator 4.5: There is a regular and thorough review of the key statistical outputs using external experts where appropriate.
- Indicator 12.1: Source data, intermediate results and statistical outputs are assessed and validated.

Risk if the standard is not met:
- Errors in the statistical output are not discovered. → Inaccurate data.

B	Processes are in place to evaluate to monitor the quality of output.

Explanation:
- Quality of output regards not only accuracy but all quality dimensions: relevance, timeliness, punctuality, coherence, comparability and consistency.

Code of Practice
- Indicator 4.1: Product quality is regularly monitored according to the ESS quality components.

Risk if the standard is not met:
- Output does not meet the quality requirements.

C	Processes are in place to deal with quality considerations.

Explanation:
- Timeliness, punctuality versus accuracy is the most obvious quality consideration.
- Quality considerations are usually dealt with in the design process.
- In the production stage it concerns only handling incidents: output delayed, output inaccurate, etcetera.

Code of Practice
- Indicator 4.3a: Processes are in place to deal with quality considerations, including tradeoffs within quality [..].

Risk if the standard is not met:
- Wrong priorities i.e. disseminate fast inaccurate data or waiting too long with data that are accurate enough.

18 Staff

The following characteristics of staff are distinguished:
1. Availability (quantitative)
2. Availability (qualitative)

18.1 Availability of staff (quantitative)

A	There is enough staff available quantitatively.

Explanation:
- Permitted capacity is large enough to execute planned work.
- Permitted capacity is utilized sufficiently.
- In case of temporarily falling-out because of illness or leave there is enough flexibility to absorb a deficit.

Code of Practice
- Principle 3: The resources available to statistical authorities must be sufficient to meet European Statistics requirements.
- Indicator 3.1a: Staff [..] both in magnitude and in quality, are available to meet current European Statistics needs.

DQAF:
- Indicator 0.2.1: Staff [..] are commensurate with statistical programmes.

Risk if the standard is not met:
- Output is incomplete.
- Dissemination of output is not punctual.

B	There is enough staff available at the right time

Explanation:
- None

Risk if the standard is not met:
- Output is incomplete.
- Dissemination of output is not punctual.

18.2 Availability of staff (qualitative)

A	Staff meets sufficient competence requirements.

Explanation:
- The permitted capacity is provided for the right functions and right function level taking into account the work that has to be done.
- Staff meets sufficiently the requirement that functions demand.

Code of Practice
- Indicator 4.4b: [..] staff is well trained.

Risk if the standard is not met:
- Insufficient quality of statistical output.

19 Information systems

The following characteristics of information systems are distinguished:
1. Availability
2. Accessibility
3. Integrity
4. Functionality
5. Maintainability

19.1 Availability of information systems

A	Information systems are sufficiently available.

Explanation:
- None

DQAF:
- Indicator 0.2.1: [..] computing resources [..] are commensurate with statistical programmes.

Risk if the standard is not met:
- Output is disseminated too late (not punctual).

19.2 Accessibility of information systems

SN implements Identity & Access Management (IAM). This makes a more effective and efficient access control possible. The Sector Process development and quality will fulfill the role of security officer. However, the standards below will be fully applicable.

A	Information systems are only accessible for authorized staff.

Explanation:
- An authorization procedure must be in place.
- The access rights must be changed in case of personnel changes.
- Checking of the correctness of the authorizations must be planned on a fixed month of the year.
- The 'need to know' principle must be used.

Risk if the standard is not met:
- Staff keeps authorizations that are no longer applicable in their new position.
- Unauthorized staff retrieves or changes data.

B	Access rights are assigned by the process owner.

Explanation:
- None.

Risk if the standard is not met:
- Authorization is improperly assigned to staff.
- Non-compliance with the Dutch privacy law.

19.3 Integrity of information systems

A	The integrity of information systems meets requirements.

Explanation:
- The requirements indicate in the Quality document.
- Only authorized staff has access to source code of the software. This authorization is generally reserved for the technical administrator of the software.
- Only authorized staff has direct access to data (files, databases). This is generally reserved for database administrators.
- In some cases, business rules and software are separated. Maintenance of these rules is segregated from production activities.
- Excel sheets run the risk that ‘source code’ (formulas, scripts) is not sufficiently protected.

Code of Practice
- Indicator 5.5: Physical and technological provisions are in place to protect the security and integrity of statistical databases.

Risk if the standard is not met:
- Unpredictable results.

19.4 Functionality of information systems

A	Information systems have the right functionality.

Explanation:
- All functions of the information systems are used. There are no superfluous functions.
- It is not necessary to use work arounds.

Risk if the standard is not met:
- Errors are made.
- Inefficient process.

19.5 Maintainability of information systems

A	Standard tools are used as much as possible.

Explanation:
- An initial list is approved by the Board of Directors (Renssen, et al., 2008). It should be noted if this list is not updated. As yet this standard cannot be evaluated.

Risk if the standard is not met:
- Insufficient knowledge available to be able to make changes in the software.

B	Information systems are built in a modular way.

Explanation:
- A modular construction of the process (process steps) promotes the modular construction of the information systems.
- In chapter 8 (Accuracy of statistical data (figures)) process steps are mentioned.

Risk if the standard is not met:
- Maintenance costs more.

C	Information systems are built in compliance with coding guidelines.

Explanation:
- This standard is valid for software developed by the statistical divisions.
- As yet only guidelines are known for building in programming language R. Information systems built in R must be certified by the expert centre *kennR!.*

Risk if the standard is not met:
- Maintenance costs more.
- Less flexible/maintainable software
- Less reusable
- Less transferable to other programmers
- Difficult to interpret for other programmers.
- Production errors

20 Remaining resources and services

20.1 Availability of remaining resources and services

A	The remaining resources and services are sufficiently available.

Explanation:
- Remaining resources are i.e. office space, furniture, infrastructure, peripheral equipment, office supplies, and non-standard equipment.
- Remaining services are i.e. personal management, printing, mail services, and purchasing, catering, archiving, financial administration.

Risk if the standard is not met:
- Delay in production. → Delay in dissemination of statistical output.

21 Quality document

The Quality document is compiled within the framework of quality assurance of the statistical processes and a regulation for government concerning information security (“VIR”).

The Quality document is also a sort of documentation. See chapter 12 (Documentation). Specific attention for the quality of this document is required because it aims to assure the quality of the process.

The following characteristics of Quality documents are distinguished.
1. Completeness
2. Topicality and status
3. Correctness and completeness of the individual templates
4. Clarity and non-ambiguity
5. Accessibility
6. Effectiveness of the measures referred to.

21.1 Completeness of the quality document

A	All templates are completed.

Explanation:
- The templates of the quality assurance system are used.
- The following templates are completed.
  - Front page (template A)
  - Graphical description of the process (template B)
  - Textual description of the process and sub processes (template C en D)
  - Information systems (template E)
  - Dependency analysis (template F)
  - (Process)measures, implementation plan and residual risk (template I)
- The vulnerability analysis (report G) is elaborated once for the whole organization, but is part of the Quality document.
- The description of measures taken for the whole organization (report H) is also part of the Quality document (“Basisbeveiligingsniveau”). The role of this document will be taken over by SN’s total quality management system (“CBS Kwaliteitsraamwerk”).

Risk if the standard is not met:
- No compliance with a government regulation for information security (“VIR”). → Damage to reputation.
- No delineation of the process. → No basis available for changes in the process or chain of processes.
- No overview of the measures taken. → Insufficient risk control.

21.2 Topicality and status of the Quality document

Topicality of documentation in general is described in section 12.2 (Topicality of documentation).

A	The Quality document no more than 36 months old for non-critical processes and no more than 12 months old for critical processes.

Explanation:
- Critical processes contribute to statistics important for SN's image.
- At the front page of the Quality document is stated if a process is critical or non-critical.

Risk if the standard is not met:
- The Quality document is out-of-date. → The Quality document loses his value as a tool for quality assurance.

B	The Quality document is approved by the process owner and sector manager.

Explanation:
- The front page is signed by the process owner and sector manager.

Risk if the standard is not met:
- Management is not committed. → The Quality document loses his value as a tool for quality assurance.

21.3 Correctness and completeness of the Quality document (details)

A	The content of the Quality document is correct and complete.

Explanation:
- Do not aim for a complete evaluation of this standard when auditing. Note just what you see.
- The standard concerns the content of all individual documents (details). Not the set of documents that make the Quality document.
- Template B of the Quality document must list all input and output to internal and external users.

Risk if the standard is not met:
- The Quality document loses his value as a tool for quality assurance.

21.4 Clarity and non-ambiguity of the Quality document (details)

A	The content of the Quality document is clear and non-ambiguous.

Explanation:

- The content of the Quality document must be easy to understand within the constraints of the template. Moreover, the content must not be open for misinterpretation.
- Do not aim at complete evaluation of this standard when auditing. Note just what you see.
- The standard concerns the content of all individual documents (details). Not the set of documents that make the Quality document.

Risk if the standard is not met:

- The Quality document loses his value as tool for quality assurance.

21.5 Accessibility of the Quality document

A	The Quality document is retrievable in Mavim.

Explanation:
- It regards the latest version of the Quality document
- The whole document is retrievable. There are no ‘dead links’

Risk if the standard is not met:
- No sharing of knowledge is effected.

21.6 Effectiveness of the mentioned measures

A	The measures included in the Quality document are effective.

Explanation:

- The standard measures are listed below. In the Quality document these measures are made specific for the relevant process. The process owner can add extra measures.

Table 8 Standard measures Quality document

Standard measure
01 Authorization procedure
05 Plausibility checks
06 External agreements
08 Archiving procedure
09 Statistical disclosure procedure
10 Delegated responsibilities and competences
11 Data conversions procedure
12 Production planning
13 Internal agreements
14 Holidays and leave
15 Version management
18 Working instruction and handbooks
19 Incident management
20 Calamity management
21 Problem management
22 Change management
23 Description of metadata
24 System documentation
25 The framework of the Dutch privacy law.

- The measures are known to staff.
- The measures are implemented.
- The measures have the desired effect and lead to sufficient control of the quality areas listed below. Requirements are met and the residual risk is acceptable.
- Sufficient measures are listed in the Quality document to control the risks concerning the 17 quality areas below.

Table 9 Quality areas regarding Quality documents

Nr	Quality area
1	Quality of agreements with users
2	Quality of agreements with suppliers
3	Soundness of the process
4	Availability and accessibility of knowledge
5	Availability of staff
6	Integrity of staff
7	Competence of staff
8	Punctuality of data (input)
9	Accuracy of data (input)
10	Completeness of data (input)
11	Confidentiality of data
12	Quality of meta data
13	Soundness of methodology
14	Availability of information systems
15	Accessibility of information systems
16	Integrity of information systems
17	Quality of other resources and services

- In the vulnerability analysis for each quality area is indicated which standard measure is applicable. See SN's Handbook quality assurance (CBS, 2008).
- Are all measures effective? Are measures out-of-data?
- In the Standard all quality areas listed above come up.

Risk if the standard is not met:
- Quality areas are not demonstrably under control.

22 Reporting burden

Reporting burden is the capacity it takes for respondents to answer the questions of SN.

It concerns not only the burden for businesses but for all respondents.

The following characteristics of reporting/response burden can be distinguished.
1. Level
2. Spreading
3. Necessity

22.1 Level of reporting burden

Code of Practice
- Principle 9: The reporting burden should be proportionate to the needs of the users and should not be excessive for respondents. The statistical authority monitors the response burden and sets targets for its reduction over time.

A	The reporting burden is measured annually.

Explanation:
- For 2011 a performance indicator for the reporting/response burden as measured by the response burden meter (EDM) is applicable. In 2011 the response burden may not be larger than in 2010.
- In 2008 the maximum reporting/response burden was Euro 19.7 million.

Risk if the standard is not met:
- The reporting burden increases.

B	IT is used optimal in order to decrease reporting burden.

Explanation:
- None.

Code of Practice
- Indicator 9.3b: [..] electronic means are used where possible to facilitate its (information sought from businesses) return.

Risk if the standard is not met:
- SN is out-dated. → Negative image.

22.2 Spreading of reporting burden

A	Reporting burden is spread over the survey population as much as possible.

Explanation:
- Is there a maximum number of times a respondent can be asked to cooperate?
- Are survey holidays implemented?

Code of Practice
- Indicator 9.2: The reporting burden is spread as widely as possible over survey populations through appropriate sampling techniques.

Risk if the standard is not met:
- Dissatisfied respondents. Unequal treatment (perceived). → Decreasing response. → Inaccurate statistical data.

23 Release policy

23.1 Availability of the release policy to the public

A	Release policy is available to the public.

Explanation:
- On 15 April 2004 the Board of Director decided that each statistic has a release policy.
- Release policies must meet the guideline Communications in case of adapted output (CBS 2007b). This guideline states: “The release policy is part of the survey description”.
- Release policy is also called publication strategy.

Risk if the standard is not met:
- Lack of clarity among the public.

24 Corrections, adjustments and revisions

The following characteristics of corrections, adjustments and revisions are distinguished:
1. Compliance with guidelines
2. Existence of analysis

24.1 Compliance of corrections, adjustments and revisions with guidelines

A	Corrections, adjustments and revisions comply with guidelines.

Explanation:
- Correcting is rectifying errors.
- Adjustement is converting preliminary data to final data. This can also take place after a longer period. In general after more time more data are available.
- Revision is also if the statistical concept is adapted retrospectively.
- Guidelines are described in Communications in case of adapted output (CBS 2007b).

Code of Practice
- Indicator 8.6: Revisions follow standard, well-established and transparent procedures.
- Indicator 6.3: Errors discovered in published statistics are corrected at the earliest possible date and publicized.

DQAF:
- Indicator 3.5.1: Studies and analyses of revisions are carried out routinely and used internally to inform statistical processes.
- Indicator 4.3.1: Revisions follow a regular and transparent schedule.
- Indicator 4.3.2: [..] revised data are clearly identified.
- Indicator 4.3.3: Studies and analysis of revisions are made public.

Risk if the standard is not met:
- The correctness of adaptations is not justified.

24.2 Existence of processes for analyzing corrections, adjustments and revisions

A	Processes are in place to analyze corrections, adjustements and revisions.

Explanation:
- The results of the analysis are used to improve the statistical process (feedback).

Code of Practice
- Indicator 12.3: Studies and analysis of revisions are carried out routinely and used internally to inform statistical processes.

Risk if the standard is not met:
- Errors are not noticed. → Inaccurate data.