# Assessing Your Modernisation Maturity

Under the High-level Group project on Implementing ModernStats Standards, a Modernisation Maturity Model (MMM) has been developed. The maturity self-assessment would ideally be performed by a cross-cutting group involving members of the Business, Information, Methods, Applications and Technology functions within the statistical organisation.

There are multiple aspects of Maturity in the context of Modernisation, and as such the model that has been developed has a number of distinct ***dimensions***. Within each dimension, different organisations may have different ***levels*** of maturity.

These ***dimensions*** and ***levels*** are described in the tables below in general terms. However, to be more specific, we have formulated a set of self-assessment criteria that is specific to each ***dimension*** x ***level*** combination, as well as being specific to each of the following *HLG-MOS standards*:

* [GAMSO](http://www1.unece.org/stat/platform/display/GAMSO/Generic+Activity+Model+for+Statistical+Organizations)
* [GSBPM](http://www1.unece.org/stat/platform/display/GSBPM/Generic+Statistical+Business+Process+Model)
* [GSIM](http://www1.unece.org/stat/platform/display/gsim/Generic+Statistical+Information+Model)
* [CSPA](http://www1.unece.org/stat/platform/display/CSPA/Common+Statistical+Production+Architecture)

Those undertaking a self-assessment are encouraged to assess their maturity in this way at the ***current time***, as well as the ***target level*** of maturity that they are seeking to achieve in 5 years’ time. Additionally, they are invited to list the first major 1-3 steps they expect their organisation would take to move its maturity level toward the target for each dimension. (These could be steps the organisation would undertake on its own or these might be steps based on enablers from HLG.)

Organisation:

For each **Tester** please fill out

Name:

Email address:

Main area(s) of expertise (Business, Methods, Information, Applications and/or Technology):

HLG-MOS standard(s) **tested** (GAMSO, GSBPM, GSIM and/or CSPA)

Name:

Email address:

Main area(s) of expertise (Business, Methods, Information, Applications and/or Technology):

HLG-MOS standard(s**) tested** (GAMSO, GSBPM, GSIM and/or CSPA)

Name:

Email address:

Main area(s) of expertise (Business, Methods, Information, Applications and/or Technology):

HLG-MOS standard(s) **tested** (GAMSO, GSBPM, GSIM and/or CSPA)

## Description of Maturity Levels

| **Number** | **Level Name** | **Level Description** |
| --- | --- | --- |
| 1 | Initial implementation | A few individuals are becoming interested in the potential value of the standard.  The organisation as a whole is unaware of the standard. |
| 2 | Pre-implementation | Use of the standard is basic and limited to a few individuals.  Parts of the organisation are becoming interested in the potential value of the standard. |
| 3 | Early implementation | Use of the standard is spreading, but it is used in an inconsistent manner by individuals and single business units.  A corporate-wide programme/strategy for use of the standard is in being prepared. |
| 4 | Corporate implementation | A corporate-wide programme/strategy for use of the standard exists.  There is a widespread awareness of the standard and it is used in a consistent way across the organisation. |
| 5 | Mature implementation | The standard is perceived as an important part of business operations/management, delivering value across the organisation.  The standard is well understood, integrated into business processes & practices and used in a consistent manner across the organisation. |

**Questions for Testers on the Level names and descriptions:**

**Are the descriptions easy to understand?**

**Are the Levels sufficiently distinct?**

## Description of Dimensions

**Dimensions** (Architecture is implicit)

|  |  |  |
| --- | --- | --- |
| **Number** | **Name** | **Description** |
| 1 | Business | This dimension focuses on the business activity domain i.e. the organisation's core business practices and policies. |
| 2 | Methods | This dimension focuses on the management of methods i.e. how methods are designed, structured, implemented and executed.  It includes statistical methodology, quality management, IT methods, process methods e.g. data collection methods and any other methods needed to support the business. |
| 3 | Information | This dimension focuses on how information is structured and integrated, how information is modelled, the method of access to data, abstraction of the data access from the functional aspects, data characteristics, data transformation capabilities, service and process definitions, handling of identifiers and the information model. |
| 4 | Applications | This dimension focuses on the structure and interaction of applications[[1]](#footnote-1) to provide business functionality using the information/data assets needed to deliver this functionality. |
| 5 | Technology | This dimension focuses on the logical software and hardware capabilities that are required to support the deployment of business, information, and application services. This includes IT infrastructure, middleware, networks, etc. |

**Questions for Testers on the Dimension names and descriptions:**

**Are the descriptions easy to understand?**

**Are the Dimensions sufficiently distinct?**

## GAMSO Self-Assessment Criteria

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Levels**  **Dimensions** | **Initial**  **implementation** | **Pre-**  **implementation** | **Early**  **implementation** | **Corporate**  **implementation** | **Mature**  **implementation** |
| Business | A few individuals are becoming interested in the potential business value of using GAMSO.  The organisation as a whole is unaware of GAMSO | Use of GAMSO is basic and limited to a few individuals.  Parts of the organisation are becoming interested in the potential business value of GAMSO | Use of GAMSO is spreading, but practise varies between individuals and across business units.  Some individuals and business units are referring to the overarching phases in GSBPM. | A corporate-wide programme/strategy for use of GAMSO is in place.  There is a widespread awareness of GAMSO and a consistent approach to its use across the organisation | GAMSO is perceived as an important part of business operations/management, delivering business value.  GAMSO is well understood, integrated into business processes and practices and used in a consistent manner across the organisation. |
| Methods | Methods are developed on an as needed basis for a particular activity area / product/ process.  A few individuals are becoming interested in the potential value of planning, developing, monitoring and supporting methods for more than one activity area/ product/ process  The organisation as a whole is unaware of this potential.  There is little corporate support for managing methods | Individuals are developing methods to be used in several activity areas/ products/ processes  Some business units are becoming interested in the potential value of managing methods as corporate capability elements.  There is some corporate support for managing methods. | Methods (e.g. statistical methodology and quality) are being developed and used in more than one activity area/product/process, but consistent implementation is lacking  There is corporate support for managing methods | There is a corporate strategy for managing Methods (e.g. statistical methodology and quality, IT methods, process methods e.g. data collection methods and any other methods) as corporate capability elements | Management of methods  is an integral part of the corporate policy, and is performed efficiently and effectively, regularly assessed and improved |
| Information | Information is created on an "as needed" basis for a particular activity area / product/ process  A few individuals are becoming interested in the potential value of planning, developing. monitoring and supporting information for more than one activity area, product or process.  The organisation as a whole is unaware of this potential | Individuals are developing information resources to be shared and used in several activity areas/products /phases.  Some business units are becoming interested in the potential value of managing product/process information as corporate capability elements.  There is some corporate support for managing product/process information. | Information resources are being developed and used   in more than one product/ process/ activity, but practice varies across the   organisation.  There is corporate support for standardised management of information across activity areas/ products /phases. | There is a corporate strategy for managing information as corporate capability elements.  GSIM is used to describe and manage information objects in statistical processes. | Management of information is performed efficiently and effectively, regularly assessed and improved. |
| **Levels Dimensions** | **Initial**  **implementation** | **Pre-**  **implementation** | **Early**  **implementation** | **Corporate**  **implementation** | **Mature**  **implementation** |
| Applications | A few individuals are becoming interested in the potential value of planning, developing. monitoring and supporting applications for more than one activity area, product or process.  There is little corporate support for managing applications | Some business units are becoming interested in the  potential value of managing applications as corporate capability elements.  There is some corporate support for managing applications | Common and shared applications are being developed and used in more than one product/ process/ activity, but in an inconsistent manner across the organisation.  There is corporate support for the management of applications. | There is a corporate strategy for  managing applications as corporate capability elements | Management of applications is performed  efficiently and effectively, regularly assessed and improved according to the corporate strategy |
| Technology | A few individuals are becoming interested in the potential value of managing technology as a corporate capability element.  There is little corporate support for managing technology | Some business units are becoming interested in the potential value of managing technology as a corporate capability element.  There is some corporate support for managing technology | Technology is being used in more than one product/ process/ activity, but practise varies across the organisation.  There is corporate support for the management of technology | There is a corporate strategy for managing technology as a corporate capability element. | Technology, as a corporate capability element, is seen as an important part of business operations/ management, delivering value across the organisation.  Technology, as a corporate capability element, is well integrated into business processes & practices |

## GAMSO Maturity Assessment

The current version of GAMSO is version 1.0.

Version Assessed: **1.0**

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| --- | --- | --- | --- |
| **Dimension** | **Current Maturity** | **Target Maturity** | **Key Steps/**  **Requirements** |
| Business |  |  |  |
| Methods |  |  |  |
| Information |  |  |  |
| Applications |  |  |  |
| Technology |  |  |  |

**For Testers**

**Were there any self-assessment criteria that were particularly difficult to understand?**

**If yes, please provide the Dimension and Level for those self-assessment criteria:**

**Were the Levels sufficiently distinct per Dimension?**

**If not, please provide the Dimension(s) and Level(s) where you experienced difficulties**

## GSBPM Self-Assessment Criteria

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| --- | --- | --- | --- | --- | --- |
| **Levels**  **Dimensions** | **Initial**  **implementation** | **Pre-**  **implementation** | **Early**  **implementation** | **Corporate implementation** | **Mature**  **implementation** |
| Business | No standard business process descriptions/ definitions are in use across the organisation’s statistical domains.  Different business processes are followed by different individuals undertaking the same tasks.  Projects/statistical programs exist in isolation, There is little or no business process coordination.  A few individuals are becoming interested in the potential business value of the GSBPM, but the organisation as a whole is unaware of the GSBPM. | Use of the GSBPM is basic and limited to a few individuals.  Some business units are becoming interested in the potential business value of GSBPM and investigate how adopting the GSBPM as a reference standard could assist standardisation activities.  Dissemination/ communication activities are carried out in some statistical domains to demonstrate the benefits of using the model | Use of GSBPM is spreading, but practice varies between  individuals and between business units  Some business units are documenting/ defining existing statistical production processes using the GSBPM phases/sub-processes.  GSBPM phases/ sub-processes are being used for generic project/ statistical program scoping and planning. | A corporate-wide programme/strategy for use of GSBPM for managing statistical production processes is in place.  Management uses GSBPM as a framework for all planning of statistical production  Organisation standardises and describes procedures for all GSBPM phases and sub-processes in a consistent manner | Management uses GSBPM systematically and regularly for managing and improving business capabilities and services.  Organisation has widespread expertise and familiarity with the use and application of the GSBPM. It is the reference framework for all statistical production.  GSBPM based responsibilities are shared between job positions and are described in job descriptions. |
| Methods | No common approaches regarding the development and use of methods  Methods are identified and defined with no reference to GSBPM  A few individuals are becoming interested in the potential value of mapping/documenting methods per GSPBM phase | A few individuals are  mapping/ documenting existing methods per GSPBM phase/sub-process  Some business units are becoming interested in the potential value of mapping/ documenting existing methods per GSPBM phase in order to improve coherence and consistency of the statistical production processes.  New methods are developed with reference to GSBPM phases. | Individuals and business units are  mapping/ documenting new and existing methods per GSPBM phase/sub-process, but the practise varies,  A corporate wide strategy to use GSBPM to map/document methods per phase/sub-process is not in place | There is a widespread awareness of the use of GSBPM to map/ document new and existing methods per phase/sub-process and a consistent approach is adopted across the organisation to carry this out. | Methods are standardised and optimised within the GSBPM and extensively re-used  This standardization facilitates inter-institutional collaboration efforts.  The use of GSBPM to map/document methods per phase/process is an important part of methods management and delivers value by identifying duplication and potential for reuse  Mapping/documenting methods to GSBPM phases/sub-processes is well understood and applied in a consistent manner |
| **Levels Dimensions** | **Initial**  **implementation** | **Pre-**  **implementation** | **Early**  **implementation** | **Corporate**  **implementation** | **Mature**  **implementation** |
| Information | No standardised way of defining information objects (data and metadata) with reference to their use in GSBPM.  No integration of information | Identification and classification of  information objects by GSBPM phase carried out for one or two statistical domains in order to improve consistency in information objects being used/referred to in the different sub-processes | New projects adopt standard methods of classifying information object use and terminology by GSBPM phase and sub-process  Existing applications have a varied practise regarding mapping of information objects by GSBPM phase and sub-process | Information objects used within the organisation are mapped to the GSBPM sub-processes, and the changes to information objects through the sub-processes are well defined | Information object usage and nomenclature is harmonised/standardised  across the organisation, with GSIM in routine use as the basis for describing and defining information objects.  The reuse of information objects is maximised wherever possible |
| Applications | Applications are developed without reference to GSBPM  Applications are developed stand-alone, at silo level, without reference to common statistical processes across the organisation.  Every statistical program has its own production system, with little coordination between the programs  Common problems are solved in different ways. | Examination of existing applications where they  map to GSBPM phases, in order to facilitate a higher degree of standardisation  Applications are mapped within one or more GSBPM phases | Specifications for new application scope start to be defined by GSBPM phases or processes  Adoption of plan for the implementation of GSBPM, setting the priorities for the improvement and development of activities  Applications are mapped to GSBPM phases and sub-processes. | Using GSBPM to define statistical function and system development mapping for all existing applications, and as a basis for all new application development.  Monitoring and coordination of the implementation plan of GSBPM  Use of a Service Catalogue to manage service components | All the applications are mapped at component level to GSBPM sub-processes, or lower;  Service Catalogue is used across the piece to monitor/maintain all the components of the organisation's statistical production systems. |

## GSBPM Maturity Assessment

The current version of GSBPM is version 5.0.

Version Assessed: **5.0**

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| --- | --- | --- | --- |
| **Dimension** | **Current Maturity** | **Target Maturity** | **Key Steps/**  **Requirements** |
| Business |  |  |  |
| Methods |  |  |  |
| Information |  |  |  |
| Applications |  |  |  |

**For Testers**

**Were there any self-assessment criteria that were particularly difficult to understand?**

**If yes, please provide the Dimension and Level for those self-assessment criteria:**

**Were the Levels sufficiently distinct per Dimension?**

**If not, please provide the Dimension(s) and Level(s) where you experienced difficulties**

**Do you think we should have had a Technology Dimension for GSBPM?**

## GSIM Self-Assessment Criteria

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Levels**  **Dimensions** | **Initial**  **implementation** | **Pre-**  **implementation** | **Early**  **implementation** | **Corporate implementation** | **Mature**  **implementation** |
| Business | Business drivers for the implementation of GSIM are being identified and discussed by experts and subject-matter people.  Management are largely unaware of or uninterested in GSIM. | Organisation is becoming aware of GSIM and recognizing its potential usefulness. The organisation might be involved in international development projects using GSIM as a conceptual model. Still limited definition and documentation of the organisation’s business drivers and processes in which GSIM will be involved. Strong need for guidance from other organisations implementing GSIM. | GSIM is used to describe some information objects mainly in the description of business processes in individual development projects.  Some serious efforts are being made to develop skills to learn GSIM, including its role to help to describe GSBPM sub-processes by defining the information objects that flow between them, that are created in them, and that are used by them to produce official statistics.  Corporate-wide strategy for the use of GSIM is being prepared, | GSIM is used by the organisation to describe information objects in its own business processes and to compare them inside the organisation as well as with other organisations. GSIM has become a common every-day language for requirements analysts, architects and system developers.  Corporate-wide strategy to use GSIM  exists. | GSIM has been fully adopted by the organisation to describe information used in its business processes and their improvements. |
| Methods | A few individuals are becoming interested in the potential value of using GSIM to support the design, specification and implementation of harmonized methods. | A few individuals are using GSIM to support the design, specification and implementation of harmonized methods.  Some business units are becoming interested in the potential value of using GSIM to support the design, specification and implementation of harmonized methods. | Individuals and business units are using GSIM to support the design, specification and implementation of harmonized methods, but practise varies. | There is a widespread awareness of the use of GSIM to support the design, specification and implementation of harmonized methods and this is used in a consistent way across the organisation.  A corporate wide strategy to use GSIM to support the design, specification and implementation of harmonized methods exists | The use of GSIM to support the design, specification and implementation of harmonized methods is an important part of methods management and delivers value |
| **Levels Dimensions** | **Initial**  **implementation** | **Pre-**  **implementation** | **Early**  **implementation** | **Corporate**  **implementation** | **Mature**  **implementation** |
| Information | Some information experts are aware of GSIM and interested in its use related to organizing data and metadata. | Several information experts know the model. GSIM has been tried out occasionally in specific areas which are often related to international cooperation efforts. | GSIM is recognized as a conceptual model for sharing ideas and determining common concepts inside organisation. Some case-specific models are introduced. The GSIM information objects might be used a bit differently in different parts of the organisation. | Organisation has officially adopted GSIM to describe its information assets.  The information architecture of the organisation is described in terms of GSIM information objects. There exist common repositories of instances of GSIM information objects that can be reused in the whole organisation. | GSIM-based information architecture is a reality and implemented throughout the organisation consistently. Optimized GSIM-based information management is a reality.  There exists a catalogue of GSIM information objects, e.g. unit type, that has been agreed on at the international level and the organisation is using this catalogue. |
| Applications | Some experts are aware of GSIM and also interested in using it. | Some physical datamodels or CSPA services are created and tested using GSIM as the conceptual model in planning phase. | GSIM-based physical datamodels are implemented in separate applications or some CSPA services are described in terms of GSIM information objects. | GSIM is used to describe at the conceptual level all applications related to the statistical processes that are developed by the organisation.  The organisation has an internal CSPA Service Catalogue including coherent Statistical Service Descriptions describing input and output objects of the services as GSIM information objects. | There is a whole platform of CSPA-compliant applications for all domains described in terms of GSIM information objects. Organisation has adopted GSIM as part of the set of standards to describe its applications. |

## GSIM Maturity Assessment

The current version of GSIM is version 1.1.

Version Assessed: **1.1**

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| --- | --- | --- | --- |
| **Dimension** | **Current Maturity** | **Target Maturity** | **Key Steps/**  **Requirements** |
| Business |  |  |  |
| Methods |  |  |  |
| Information |  |  |  |
| Applications |  |  |  |

**For Testers**

**Were there any self-assessment criteria that were particularly difficult to understand?**

**If yes, please provide the Dimension and Level for those self-assessment criteria:**

**Were the Levels sufficiently distinct per Dimension?**

**If not, please provide the Dimension(s) and Level(s) where you experienced difficulties**

**Do you think we should have had a Technology Dimension for GSIM?**

## CSPA Self-Assessment Criteria

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Levels**  **Dimensions** | **Initial**  **implementation** | **Pre-**  **implementation** | **Early**  **implementation** | **Corporate implementation** | **Mature**  **implementation** |
| Business | Each area designs and develops its own solutions. Budget and staff is located at each area. | Although each area continues designing its own solution they try to make them modular and share the code.  The IT budget and staff are still located at each area but central coordination creating some general guidelines exists. | There is analysis of the business processes. GAMSO and GSBPM are applied as a basis to identify each statistical service and business function.  Some of the roles defined by CSPA start being recognized and informally adopted by the IT areas. | A unique services environment running on a common IT platform to attend all organisational needs is part of the organisation’s long term plans.  All services are defined following an agreed granularity level. IT resources (people, budget, skills, etc.) are mainly oriented to build and maintain the common platform. CSPA roles and responsibilities are clearly defined and mapped to areas in the organisation. | Statisticians are able to make specific orchestrations of services to cover their projects and new user’s requests. A specialized IT cross-organisation group is in charge of the maintenance and expansion of the services platform. There is a planned evolution of the IT services based in long term institutional goals, historic performance indicators and external changes. |
| Methods | Methods are not standardized. | There are some attempts to use some common methodologies, mainly related to codification standards and APIs definition but under the interpretation of each area. | CSPA and other standards starts to be implemented as a concern of the whole organisation, but the implementation is partial obeying to internal needs. First attempts to develop SOA/CSPA based services. | CSPA has been implemented, and all IT staff in the organisation follows it. Reuse and sharing of services developed by other NSOs is a common practice.  Service virtualization is a “must” characteristic in order to make the instantiation of the services easier in different environments. | A basic set of skills shared by all NSOs is defined making it easier to find trained people able to participate on inter-institutional collaboration efforts. |
| Information | Information is duplicated and each application uses its own structure. | Separated information structures in separated systems are common. Some applications share information but in the form of views or other similar mechanisms. Separation of development and production databases starts to being made. | Integrated databases covering several domains exist and services use these shared information sources. Early attempts to apply GSIM and CSPA LIM are carried out. There are separated instances of the databases for development, testing and production, each one following specific rules. Production and dissemination databases are clearly separated. | The common services platform accesses an integrated information environment. The information environment follows the CSPA LIM so shared services can be configured by each organisation to cover its own needs. | Information databases can incorporate new sources of information without affecting the services environment applying an internationally agreed set of models and standards. Information is independent of the environment, so internal, public and hybrid facilities can be used in a transparent way. |
| **Levels Dimensions** | **Initial**  **implementation** | **Pre-**  **implementation** | **Early**  **implementation** | **Corporate**  **implementation** | **Mature**  **implementation** |
| Applications | Applications run as separated instances. It’s very difficult to make them interoperable, manual work is inevitably required. | Some common component libraries start to appear. The components are difficult to integrate in practice and therefore often rejected.  Some commercial components start to be integrated. | Some early service oriented systems making use of services attending certain common activities start~~s~~ to appear.  Services orchestration is still an issue that is mainly carried out for each system. | All applications are developed as an orchestration of services following the CSPA guidelines. Services are developed to be independent of specific IT configurations.  An international service catalogue is used to complement the organisation's own one. | Some (or all) services are shared by several statistical organisations.  There is a shared catalogue that is used by the institutions as a first level place to find existent services.  Local catalogues are still being used for very specific services. |
| Technology | Technology implementations are carried out by demand satisfying individual, isolated, requirements and generating heterogeneity of hardware, software, languages, protocols, etc.  Management and support of technology goes from absent to very basic. | There is a definition of a set of core technologies supported by the organisation which is mostly used as a guideline, but each area still deciding how to fulfil the needs of each project so the integration, reuse and support of technologies is very limited. | There is a standardized IT platform which is supported by the organisation.  Interaction of IT solutions is a common practice because all areas share the same set of technologies.  Reutilization of solutions on different projects is the common rule.  Resources are dynamically managed to optimize its distribution. | IT platform fully supports the SLAs of the services platform, and includes all the needed components to virtualize the services.  IT solutions are customized for the needs of the projects. Hardware and software are optimized dynamically to attend changes in requirements and demands of the statistical business processes. | There is a consolidated corporate IT platform and parts of it are used by several subscribed organisations sharing costs, responsibilities and management supporting commonly agreed SLAs. |

## CSPA Maturity Assessment

The current version of CSPA is version 1.5.

Version Assessed: **1.5**

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| --- | --- | --- | --- |
| **Dimension** | **Current Maturity** | **Target Maturity** | **Key Steps/**  **Requirements** |
| Business |  |  |  |
| Methods |  |  |  |
| Information |  |  |  |
| Applications |  |  |  |
| Technology |  |  |  |

**For Testers**

**Were there any self-assessment criteria that were particularly difficult to understand?**

**If yes, please provide the Dimension and Level for those self-assessment criteria:**

**Were the Levels sufficiently distinct per Dimension?**

**If not, please provide the Dimension(s) and Level(s) where you experienced difficulties**

**FINALLY (across all standards)**

**Do you have any general feedback/suggestions to help us make the filling out of this maturity assessment easier?**

## Definitions

**Capability:**

An ability that an organisation, person, or system possesses. Capabilities are typically expressed in general and high-level terms and typically require a combination of organisation, people, processes, and technology to achieve. Source The Open Group Architecture Framework (TOGAF)  
**Capability element:**

Capabilities provide the agency with the ability to undertake a specific activity. A capability is only achieved through the integration of all relevant capability elements (e.g. methods, processes, standards and frameworks, IT systems and people skills).

**Corporate capability element:**

A corporate capability element is a capability element that is managed at the corporate level for use across the entire organisation.

## Abbreviations

* IT – Information Technology
* CSPA – Common Statistical Production Architecture
* GAMSO – Generic Activity Model for Statistical Organisations
* GSBPM – Generic Statistical Business Process Model
* GSIM – Generic Statistical Information Model
* HLG-MOS – High-level Group for the Modernisation of Official Statistics

1. Applications are software components or programs which provide specific functionality for end users. Web browsers, email programs, and word processors are examples of generic desktop applications, but the term 'applications' also encompasses enterprise-level components providing functionality specific to the business. [↑](#footnote-ref-1)