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Topic 2 (ii) Metadata concepts, standards, models and registries

## **STRUCTURAL AND REFERENCE METADATA IN THE EUROPEAN STATISTICAL SYSTEM**

Submitted by Eurostat<sup>1</sup>

### **I. Introduction**

1. This paper describes the current production and use of structural and reference metadata at Eurostat and within the European Statistical System. By "structural metadata" we mean metadata acting as identifiers and descriptors of the data, e.g. data labels, dimensions of statistical cubes and, broadly speaking, data structures. By "reference metadata" we mean metadata describing the contents and the quality of the statistical data, such as description of concepts used, summary methodological descriptions and metadata describing the different quality dimensions, such as timeliness, accuracy and comparability.
2. The international SDMX standards – and the newly released "content-oriented guidelines" for the exchange and sharing of data and metadata, available at [www.sdmx.org](http://www.sdmx.org) – provide an opportunity for standardising structural and reference metadata between international organisations and within the European Statistical System. This should lead to a considerable improvement of structural metadata (data structures, code lists) and reference metadata (content metadata), first within Eurostat and in a second step across the European Statistical System. The document delineates the work plan and the actions planned within this process.

### **II. Functions of statistical metadata across the statistical business cycle**

3. The question of a clear definition of metadata has been discussed at length over many years and in several work sessions. Here we assume the classical definition of metadata as information about the data. Therefore, statistical metadata can be seen as any kind of information that makes figures understandable to the user (e.g. frequency of dissemination, statistical unit, time coverage, definitions, classifications, methodology) but also information about how and where data can be located and retrieved, an aspect that has often been neglected in the past, as if metadata were only relevant for the dissemination of summary methodological notes.
4. Basically, users need three things: a) assistance in searching for data, to find out which data are actually available and how they can be retrieved (data must be *accessible*); b) help to understand the meaning and limitations of the data (data must be *documented*); c) help to assess the reliability and the quality of the data

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for possible re-use: they need to know methodological aspects concerning the data, along the stages of the statistical life cycle (data must be *usable*).

5. The metadata environment realises three distinct functions<sup>2</sup>:

- a) search and navigation;
- b) interpretation;
- c) post-processing.

6. The degree of support required by the user depends on several elements: the user's profile (end-user, subject-matter expert, producer,...), informatics expertise and even general knowledge. The growth of statistical dissemination via the world-wide-web, for instance, leads to a higher demand for metadata, as the audience on Internet is not necessarily aware of the statistical context. At the same time, a higher degree of information is required to assess data quality and to help international comparability.

7. In recent years, several standards and guidelines have been developed and to various extents implemented all over the world: sector-based classification systems (national accounts, short-term statistics,...); general guidelines for metadata; Special Data Dissemination Standard from the IMF; Dublin Core, etc. These standards and guidelines, normally developed around metadata for particular types of statistics, concentrate very often on metadata for data relating to individual countries, rather than multi-national aggregates. Eurostat, being responsible for a wide range of statistics and for coordinating the European Statistical System, needs a more generic metadata model that takes into account how data are aggregated and that is compatible, where possible, with domain-specific models.

### III. The SDMX Content-oriented guidelines: a step forward towards international harmonisation

8. More international harmonisation of metadata systems seems necessary from several points of view. The main *impetus* for this, in the European Statistical System, has come through the European Statistics Code of Practice and the SDMX initiative on statistical data and metadata exchange.

9. The European Statistics Code of Practice was adopted in 2005. This Commission Recommendation requests in its principle 15 on accessibility and clarity that "metadata are documented according to a standardised metadata system" and also provides a detailed description of the principles, with a link to indicators for assessing data quality.

10. The SDMX initiative aims inter alia at "the development, maintenance and promotion of internationally recognised standards, guidelines and implementation tools that can facilitate the exchange of statistical data and metadata using state-of-the art information technology". SDMX is based on an information model which encourages – especially in its version 2.0 – the specification of formal rules for formatting metadata. This, in conjunction with content-oriented guidelines on the use of horizontal concepts to be used across domains, provides a significant improvement in the way we can standardise and re-use our respective data and metadata structures.

11. SDMX Technical standards are complemented with "content-oriented guidelines" aimed at establishing good practices in the use of a common terminology and in structuring data and metadata sets for supporting the exchange and encouraging re-use across domains. Although content-oriented guidelines are not strictly required for being conformant with the technical ISO standard, SDMX partners intend to promote the use of concepts that are common to as many statistical domains as possible.

12. During 2007, the work on Content-oriented Guidelines (COG) considerably progressed with a public release in February 2008<sup>3</sup>. The package released comprises an explanatory cover document with the following main annexes:

- Annex 1, Cross-Domain Concepts: list of metadata concepts relevant to several statistical domains, recommended for use in data and metadata exchange to promote interoperability. The list contains 62 concepts and sub-concepts which were identified by the SDMX initiative as main statistical concepts used across statistical subject-matter domains. The drawing up of this list was driven by the

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<sup>2</sup> This is the classification adopted in a paper prepared by a UNECE task-force in 1998-1999 and published in 2000 under the title "Guidelines for Statistical Metadata on the Internet" (CES, Statistical Standards and Studies N°52, Geneva, 2000, <http://www.unece.org/stats/publications/metadata.pdf>).

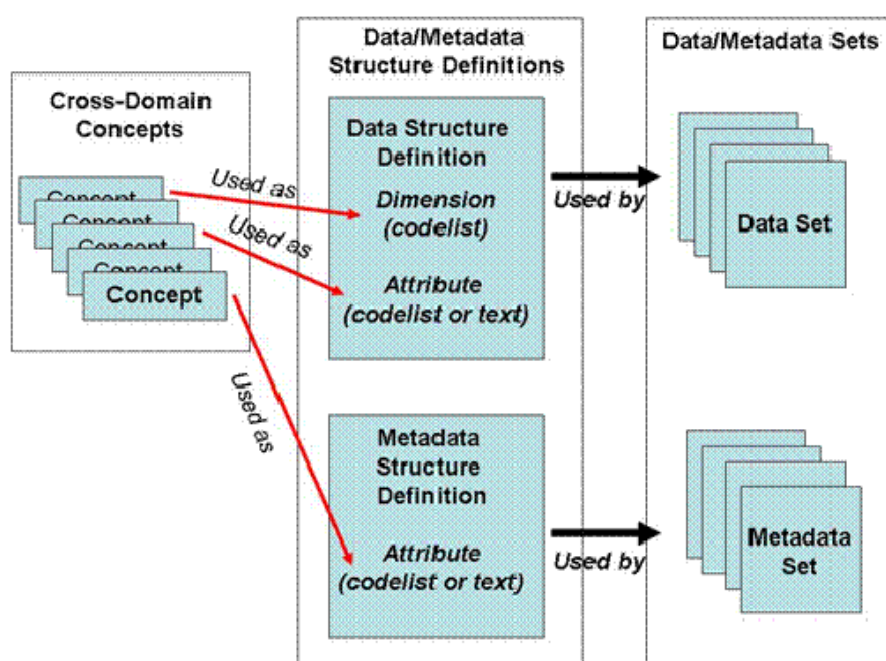
<sup>3</sup> See <http://www.sdmx.org>.

concepts already in use at the SDMX sponsoring organisations, and of course not all of the concepts are used by each organisation; more cross-domain concepts might be added with the next version of these guidelines.

- Annex 2, Cross-Domain Code Lists: 8 code lists are presented in this document, e.g. related to the observation status, frequency, sex or time format). These lists contain code values and code descriptions which are pivot values and descriptions to which the code values used by the SDMX sponsoring organisations or by other organisations can be mapped. Organisations however may dispose of additional code values and code descriptions which are not included in the lists presented. Furthermore, the public consultation period could also lead to a certain harmonisation of codes and code descriptions.
- Annex 3, Statistical Subject-Matter Domains: this document delineates a standard structure of statistical domains along three main categories: demographic and social statistics, economic statistics and environment and multi-domain statistics. This subject-matter domain structure should provide a starting point for organising the production and exchange of statistical data and metadata within SDMX (a standard scheme against which similar domain lists of various organizations can be mapped to facilitate the exchange of data and metadata).
- Annex 4, Metadata Common Vocabulary, MCV: the repository containing concepts and related definitions to which metadata terminology used in international and national data producing agencies may be mapped. This vocabulary also covers the cross-domain concepts list.
- Annex 5: SDMX-ML examples. The use of these SDMX content-oriented guidelines is supported by a set of IT tools which allow the production, transmission and exchange of SDMX-related data and metadata messages (in SDMX-ML).

13. The release of the SDMX Content-oriented Guidelines is a big step ahead with regard to the international harmonisation of SDMX-based data and metadata messages. Further improvements of this package will get necessary once the public comments to the package will have been taken into consideration. This is planned for autumn 2008.

14. In SDMX, each data set or metadata set should use standard concepts and structure definitions, so that systems which exchange data and metadata can understand what the data or metadata means. Chart 1 provides a schematic view of this multiple use of cross-domain concepts for assisting data and metadata exchange.



**Chart 1 – The use of standardised cross-domain concepts for data and metadata<sup>4</sup>**

<sup>4</sup> The illustration is taken from "SDMX Content-oriented Guidelines", February 2008, page 8.

15. SDMX cross-domain concepts can be used in three basic ways: a) as "dimensions" in the description of a data structure (e.g. reference area) with values typically taken from code lists; b) as "attributes in the description of a data structure" (e.g. "unit of measure"); c) as "attributes in the description of a metadata structure", for example using concepts such as "contacts", "timeliness", "dissemination format", "classification system", or "compilation".

16. The core of the SDMX model of reference metadata is the concept of "Metadata Structure Definition". The Metadata Structure Definition defines: a) which metadata concepts are to be reported; b) the identity of the Metadata Concept (for example a code which may simply be derived from the metadata concept scheme); c) format and representation (textual or coded); d) the role in its usage, e.g., mandatory or conditional.

17. Reference metadata may be attached to different object types (for instance a data set, a time series, or an observation). For several reasons, this kind of metadata is often attached at a high level (data set, or even at agency level) because it is often referred to several or even to all of the data sets. A Metadata Structure Definition also identifies the object the metadata are attached to.

#### **IV. The implementation of SDMX Content-oriented guidelines within the European Statistical System**

18. The implementation of the Content-oriented guidelines for metadata within the European Statistical System has started. This implementation mainly refers to the following fields:

##### **A. The Euro-SDMX metadata structure (ESMS)**

19. After consultation within Eurostat and with Member states, we compiled a list of 21 metadata cross-domain concepts, accompanied by a limited number of statistical sub-concepts, as the new standard for reference metadata to be implemented within Eurostat from third quarter 2008 onwards. This new standard is called Euro-SDMX metadata standard (ESMS, see annex 1) as it aims at implementing the SDMX cross-domain concepts at a European level.

20. Compared to the SDDS standard, the ESMS covers the standard items for reference metadata (such as contact, data presentation, confidentiality, timeliness, etc.) which can be channelled over from the previously used SDDS template. In addition, the ESMS covers more information on data quality in taking up a number of standard data quality criteria (such as relevance, comparability, accuracy, etc.). To a certain extent, it integrates information which is also part of the ESS standard quality reports.

21. Depending on the attachment level of the ESMS files, this new standard for reference metadata will allow a much better recording and comparison of the data quality reached by each survey. As we are also preparing a Commission Recommendation recommending the ESMS for the European Statistical System, we expect that it will also be implemented at the national level, for instance for compilation and transmission of reference metadata to Eurostat

##### **B. SDMX Cross-Domain Code lists**

22. The use and implementation of the SDMX Cross-domain code lists is less straight forward. The SDMX code lists recently published are *pivot* reference code lists. They can only be seen as first step towards further harmonisation. On the basis of the results of the public consultation (and on the basis of further input and discussions within the SDMX sponsoring organisations) the following working steps should follow:

- All code descriptions being part of the 8 code lists released should be checked again in terms of correctness and completeness. Additional descriptions should be added if needed.
- Further discussions on the codes itself should take place in order to take the opportunity of effectively harmonising them if possible.
- More cross-domain code lists should be added to the SDMX "acquis", with preference for those lists which are used in the SDMX data structure definitions.

23. The SDMX code lists released as pivot lists however already allow a mapping between codes used by different SDMX sponsoring organisations or by other organisations. Beyond the SDMX process, Eurostat is undertaking considerable efforts in harmonising code lists used within Eurostat and in a second step within the European Statistical System. This work has started in 2008 with a number of harmonised lists already released. When harmonising the ESS code, the utmost account will however be taken of the further work on the SDMX code lists in order to achieve as much international harmonisation as possible.

### **C. The SDMX Metadata Common Vocabulary (MCV)**

24. Since the start, the MCV project built on work already undertaken by Eurostat, OECD and other organisations, rather than confusing the situation by the development of a whole new set of definitions. Where possible, definitions have been drawn from existing international standards or from recommended statistical practices. In the present situation, with SDMX technical specifications and content guidelines published, the MCV is implicitly assuming a new role, at least in the part which is more strictly related to the smooth functioning of the data and metadata exchange process under SDMX rules, for instance for cross-domain concepts.

25. The number of terms authored as "SDMX" is growing, while another set of terms needs to be carefully harmonised with SDMX usage. These terms (around 200 of the current 411 terms) will be fully integrated with SDMX resources, such as the registries facilities being developed, while the wider set of metadata terms of more general use (including, for instance, the definition of statistical metadata or metainformation system) will still be linked to external sources and glossaries.

26. In Eurostat, the MCV is fully integrated within Eurostat's concepts and definitions repository (CODED) and with the metadata portal RAMON. Besides the direct and immediate implementation through the use of the SDMX Cross-Domain Concepts in the ESMS, additional MCV definitions should be used whenever specific metadata system use those terms. The SDMX MCV is promoted as the standard vocabulary related to structural and reference metadata to be used within Eurostat and the European Statistical System.

## **V. Metadata systems for structural and reference metadata**

### **A. The Eurostat metadata system**

27. The metadata system currently in use at Eurostat consists of several components. Structural metadata mainly consist of SDMX data structure definitions created and maintained by Eurostat, other data dictionaries and more than 500 code lists used for representing the structure of the data sets produced at Eurostat in the different domains or exchanged with other organisations. These codes, for instance, may be related to classifications (e.g. NACE or ISCO) or to data "dimensions" such as age, gender, etc.

28. At this stage, these code lists are not harmonised and cleaned across Eurostat and therefore not implemented across domains in a harmonised manner. This situation is not satisfactory as sometimes two different codes are used for the same underlying description (e.g. for the manufacturing of food products the codes B0210 and 15-16 are used for two different statistical domains in the Eurostat production databases) while some existing codes are outdated or no longer used.

29. Reference metadata are better harmonised, as Eurostat produces data descriptions in a standard format for free dissemination built on the SDDS format launched by the IMF more than ten years ago. These SDDS files, attached at several possible levels of the data tree (broad domain, sub-domain, or even statistical table for "structural indicators") contain metadata on data coverage, periodicity, timeliness, data access and data quality as well as more detailed survey-related information in the summary methodology. More than 650 of those files are currently available on the Eurostat webpage for free access by users. The number of reference metadata files increased in the recent years (+30% from end 2004 to end 2007) due to more statistical domains disseminated or to a lower attachment level in the data structure. These reference metadata are heavily used with more than 100 000 Internet hits per month.

30. In addition to reference metadata disseminated at Eurostat, also national reference metadata are compiled by countries and transmitted to Eurostat for a number of statistical domains (e.g. consumer prices, short-term statistics, and regional statistics). The structure and content as well as the dissemination of these national reference metadata is not yet harmonised across domains, at this stage.

31. Additional metadata cover classifications, concepts and definitions (under CODED, the concept and definitions database), information on statistical regulations and statistical manuals. These additional metadata are disseminated under the Eurostat portal RAMON, within the European Commission's network (for instance legal acts) or on the extranet CIRCA. These additional metadata also meet user needs with more than 200 000 page hits per month.

32. The metadata system handled at Eurostat is complemented by domain-specific quality reports (compiled as national quality reports by countries or as synthesis quality reports by Eurostat) providing more detailed information on data quality. The structure and the contents as well as the dissemination of these quality reports is not fully harmonised across domains, but the standard structure of the Eurostat quality reports is however respected in most cases. Furthermore, quality assessments of all Eurostat statistical processes and outputs are to be launched with a multi-annual frequency which will also contribute to an enhanced metadata system.

## **B. The national metadata systems**

33. National statistical institutes and other competent national authorities being part of the European Statistical System have their own national metadata systems for compiling, storing and disseminating data compilation methods, quality reports, classifications, concepts and definitions, etc. These systems are often mirroring some metadata systems used at Eurostat.

34. The national metadata systems are organised and disseminated rather heterogeneously. In a first attempt, Eurostat analysed those sites in using the national information disseminated on the web. This analysis led to the following main observations:

- The English versions of the national metadata stay often behind the versions kept in national languages.
- The national metadata should be better linked to data (which is also true for part of the Eurostat metadata).
- A good accessibility of the national metadata is not always assured.
- National reference metadata need more standardisation.
- The freshness of the national metadata should be assured.
- The formats used for the dissemination of national metadata should be improved in order to better enable downloads by users.

35. Based on the pre-work described above, Eurostat aims to better assess the national metadata systems. A broader activity will therefore be launched in using the following main assessment criteria:

- Accessibility of the information
- Clarity and completeness of the information
- Types of metadata disseminated
- Volume of metadata disseminated and domain coverage
- Use and enforcement of standard structures and templates
- IT formats available
- Freshness of metadata and update policy
- Production process of metadata (including the quality checks)
- Cross-references between metadata
- Links between data and metadata
- Existing arrangement for metadata transmission and exchange
- Improvement plans

36. Regular reports will be available on these assessment exercises which are also planned to be disseminated. In addition, also the Commission Recommendation on reference metadata mentioned above will contain a regular reporting requirement from the side of national statistical authorities on the national implementation of the ESMS standard.

37. This requirement together with the regular assessment of the national metadata systems should lead to a better quality and streamlining of the national metadata systems in the years to come.

## **VI. Conclusions**

38. The standardisation of metadata at the level of the European Statistical System and at international level progressed considerably in 2007/2008. The SDMX work created the ground for more harmonised and better integrated metadata systems at Eurostat and within the European Statistical System. However, more still needs to be done with regard to the further implementation of metadata standards in countries and also with regard to the further harmonisation of structural metadata within the SDMX initiative.

**ANNEX 1: Euro-SDMX Metadata Structure (ESMS, version 1, February 2008)**

Number	Concepts	Sub-concepts	Definitions
<b>1</b>	<b>Contact</b>		<b>An instance of a role of an individual or an organization (or organisation or organization person) to whom an information item, a material object and/or person can be sent to or from in a specified context.</b>
1.1		Contact organisation	Name of the organisation
1.2		Contact organisation unit	Name of the unit responsible (it can include a unit number)
1.3		Contact name	Name of the domain manager (first name and family name)
1.4		Contact person job title	Area of responsibility of the domain manager (if needed) such as "methodology", "database management" or "dissemination"
1.5		Contact mail address	The contact postal address
1.6		Contact email address	The contact email address (individual or mailbox)
1.7		Contact phone number	The contact phone number
1.8		Contact fax number	The contact fax number
<b>2</b>	<b>Metadata update</b>		<b>Date on which the metadata element was inserted or modified.</b>
2.1		Metadata last update	Date of last update of the content of the metadata. When metadata are edited in a database, this item is automatically produced by the IT system.
2.2		Metadata last posted	Date of the last posting (dissemination) of the metadata. When metadata are published on a web site, this item should be automatically produced by the IT system.
2.3		Metadata last certified	Date of the latest certification provided by the domain manager to confirm that the metadata posted are still up-to-date, even if the content has not been amended.
<b>3</b>	<b>Statistical presentation</b>		<b>Description of the breakdown of data.</b>
3.1		Short description	Main characteristics of the data set described in an easily understandable manner, referring to the data and indicators disseminated. This short description should provide an immediate understanding of the data to the user.
3.2		Classification system used	The main statistical or other classification used for the data and indicators produced. Hyperlinks can be used if needed.
3.3		Sector coverage	The main economic or other sectors covered by the data and indicators produced. Also the respective size classes produced should be added. Hyperlinks can be used if needed.



Number	Concepts	Sub-concepts	Definitions
3.4		Concepts and definitions (Main variables)	The definition of the statistical concept under measure (i.e. the statistical domain) and the definition of the main variables provided are to be listed. Also the types of the main variables provided (raw figures, annual growth rates, index, flow or stock data,...) should be described. Hyperlinks can be used if needed.
3.5		Reference area (geographical coverage)	The geographical area covered by the data disseminated (e.g. EU-27, EEA). Also data coming from other sources should be added (e.g. US and Japan data taken from the OECD).
3.6		Time coverage	Time periods covered: the length of time for which data are disseminated, in terms of periods (e.g. 1985 to 2006 for annual data).
3.7		Base period	The period of time used as a base of an index number, or to which the series refer (e.g. constant price series).
<b>4</b>	<b>Unit of measure</b>		<b>The unit in which the data values are measured.</b>
<b>5</b>	<b>Reference period</b>		<b>The time period to which a variable refers.</b>
<b>6</b>	<b>Institutional Mandate</b>		<b>Requirements assigned to a reporting unit for a given survey instance.</b>
6.1		Legal acts	<b>At European level:</b> A reference should be made to the legal base which created the reporting requirement (e.g. the EU legal acts and the 5-Year-Program related to the European Statistical System). <b>At national level:</b> National legal acts should be mentioned (including implementation of EU directives). Hyperlinks can be used if needed.
6.2		Other reporting requirements	If no legal base exists, the reporting agreement put in place with the respondents should be mentioned (for Eurostat the respondents are Member states, for countries the statistical respondents).
6.3		International agreements for data sharing	<b>At European level only:</b> arrangements or procedures related to data sharing and coordination between various international data producing agencies (e.g. a Eurostat data collection in common with the OECD, the UN, etc.).
<b>7</b>	<b>Confidentiality</b>		<b>A property of data, usually resulting from legislative measures, which prevents it from unauthorised disclosure.</b>
7.1		Confidentiality policy	The European or national legislations related to statistical confidentiality should be mentioned. Hyperlinks can be used if needed.
7.2		Confidentiality - data treatment	The rules applied for treating the data set with regard to statistical confidentiality should be mentioned (e.g. aggregation rules when disseminating data, provision of unit records, etc.). Hyperlinks can be used if needed.
<b>8</b>	<b>Release policy</b>		<b>Policy for disseminating statistical data towards users.</b>
8.1		Release calendar policy	The policy regarding the release of statistics according to a preannounced schedule should be described. This includes mentioning the existence of an advance release calendar publicly disseminated so as to provide prior notice of the precise dates on which a national agency or international organisation undertakes to release the data.
8.2		Release calendar access	Access detail to the release calendar should be given. A hyperlink should be provided if available.

Number	Concepts	Sub-concepts	Definitions
8.3		User access	Describes the policy for release of the data to users, the scope of dissemination (eg, to the public, to selected users) how users are informed that the data are being released, and whether the policy provides for the dissemination of statistical data to all users at the same time, and whether some ministerial commentary is provided on the occasion of statistical release.
<b>9</b>	<b>Frequency of dissemination</b>		<b>The rate to which dissemination happens or is repeated.</b>
<b>10</b>	<b>Dissemination formats</b>		<b>Media by which statistical data and/or metadata are disseminated to users.</b>
10.1		News release	Regular or ad-hoc press releases linked to the data. Please use also hyperlinks if needed.
10.2		Publications	Publications linked to the data. Please use also hyperlinks if needed.
10.3		On-line database	Link to the on-line database, with a summary identification of domain names as released on the website. Please use also hyperlinks if needed.
10.4		Micro-data access	It should be stated if micro-data are also disseminated, e.g. to researchers. Access conditions should be described in short. Please use also hyperlinks if needed.
10.5		Other dissemination	Reference should be made to the most important other data dissemination done (e.g. to other publications, policy papers, etc.) Please use also hyperlinks if needed.
<b>11</b>	<b>Accessibility of documentation</b>		<b>Accessibility of information defining or describing various aspects of the data.</b>
11.1		Documentation on methodology	References to detailed European and national methodological documentation, such as methodological papers, summary notes or papers available on request from the producer. The advance notification of major changes expected in the methodology for disseminated data should also be mentioned. Hyperlinks can be used if needed.
11.2		Documentation on quality	Availability of quality reports and studies, both at national and European level (for Eurostat, the existence of national quality reports should be mentioned). Hyperlinks should be used if available.
<b>12</b>	<b>Quality Management</b>		<b>Processes in place to monitor the quality of the statistical programs and to deal with data quality.</b>
12.1		Quality guidelines	Guidelines focusing on quality in general and dealing with quality of statistical programmes, including measures for ensuring the efficient use of resources.
12.2		Quality - overall assessment	Summary overview of quality assessment, based on the six standard quality dimensions of relevance, accuracy and reliability, timeliness and punctuality, accessibility and clarity, comparability, and coherence. Hyperlinks can be used if needed.
<b>13</b>	<b>Relevance</b>		<b>The degree to which statistical information meets the real needs of the clients.</b>
13.1		User needs	The main users and user needs should be stated (e.g. policy departments with the needs for policy indicators), national users, etc.
13.2		User satisfaction	If user satisfaction surveys have been conducted, the domain manager should mention them. Otherwise, the domain manager might give any other indication on the user satisfaction which might be available. Hyperlinks can be used if needed.

Number	Concepts	Sub-concepts	Definitions
13.3		Completeness	<b>At European level:</b> Assessment of the data provided by countries against legal or other data requirements. No in depth analysis is expected, but a general indication for the data being made available. <b>At national level:</b> Assessment of the data provided by respondents against legal or other data requirements.
14	<b>Accuracy and reliability</b>		<b>Accuracy:</b> closeness of computations or estimates to the exact or true values that the statistics were intended to measure. <b>Reliability:</b> closeness of the initial estimated value to the subsequent estimated value.
14.1		Overall accuracy	Overall description of the accuracy related to the data set.
14.2		Sampling errors	If sample surveys are used, the domain manager should provide some indication on the sample errors (in general based on the coefficient of variation). Hyperlinks can be used if needed.
14.3		Non-sampling errors	Some indications on the non-sampling errors should also be provided, e.g. on coverage errors, measurement and processing errors, non response errors or model assumption errors. Hyperlinks can be used if needed.
15	<b>Timeliness and punctuality</b>		
15.1		Timeliness	Speed of dissemination of the data, i.e. the lapse of the time between the end of a reference period and dissemination of the data.
15.2		Punctuality	Time lag existing between the actual delivery date of data and the target date when it should have been delivered.
16	<b>Comparability</b>		<b>The extent to which differences between statistics from different geographical areas, non-geographical domains, or over time can be attributed to differences between the true values of the statistics.</b>
16.1		Comparability between domains	Comparability between different statistics which target similar characteristics in different statistical domains. The difference in methodologies used for the estimation of the statistics should be reported.
16.2		Comparability - geographical	<b>At European level only:</b> The domain manager should state the extent to which statistics are comparable between geographical areas.
16.3		Comparability over time	The domain manager should state the comparability of the data produced over time, including eventual breaks in series.
17	<b>Coherence</b>		<b>The extent to which data can be reliably combined in different ways and for various uses.</b>
17.1		Coherence - cross domain	Extent to which statistics are reconcilable with those obtained through other data sources, statistical domains or systems.
17.2		Coherence - internal	Extent to which statistics are consistent within a given data set.
18	<b>Cost and burden</b>		<b>Summary of costs and burden measurement linked to the respective statistical domain.</b>
19	<b>Data revision</b>		<b>Policy aimed at ensuring the transparency of disseminated data, whereby preliminary data are compiled that are later revised when more and better source data become available.</b>
19.1		Revision policy	The revision policy adopted for the data disseminated should be described as well as the status of the data when disseminated.

Number	Concepts	Sub-concepts	Definitions
19.2		Revision practice	The data revision practice (related e.g. to the reason, number and type of revisions) and the availability of revision studies and analyses should be described. Hyperlinks can be used if needed.
<b>20</b>	<b>Statistical processing</b>		<b>Data compilation and other statistical procedures to deal with intermediate data and statistical outputs.</b>
20.1		Type of source data	Basic characteristics of the source data, e.g. if the data is based on a survey or on administrative data sources, etc. If sample surveys are used, some sample characteristics should be mentioned (e.g. total sample size).
20.2		Frequency of data collection	Frequency with which the source data are collected.
20.3		Data collection methods	A short description of the data collection method used for the source data, e.g. postal survey, CAPI, on-line survey, etc.
20.4		Statistical units	The statistical units used when implementing the survey should be described (e.g. the enterprise, the kind-of-activity unit (KAU), private households,...). The statistical unit is the basic unit of statistical observation within a statistical survey.
20.5		Data validation	Processes for assessing source data and how the results of the assessment are monitored and made available. It also describes how intermediate results are validated against other information where applicable and how statistical discrepancies are assessed and investigated.
20.6		Data compilation	Short description of the data compilation process highlighting important issues, e.g. on data editing, imputation, weighting, etc.
20.7		Adjustments	Statistical procedures used such as seasonal adjustment methods, time series decomposition or other particular estimation methods not yet described.
<b>21</b>	<b>Comment</b>		<b>Supplementary descriptive text, containing a special warning attached to a time series, an agency, data set or observation.</b>