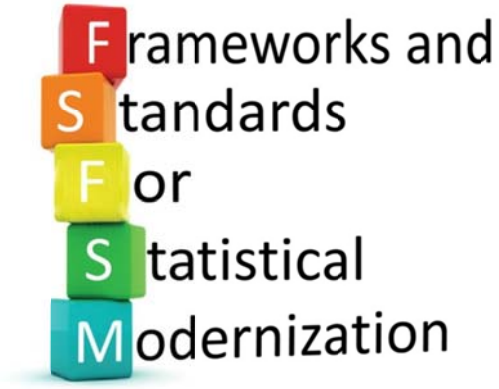


Mapping the Generic Statistical Business Process Model (GSBPM) to the Fundamental Principles of Official Statistics

(Version 1.0, October 2013)

About this document

This document is the output of Work Package 8 of the Frameworks and Standards for Statistical Modernisation project. This project is one of two key projects chosen and overseen by the High-Level Group for the Modernisation of Statistical Production and Services, to be completed during 2013. For more information, please see:
www1.unece.org/stat/platform/display/hlgbas

I. Introduction

1. The requirement for a mapping between the Generic Statistical Business Process Model (GSBPM)[1] and the Fundamental Principles of Official Statistics[2] was identified during a high-level seminar for leaders of statistical organisations in SPECA (Special Programme for the Economies of Central Asia) countries, in Issyk-Kul, Kyrgyzstan, in August 2012[3]. This requirement was included in the specification of the Frameworks and Standards for Statistical Modernisation project as that project focuses on the integration and mapping of key standards needed to modernise the way official statistics are produced.

2. The Frameworks and Standards project[4] was approved as a key priority for 2013 by the High-Level Group for the Modernisation of Statistical Production and Services (HLG)[5], and is overseen by that group.

3. This paper provides a mapping from the GSBPM to the Fundamental Principles, and is intended to facilitate the understanding of both standards. The starting points for these mappings are the nine phases of the GSBPM and the ten Fundamental Principles.

II. The GSBPM

4. The GSBPM was developed by the UNECE and the Conference of European Statisticians Steering Group on Statistical Metadata (better known as "METIS"). Since its release in April 2009, version 4.0 of this model has already been widely adopted by national and international statistical organisations around the world. It is intended to facilitate the convergence of statistical production processes, both within and between organisations.

5. The original aim of the GSBPM was to provide a basis for statistical organisations to agree on standard terminology to aid their discussions on developing statistical metadata systems. It was conceived as a flexible tool to describe and define the set of processes needed to produce official statistics. The GSBPM is, however, increasingly being used in other contexts such as harmonising statistical computing infrastructures, facilitating the sharing of software components, and providing a framework for process quality assessment and improvement.

6. The GSBPM is intended to apply to all activities undertaken by producers of official statistics, at both the national and international levels, which result in data outputs. It is designed to be independent of the data source, so it can be used for the description and quality assessment of processes based on surveys, censuses, administrative records, and other non-statistical or mixed sources.

7. Whilst typical statistical production processes include the collection and treatment of raw data to produce statistical outputs, the GSBPM is also intended to apply to cases where existing data are revised or time-series are re-calculated, either as a result of more or better

[1] www.unece.org/stats/gsbpm
[2] www.unece.org/stats/archive/docs.fp.e.html
[3] www.unece.org/stats/documents/2012.10.speca.html
[4] www1.unece.org/stat/platform/download/attachments/58492100/Standards+project+outline.docx
[5] www1.unece.org/stat/platform/display/hlgbas

source data, or a change in methodology. In these cases, the input data are the previously published statistics, which are then processed and analyzed to produce revised outputs.

8. The GSBPM is not intended to be a rigid framework in which all steps must be followed in a strict order, but rather a model that identifies the steps in the statistical production process, and the inter-dependencies between them. It aims to be sufficiently generic to be widely applicable, and to encourage a standard view of statistical production, without becoming either too restrictive or too abstract and theoretical. Different statistical production processes will follow different paths through the model, using different sub-processes, in different orders.

9. The GSBPM comprises four levels:

(a) Level 0, the statistical business process;
(b) Level 1, the nine phases of the statistical business process;
(c) Level 2, the sub-processes within each phase;
(d) Level 3, a description of those sub-processes.

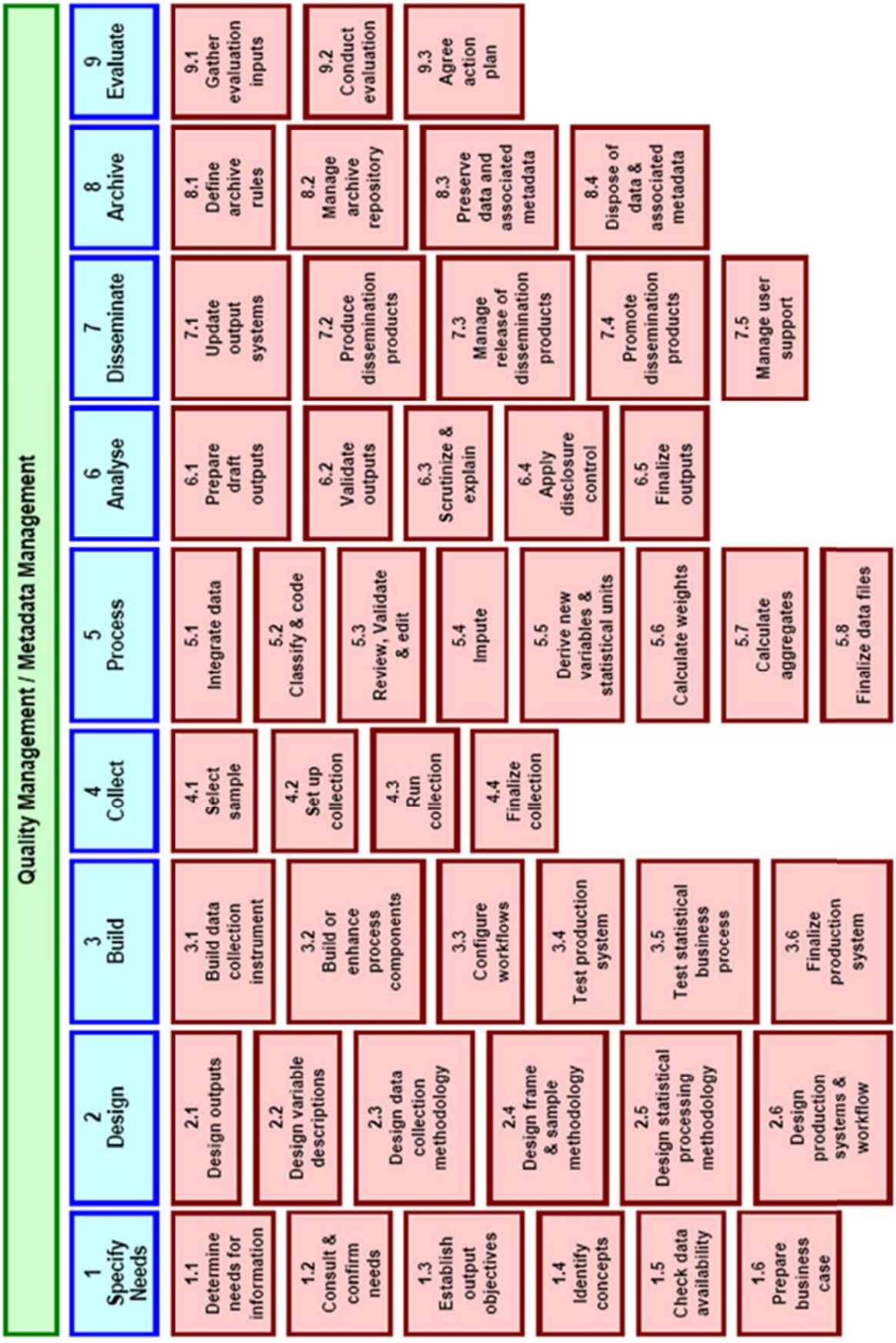
10. Levels 1 and 2 are illustrated in Figure 1. Information about level 3 can be found in the GSBPM documentation. Further levels of detail may be appropriate for certain statistical business processes or in certain organisations, but these are unlikely to be sufficiently generic to be included in this model.

11. The GSBPM also recognises several over-arching processes that apply throughout the nine phases, and across statistical business processes. These can be grouped into two categories, those that have a statistical component, and those that are more general, and could apply to any sort of organisation. Examples of over-arching statistical processes include:

- Quality management – including quality assessment and control mechanisms
- Metadata management – ensuring that metadata retain their links with data throughout the business process
- Statistical framework management – developing standards, methodologies, concepts and classifications that apply across multiple processes.

A more complete list is given in the GSBPM documentation.

Figure 1 – Levels 1 and 2 of the GSBPM



III. The Fundamental Principles

12. In 1992, the United Nations Economic Commission for Europe (UNECE) adopted the Fundamental Principles of Official Statistics in the UNECE region. In 1994, the United Nations Statistical Commission adopted these principles at the global level. In 2011, the Statistical Commission discussed the Fundamental Principles of Official Statistics and acknowledged that the Principles were still as relevant as they had been in the past and that no revision of the 10 Principles themselves was necessary. In July 2013, the Fundamental Principles were endorsed at the global political level by the Economic and Social Council of the United Nations (ECOSOC).

13. The ten Fundamental Principles are:

1) ***Relevance, impartiality and equal access*** **-** Official statistics provide an indispensable element in the information system of a democratic society, serving the government, the economy and the public with data about the economic, demographic, social and environmental situation. To this end, official statistics that meet the test of practical utility are to be compiled and made available on an impartial basis by official statistical agencies to honour citizens' entitlement to public information.
2) ***Professional standards and ethics*** **-** To retain trust in official statistics, the statistical agencies need to decide according to strictly professional considerations, including scientific principles and professional ethics, on the methods and procedures for the collection, processing, storage and presentation of statistical data.
3) ***Accountability and transparency*** **-** To facilitate a correct interpretation of the data, the statistical agencies are to present information according to scientific standards on the sources, methods and procedures of the statistics.
4) ***Prevention of misuse*** **-** The statistical agencies are entitled to comment on erroneous interpretation and misuse of statistics.
5) ***Sources of official statistics*** **-** Data for statistical purposes may be drawn from all types of sources, be they statistical surveys or administrative records. Statistical agencies are to choose the source with regard to quality, timeliness, costs and the burden on respondents.
6) ***Confidentiality*** **-** Individual data collected by statistical agencies for statistical compilation, whether they refer to natural or legal persons, are to be strictly confidential and used exclusively for statistical purposes.
7) ***Legislation*** **-** The laws, regulations and measures under which the statistical systems operate are to be made public.
8) ***National coordination*** **-** Coordination among statistical agencies within countries is essential to achieve consistency and efficiency in the statistical system.
9) ***Use of international standards*** **-** The use by statistical agencies in each country of international concepts, classifications and methods promotes the consistency and efficiency of statistical systems at all official levels.
10) ***International cooperation*** **-** Bilateral and multilateral cooperation in statistics contributes to the improvement of systems of official statistics in all countries.

IV. The Mapping

13. Figure 2 shows how the nine phases of the GSBPM map to the ten Fundamental Principles. It also shows that there are different degrees of mapping, by identifying stronger and weaker linkages.

14. Phase 1 of the GSBPM (Specify Needs) has weak mappings to:

- Fundamental Principle 1 (Relevance, impartiality and equal access), reflecting the requirement for official statistics to "meet the test of practical utility", i.e. they should meet user needs. To do this, it is necessary to specify those needs before designing the statistical products and processes.
- Fundamental Principle 8 (National coordination), reflecting the need for national coordination to determine which organisation will produce the statistics, and to check for the availability of existing data sources within the national statistical system.

15. Phase 2 of the GSBPM (Design) has strong mappings to:

- Fundamental Principle 2 (Professional standards and ethics), reflecting the need to design statistical products and processes "according to strictly professional considerations, including scientific principles and professional ethics".
- Fundamental Principle 8 (National coordination), reflecting the need to design statistical products and processes in a way that reinforces consistency and efficiency within the national statistical system.
- Fundamental Principle 9 (Use of international standards), reflecting the need to take account of international standards as far as possible when designing statistical products and processes.

It also has weaker mappings to:

- Fundamental Principle 1 (Relevance, impartiality and equal access), reflecting the requirement to design statistical products that are impartial and useful to society.
- Fundamental Principle 5 (Sources of official statistics), reflecting the requirement to choose data sources "with regard to quality, timeliness, costs and the burden on respondents".
- Fundamental Principle 10 (International cooperation), reflecting the increasing interest in designing multi-national solutions and tools.

16. Phase 3 of the GSBPM (Build) does not map directly to any of the Fundamental Principles, however it relies on the mappings identified for Phase 2 (Design), as it can be considered as the practical implementation of the design phase.

17. Phase 4 of the GSBPM (Collect) has strong mappings to:

- Fundamental Principle 2 (Professional standards and ethics), reflecting the requirements to apply "strictly professional considerations, including scientific principles and professional ethics on the methods and procedures for the collection ... of statistical data".

- Fundamental Principle 5 (Sources of official statistics), reflecting the requirement to collect data from the most appropriate sources, taking into account “quality, timeliness, costs and the burden on respondents”.

18. Phase 5 of the GSBPM (Process) has strong mappings to:

- Fundamental Principle 1 (Relevance, impartiality and equal access), reflecting the requirement to compile statistics on an impartial basis.
- Fundamental Principle 2 (Professional standards and ethics), reflecting the requirements to apply “strictly professional considerations, including scientific principles and professional ethics on the methods and procedures for the ... processing ... of statistical data”.

19. Phase 6 of the GSBPM (Analyse) has a strong mapping to:

- Fundamental Principle 6 (Confidentiality). The requirement to respect statistical confidentiality is implemented in GSBPM sub-process 6.4 (Apply disclosure control).

20. Phase 7 of the GSBPM (Disseminate) has strong mappings to:

- Fundamental Principle 1 (Relevance, impartiality and equal access), reflecting the requirement to make statistics “available on an impartial basis ... to honour citizens' entitlement to public information”.
- Fundamental Principle 2 (Professional standards and ethics), reflecting the requirements to apply “strictly professional considerations, including scientific principles and professional ethics on the methods and procedures for the ... presentation of statistical data”.
- Fundamental Principle 3 (Accountability and transparency), reflecting the requirement to facilitate correct interpretation of data by presenting “information according to scientific standards on the sources, methods and procedures of the statistics”.
- Fundamental Principle 4 (Prevention of misuse), reflecting the need to support users by commenting on any “erroneous interpretation and misuse of statistics”.
- Fundamental Principle 7 (Legislation), reflecting the requirement to make public “the laws, regulations and measures under which the statistical systems operate”.

21. Phase 8 of the GSBPM (Archive) has a weak mapping to:

- Fundamental Principle 2 (Professional standards and ethics), reflecting the requirements to apply “strictly professional considerations, including scientific principles and professional ethics on the methods and procedures for the ... storage ... of statistical data”.
- Fundamental Principle 6 (Confidentiality), reflecting the need for archive management to include the protection of confidential data.

22. Phase 9 of the GSBPM (Evaluate) has a strong mapping to:

- Fundamental Principle 1 (Relevance, impartiality and equal access), reflecting the requirement to ensure that “official statistics meet the test of practical utility”.

Figure 2 – Mapping GSBPM to the Fundamental Principles

Fundamental Principles	1 Specify Needs	2 Design	3 Build	4 Collect	5 Process	6 Analyse	7 Disseminate	8 Archive	9 Evaluate
1	x	x			X		X		X
2		X		X	X		X	x	
3							X		
4							X		
5		x		X					
6						X		x	
7							X		
8	x	X							
9		X							
10		x							

GSBPM Phases

Key: **X** = Strong mapping
x = Weaker mapping

V. Summary

23. The mapping exercise outlined in this paper shows that the GSBPM strongly aligns with and supports the practical implementation of the Fundamental Principles of Official Statistics.

24. The only one of the Fundamental Principles which does not currently have a strong mapping to any of the phases of the GSBPM is number 10 (International cooperation). This principle can be seen as part of the overall framework within which official statistics are produced, rather like the idea of over-arching processes in the GSBPM. It is likely that in the future some types of official statistics could be produced through bilateral or multilateral cooperation between national statistical organisations. Shared design activities can be seen as a first step, but eventually this Fundamental Principle could map to some extent to all phases of the GSBPM.