

Description of the Proposed GSIM Levels 1 and 2

Level 1

There are three Level 1 objects in this GSIM model: Work, Knowledge and Process.

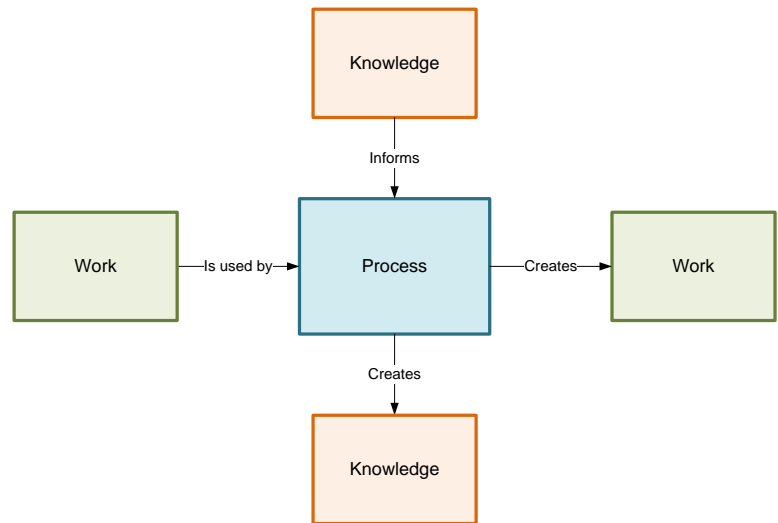
Work objects contain the value statistical offices' activities provide to their community – data measuring the state and progress of society, the economy and the environment. Work in this context takes its meaning from the definition “materials, things, etc., on which one is working or is to work”.

Knowledge objects contain the retrievable intellectual stock of an office's current and prior staff.

Process objects contain the procedures that define the workflow and steps that run an office's statistical activities.

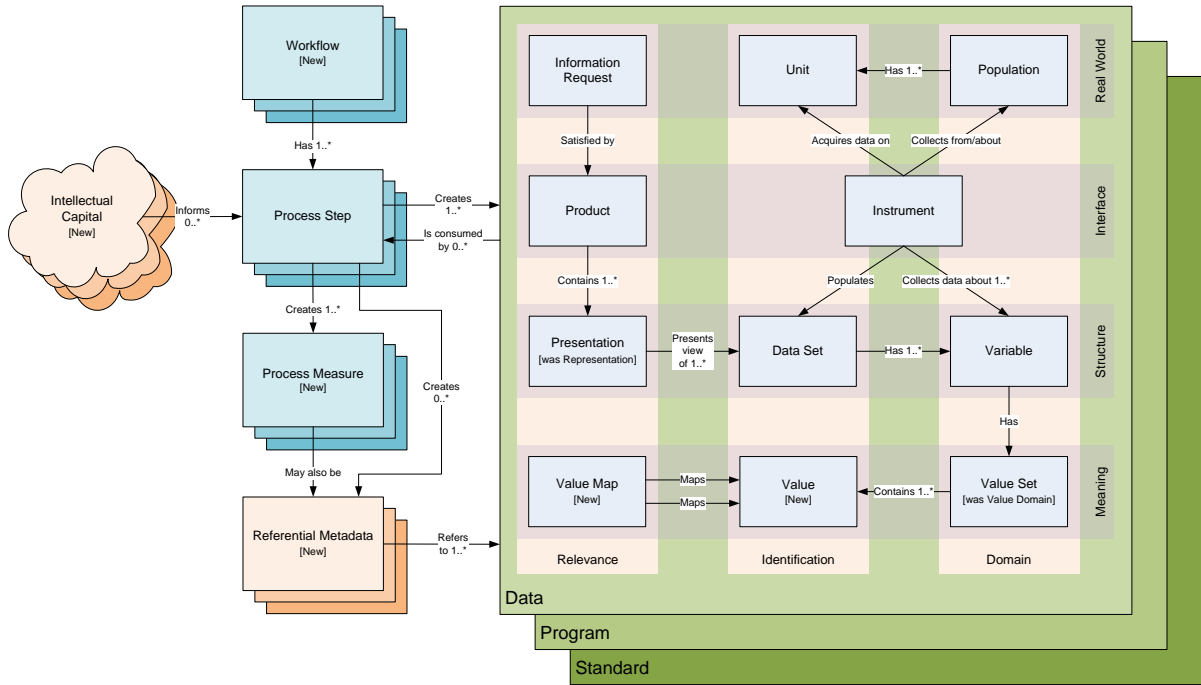
The core of the model is that Processes use existing Knowledge and Work to create new Work and Knowledge.

GSIM “Level 1” Ideas v0.13



Level 2

GSIM "Level 2" Ideas v0.13

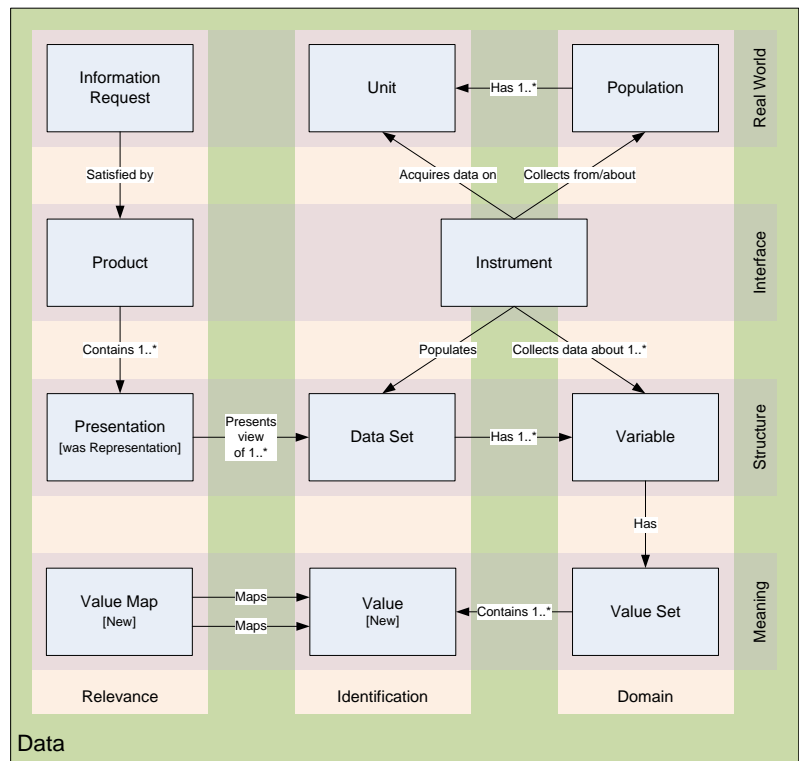


Level 2 describes high-level Work, Knowledge and Process objects that represent a complete and coherent model of the statistical operations of an official statistics office. Many of the Level 2 objects can be broken down into a more detailed set of objects in order to gain a thorough understanding of offices' statistical work.

Work Objects¹

A user makes an *information request* seeking **data relevant** to their real world need. One or more *product*, the relevant interface between the user and the statistical office, satisfies this *information request*. Each *product* contains one or more *presentation*, which presents a relevant view (structure) of a *data set*.

A *data set* identifies data acquired from or about real world units by way of an *instrument* (the interface between data providers and the statistical office). Each *unit* is part of a *population*, which is the real world domain about which **data** is needed to satisfy one or more *information request*.



A *data set* structures data using *variables*, which structure the domains of data collected about a *population*, thereby determining what **data** the *instrument* collects and populates the *data set* with.

A *variable* gains its meaning from a *value set*, which contains *values* that may be used to identify data collected for a *variable* and populated into a *data set*. The relevance of a *value* to a real world information request may be enhanced by substituting an equivalent but more meaningful value using a *value map*.

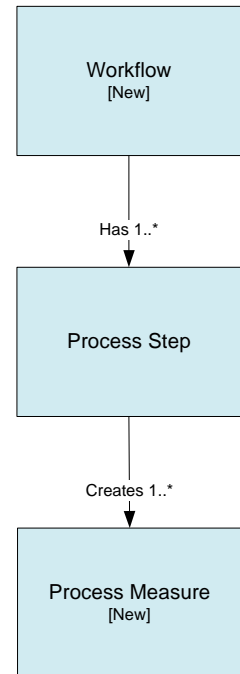
¹ Object names are in *italics*, the active layer in **bold**, and work object characteristic groups are underlined.

Process Objects

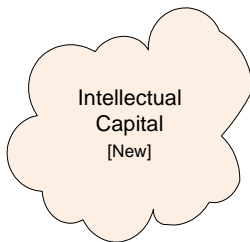
Every statistical operation in the work of a statistical office is defined by a *process step*.

A *workflow* is a collection of *process steps*, operated according to a rule-based, parameter-driven order, which may have serial, parallel, synchronous, and asynchronous characteristics.

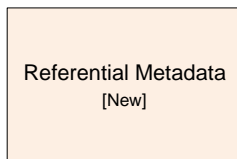
Every *process step* generates one or more *process measure*, which record metrics associated with the *process step* and log *work* and *knowledge* objects used in the *process step* and *work* and *knowledge* objects created by the *process step*.



Knowledge Objects



Any business and statistical knowledge that is not structured in a *work* object, but may be of use when running a *process step*, is captured as *intellectual capital*. This *intellectual capital* exists in the minds of the office's staff, based on their wide variety of life experiences, including studying and working on statistical and subject matters.



Application of *intellectual capital* to a *process step* may lead to the creation of *referential metadata*, which is explanatory or other information that refers to one or more *work* object. Some *process measures* and *work* objects may also have a role as *referential metadata*.

Layers

In addition to individual objects, Level 2 models three mirrored layers, which provide each object with one of three possible states: Data, Program or Standard. For many purposes, consideration of the model at the Data layer is sufficient.

The characteristics of objects created and consumed at each layer are different.

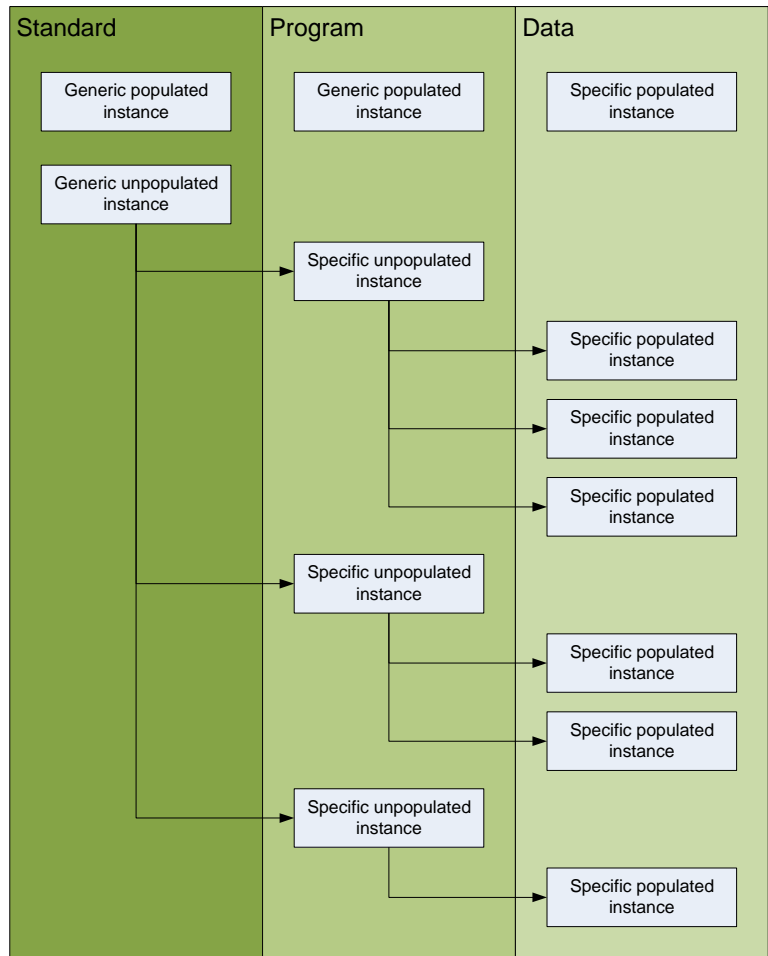
Objects created by a process differ depending on the layer.

Work objects created in the Standard layer are created by a Standard layer process. The objects are either generic populated instances to be consumed in Program and Work Processes or generic unpopulated instances to be replicated and populated in Program Processes.

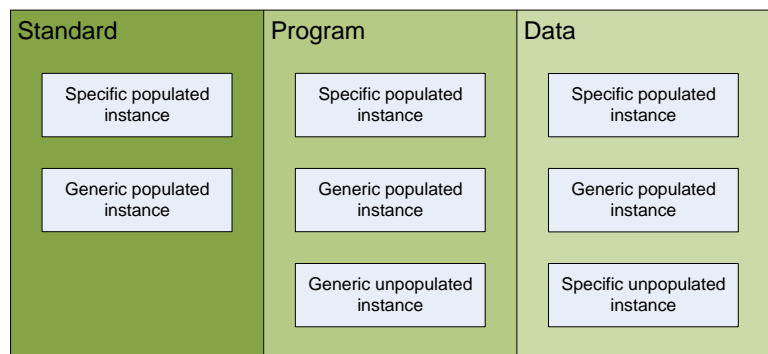
Work objects in the Program layer are created by a Program Process. The objects are either generic populated instances created by a Program Process to be consumed in Work Processes or specific unpopulated instances to be replicated and populated in Work Processes.

Work objects in the Data layer are specific, populated instances created by Work Processes.

GSIM “Level 2” Work Objects Created at each Layer v0.13



GSIM “Level 2” Work Objects Consumed at each Layer v0.13



Process objects differ at each level in terms of the types of work objects they consume and create, although specific populated instances of objects can be consumed by any process.

Data layer processes consume specific unpopulated and generic populated instances of work objects, and create specific populated instances of work objects.

Program layer processes consume generic unpopulated and generic populated instances of work objects, and create specific unpopulated and generic populated instances of work objects.

Standard layer processes consume intellectual capital objects from outside the office's stock of work objects (e.g. work objects from other agencies), and create generic unpopulated and generic populated instances of work objects.

Referential metadata objects may refer to any work object at any level.

Intellectual capital does not have objects at different layers, but intellectual capital is modeled as three layers, as it can be applied to a process step at any layer.

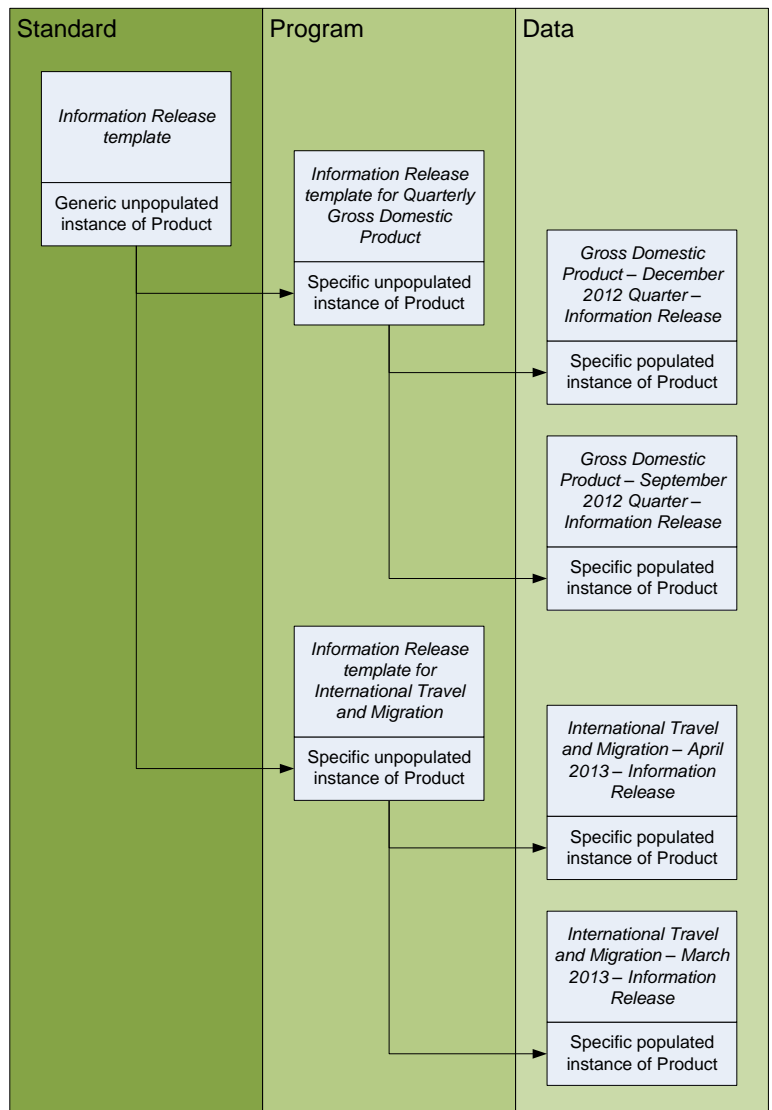
Examples of Layers

Generic unpopulated instance of product object at Standard level:
Statistics New Zealand's "Information Release" template.

Specific unpopulated instance of product object at Program level:
"Information Release" template for Quarterly Gross Domestic Product.

Specific populated instance of product object at Data level: [Gross Domestic Product – December 2012 Quarter – Information Release](#).

Example GSIM "Level 2" Work Objects Created at each Layer v0.13



Generic populated object created at Standard level:
[New Zealand Standard Institutional Sector Classification 1996.](#)