DSD Constructor

Version 1.5

End-user Guideline

International Labour Organization (ILO),

Department of Statistics (STATISTICS)

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Introduction

How DSD Constructor operates

The "Constructor" is a very simple, standalone tool, which is able to create and edit DSDs and their related artefacts (i.e. concept schemes and code lists) in order to generate a DSD which fits your needs and can be used, for example, by SMART to obtain the output dataset as required.

It can grab concepts and associated code lists from any SDMX registry, from a file or creating them from scratch. It is also possible to edit an existing DSD and save it with a different id after making some changes.

Operating systems required

Windows 7 and later version

Download and install:

https://ilostat.ilo.org/resources/sdmx-tools/

Installation

This software installation package can be downloaded from **ILOSTAT** web site or from sdmx.org, **t**he official site for the SDMX community. *(See Figure 1: Install page)*
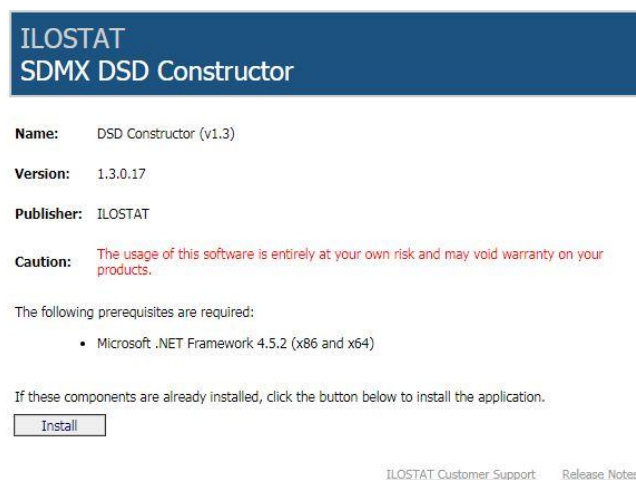

Figure 1: Install page

When user start downloading it by clicking the *"install"* button, a registration page will ask the user to enter some information. If the registration is cancelled, the software will not be downloaded. After completing the registration, the installer package will be downloaded. *(See Figure 2: Registration form)*

Figure 2: Registration form

Please run this package to complete the installation process. The program will automatically connect to ILO's server to verify the integrity of the package. *(See Figure 3: Start verify and install)*
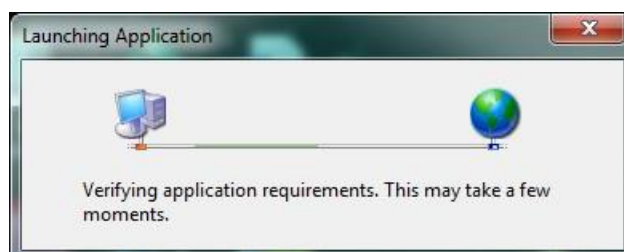

Figure 3: Start verify and install

After the installation completes you are ready to run the **DSD Constructor**.

Step-by-step guide

DSD Constructor initial screen appears as follows, with three well-defined areas that we will call Zone1, Zone2 and Zone3:
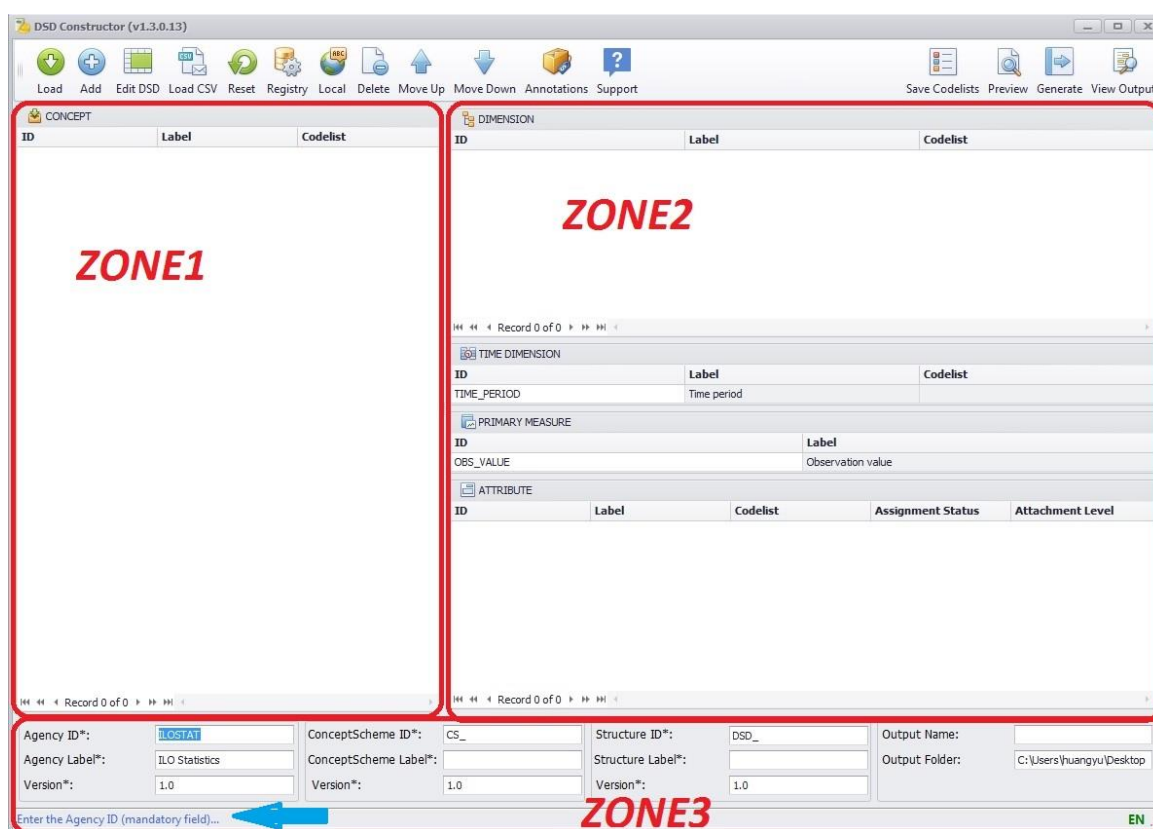

Figure 4: The main window

- Zone1 is the "Concept area": this is the concepts' "store" which contains the concepts available to compose the DSD. Concepts can be loaded online from a SDMX registry or added manually.
- Zone 2, includes two areas to allocate each concept in its assigned role for the DSD, either "Dimension" or "Attribute". When the user places a concept in one of these areas (by dragging and dropping it from the "Concept" zone) it is assigned the role. "Time dimension" and "Primary measure" concepts are already created and their ids default to TIME_PERIOD and OBS_VALUE, respectively.
- Zone3 contains the identification and location information for the artefacts. This information can be completed during the "Generate" (save) step afterwards.

The last line is the "Message area" (signalled by a blue arrow in *Figure 1*) and provides contextual messages to the user.

There are three ways to start working with the DSD Constructor:

1. Concepts can be gathered from (a) registry(ies) by using the "*Load"* button*.
2. A concept can be added manually
3. Open and Edit an existing DSD file with the *"Edit DSD"* button.

Loading concepts from a SDMX registry

"**Load**", the first button in the top menu (*See Figure 5*), allows user get existing concepts by loading from any SDMX registry.
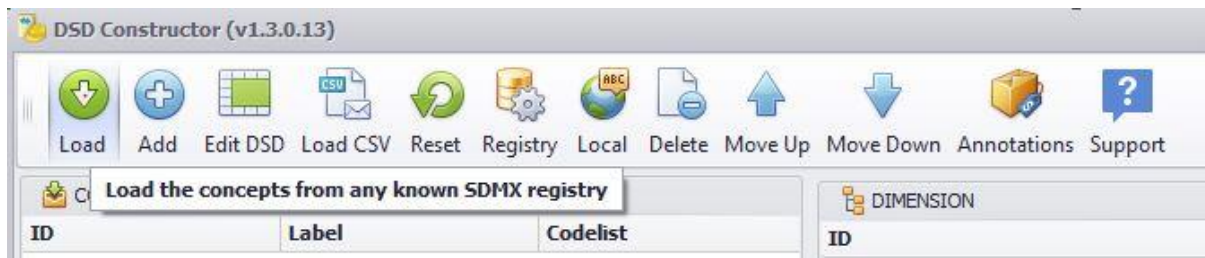

Figure 5: when mouse point to the load button

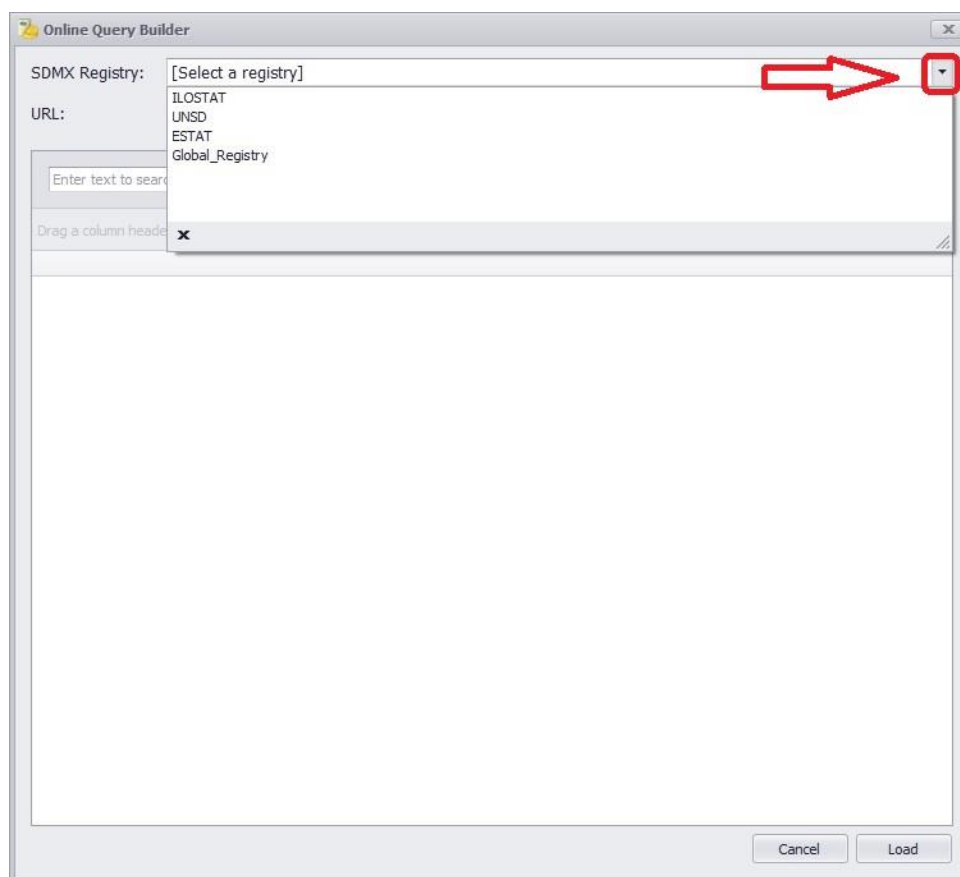When user click "**load**" ribbon button, a new window (*Online query builder*) opens.

Figure 6: Online query builder window

On the right side of the new window, the drop-down button (Red Arrow) allows selecting the SDMX registry from where to gather concepts. The "Edit Registry" button on the right side of the URL allows the user to modify the registry URL address, or adding new entries to the Registries list. *(See Figure 7)*

Once a Registry is chosen, the list of Concept Schemes found in it will be displayed. The drop down button to the left expands/closes the concepts' list.

Below the URL there is a text box where the user can enter any keyword to search and reduce the number of concept schemes in the list.
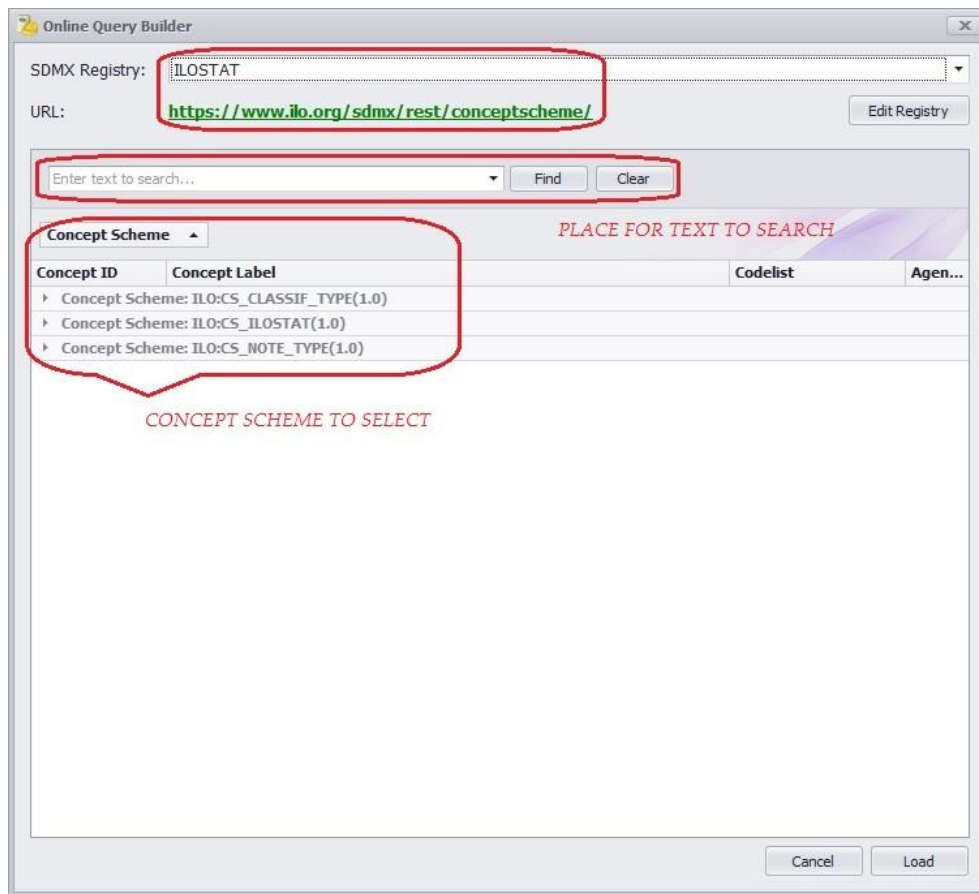

Figure 7: Online query builder

For example, if the user searched for the keyword "*age*" in the ILOSTAT SDMX Registry, it will display all entries corresponding to concept IDs or labels including the "*age*" keyword.

A filtering feature (similar to Excel one) is available by clicking on the upper right corner of the "**concept Scheme button**".   (*See Figure 8, signalled by a red star)*. A pop-up window will appear on the screen *(Figure 8);* the first tab is the "*values*", where user can enter text or check the box. The second tab is a "*Text filter*", where a drop-down menu provides operators to be applied to filter the list with the target text *(Figure 9)*.
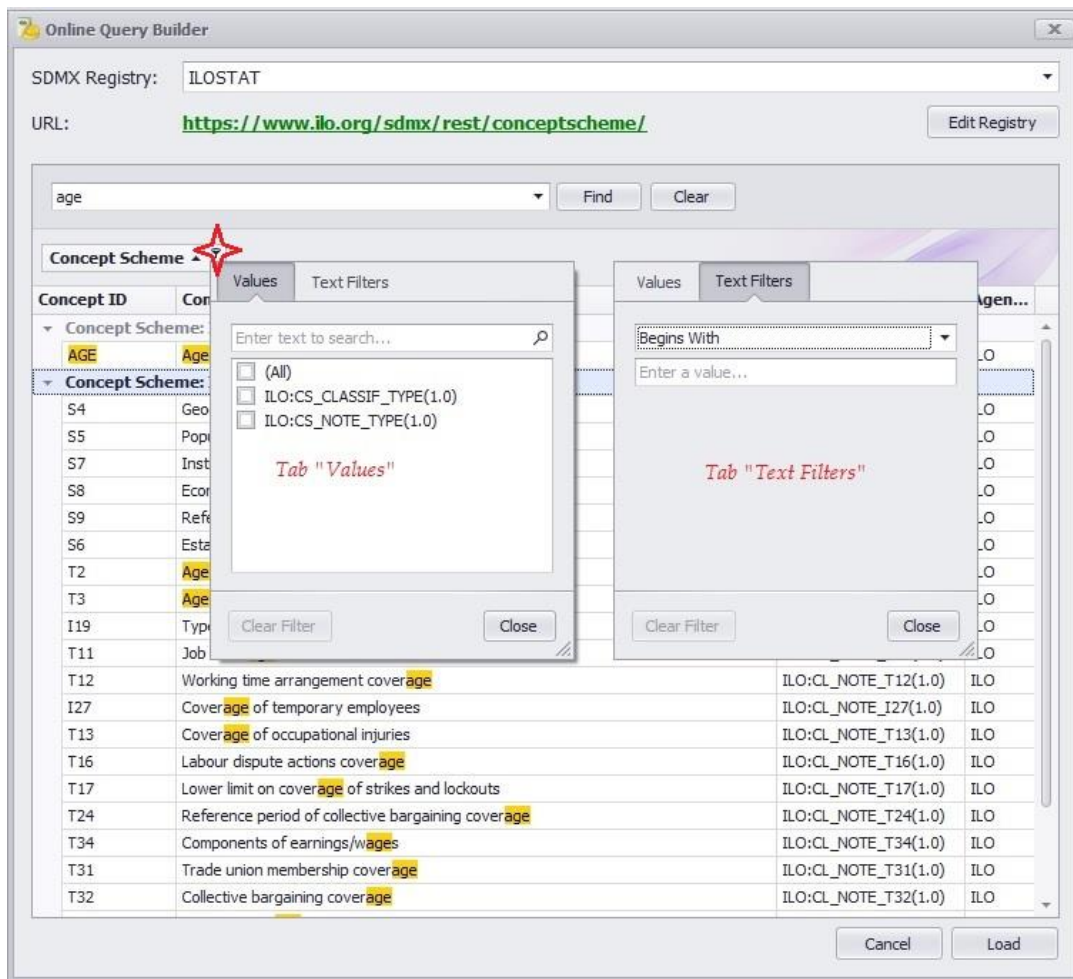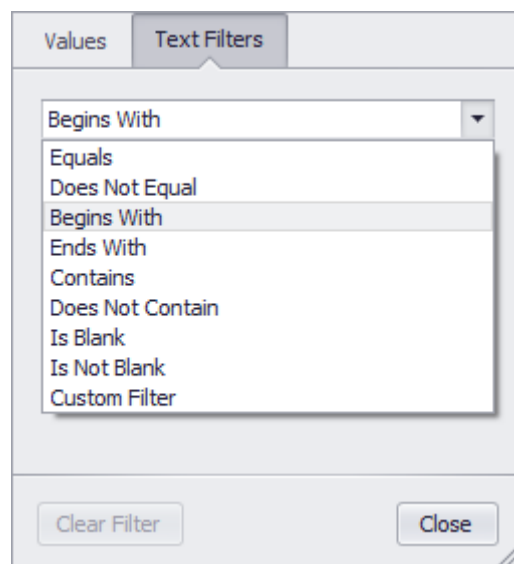
Figure 8: Active filter windows

Figure 9: the "Text Filters" window include several operators

The user can choose the concept they want to be uploaded into the right panel of the DSD Constructor by double-clicking on the selected concept or just selecting it and click on the "**Load**" button *(Figure 10)*. The filters can be cleared by the "**Cancel**" button.
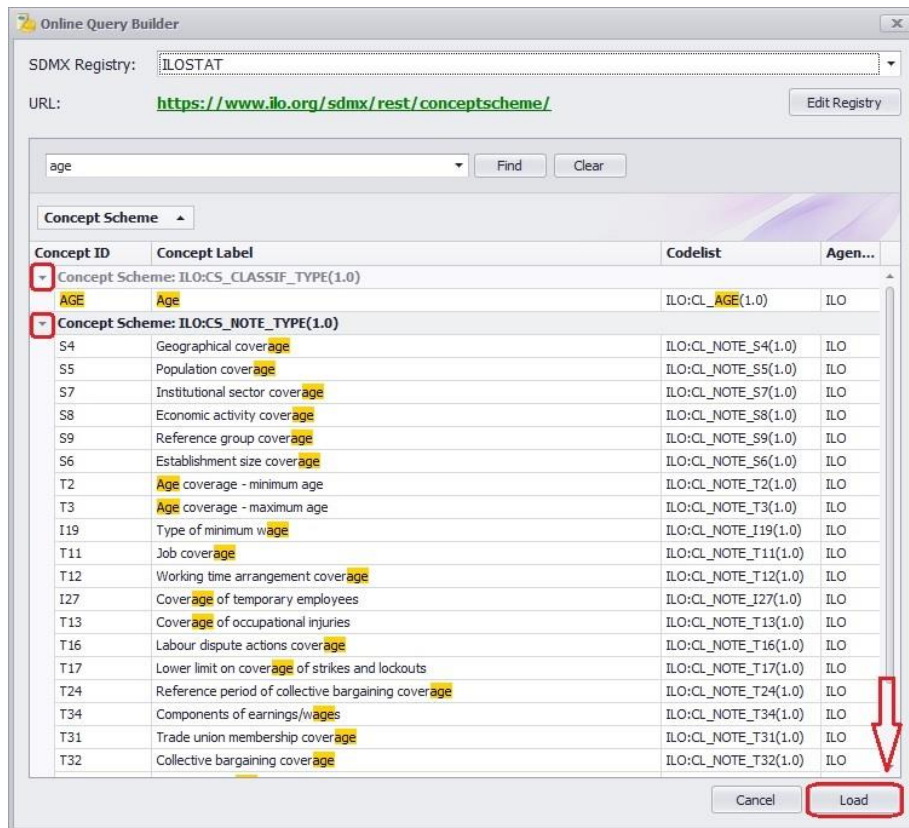

Figure 10: Load selected concepts.

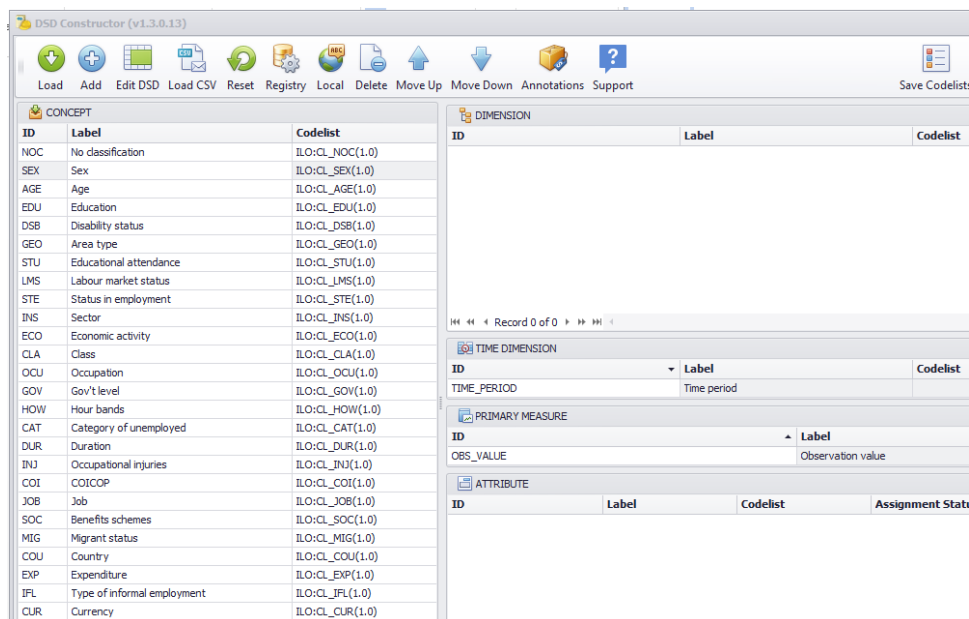The *Figure 11* shows the main screen after loading several concepts:

Figure 11: The result of loading selected concepts.

Add a new concept into the CONCEPT panel

The second button in the menu is "*Add*", for the user to add new concepts to the "CONCEPT" panel.

Figure 12: The Add ribbon button: when the mouse points to it, the hint message will pop-up.

A new window (*New Concept*) will open for the user to enter all the necessary information to create a new concept, starting by an ID and Name[1].
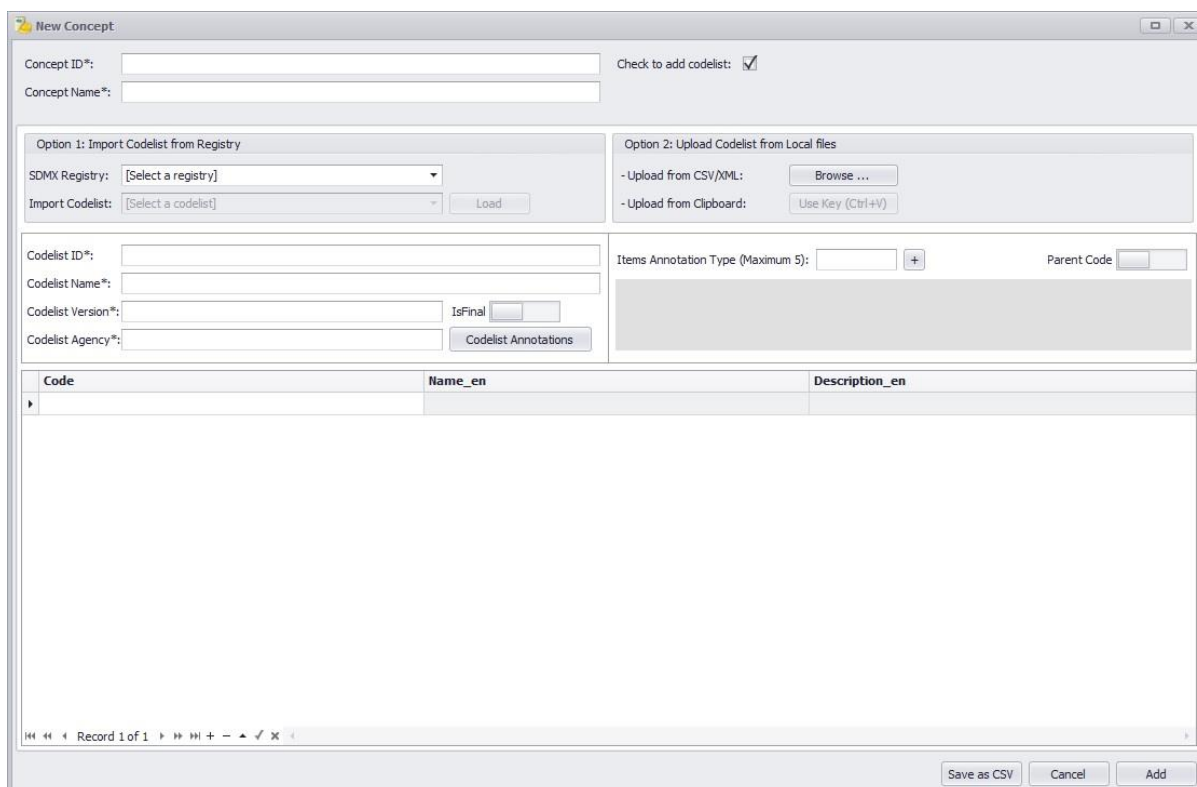

Figure 13: The New concept window

Concepts can be enumerated (by an associated code list) or not. By default, it is expected to be enumerated, but the user can uncheck the box *"Check to add codelist"* (*See Figure 14, #1*) to create a non-enumerated concept. In such case, the window will collapse and nothing else than the ID (*#2*) and Name (*#3*) will be necessary to create the concept when clicking "*Add*".
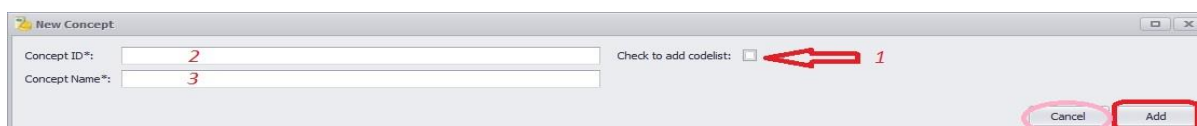

Figure 14: Adding a new concept without a codelist

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[1] These fields must comply with the SDMX restrictions for the characters in codes and IDs throughout all SDMX-ML messages. Valid characters include A-Z, a-z, @, 0-9, _, -, $.

If the concept is enumerated, a codelist can be added by different means:

1. Import an existing codelist from a registry. Select one of the available registries and all the codelists in it will be available to select and load. *(See Figure 15, #4 and #5)*
2. Upload a codelist in SDMX-ML or csv format. By clicking on "**Browse**" *(See Figure 15, #6)* you can load an existing codelist in SDMX-ML format from a file. In such case, all the characteristics of this codelist (identification and annotations, *Figure 15, #8 to #15)* will be uploaded and can be edited. If a csv file is loaded, it must have a header with at least code and name columns. Description, Parent and up to 10 item's annotations are also possible. Any localized element (i.e. Name, Description and annotations' text) must be suffixed with an underscore and the ISO 639-1 language code (e.g. "_en" for English, "_fr" for French). It is very important to note that only languages that have previously been configured in the "Locale" configuration will be taken into account (See "*Add new language*").
3. By entering manually the elements of each codelist's item with the editor. It is also possible to Copy-and-paste elements from an Excel worksheet just by selecting a cell in the editor and pasting the clipboard with "Ctrl-V".

In case of csv upload or manual entry, all identification items (*Figure 15, #8 to #11)* must be entered. The program will take as defaults "CL_<Concept ID>" for the Codelist ID, the Concept Name for Codelist Name, 1.0 for Version and the default agency *(See Figure 4, Zone 3)* for the Agency.
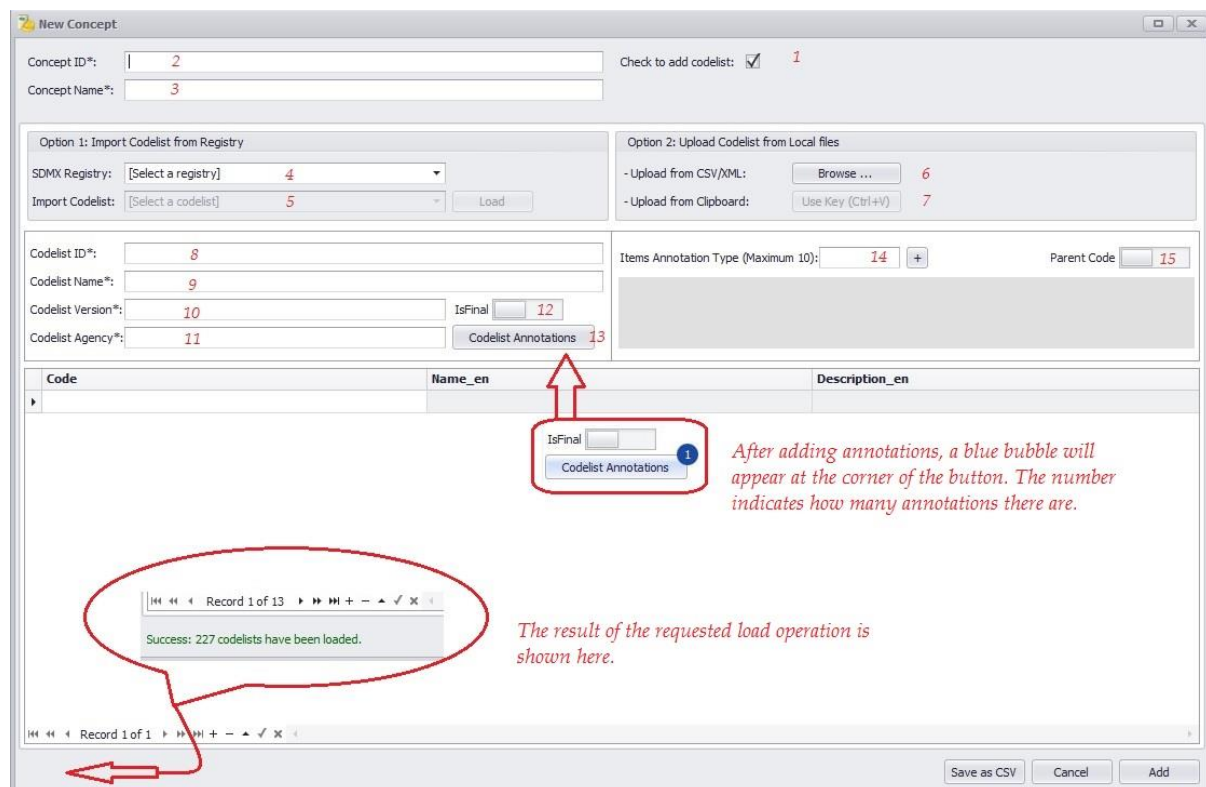

Figure 15: The fields in the "New Concept" window

The "**IsFinal**" condition can be set by moving the button to the right (*Figure 15, #12)*. The switch will get coloured, meaning that this codelist is the final version.

The button "**Codelist Annotations**" (*Figure 15, #13)* is used to enter or edit codelist-level annotations. Clicking this button will bring up the new window "*Annotations*" *(below)*, allowing the user to specify

annotation *Type*, *Title* and *Text_<lang>,* i.e. localized for configured languages (See "*Add new language*").
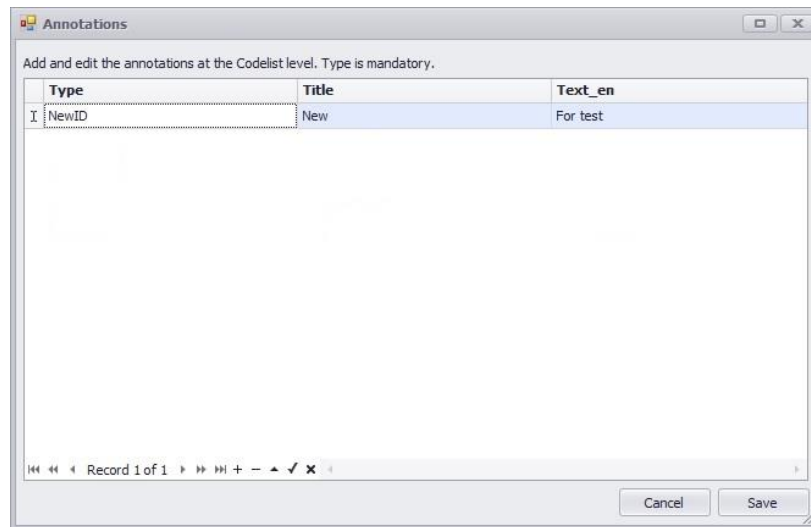

Figure 16: Annotation window

Up to 10 "**Items Annotations**" can be added by specifying the annotation "*Type*" in the field *#14* and click the plus (+) button. New items' annotation will be listed in the grey area right under field *#14* with a red "x" icon which permits its deletion (*see below*), as well as are to be displayed in the codelist editor zone adding one column for the Title and localized columns for the Text.

Figure 17: Add item's annotations

Moving the "**Parent Code"** switch to the right (*Figure 15, #15)*, a new column named "Parent" will be added to the codelist where references to parent codes should be entered to create a codelist with hierarchical relationships.

Load and Edit a DSD file

The DSD Constructor can edit DSD files in SDMX-ML format. Clicking the "*Edit DSD*" button (*See below*), the DSD constructor will open a new window to locate and upload a DSD .xml file *(See Figure 19).*
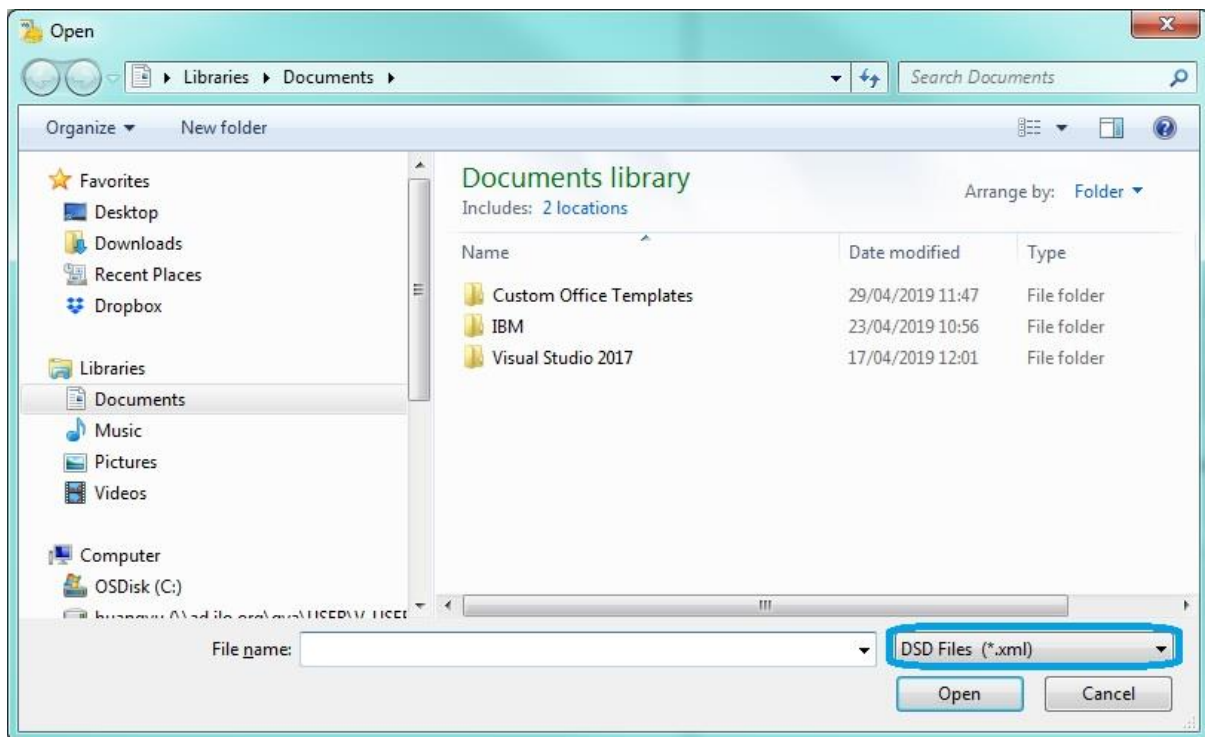

Figure 18: Edit DSD button at menu bar.

Figure 19: browse for DSD file

Note: The "**Load CSV**" function has been deprecated. It will be replaced soon by a function to upload a DSD froma registry and proceed to edit it in the same way as "**Edit DSD**".

Figure 20: The Load CSV button.

After successfully loading concepts in the "CONCEPT" panel, or an existing DSD to edit, any concept in the "CONCEPT" area can be assigned a "dimension" or "attribute role by dragging and dropping into the "DIMENSION" or "ATTRBUTE" right-panel area, and vice-versa. (*See Figure 21*).

The "TIME DIMENSION" and "PRIMARY MEASURE" are named "TIME_PERIOD" and "OBS_VALUE" by default, and usually should not be changed.

It is possible to move a concept to and from any of the areas. And it can be also edited at any moment by double-clicking on it.
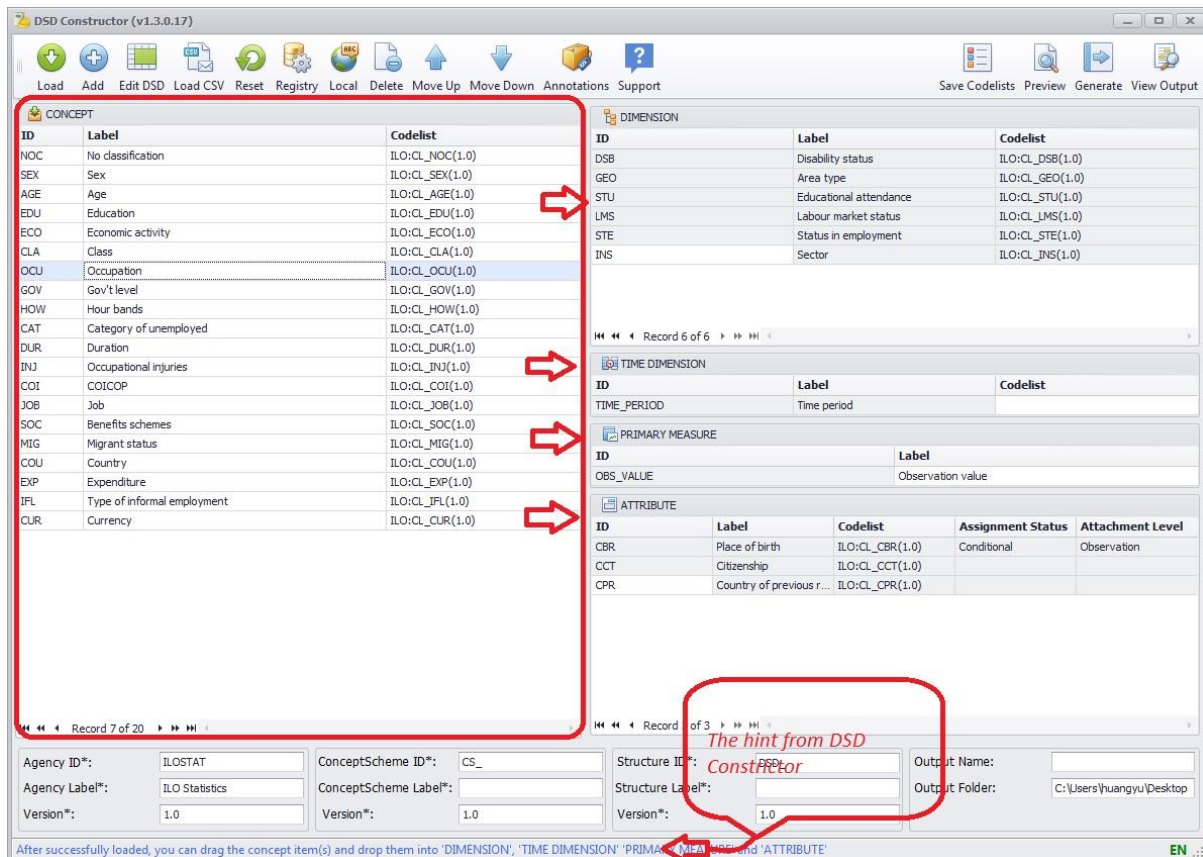
Figure 21: Drop concepts from ZONE1 into ZONE2.

For example, to edit "AGE", double click on the concept row and a new window will be opened to edit the concept and associated codelist (if any) (*See Figure 22*)

In the "Edit concept" window you can proceed in the way already explained for "Add a new concept into the CONCEPT panel". In this example, the orange arrow indicates that "age" already has two item annotation types.

The editor window (#16) provide all the standard features for adding/deleting/modifying rows and fields. Number of options are also available to manage the column headers, like re-arranging or filtering.
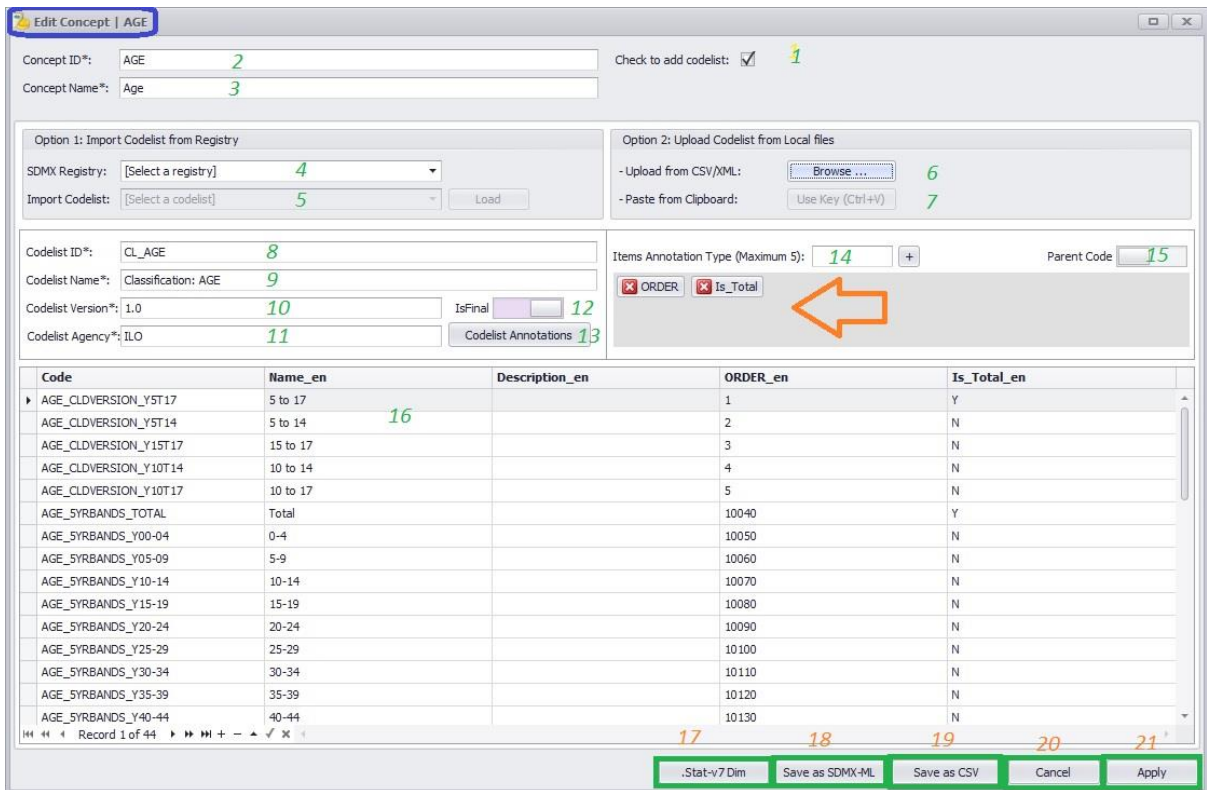
Figure 22: Edit Concept window

Diverse options to save the codelist are available as independent buttons: .Stat V.7 dimension (#17), SDMX-ML codelist (#18) or plain csv files (#19) can be created. "*Cancel*" (#20) will discard any changes in the concept and codelist, and will return to the main screen, and "*Apply*" (#21) will apply all modifications and close the window.

Reset

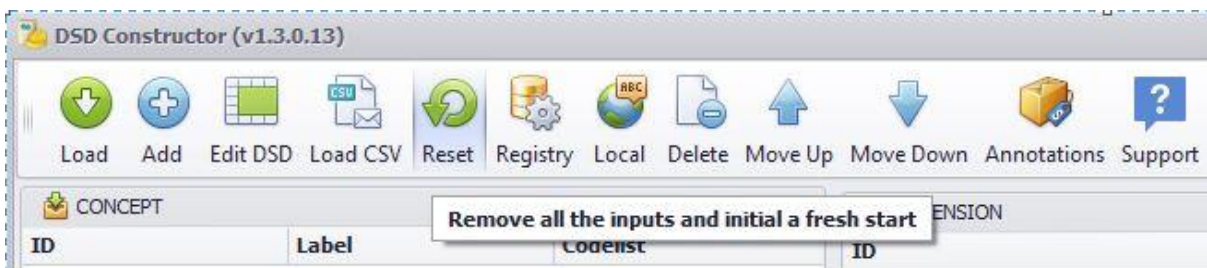Clicking the "*Reset*" button discards any work done and gives a fresh start.

Figure 23: Reset button

Add, delete or modify available SDMX registries.

User can add, modify or remove the SDMX registries to which the DSD Constructor will be able to connect and download artefacts. Clicking the "*Registry*" button a new window will pop up. Just type in the new registry name and the new URL, and then click "Save" to make the new registry available. If the registry is a .Stat v.7 datawarehouse, select "Yes" for "Is this .Stat?"
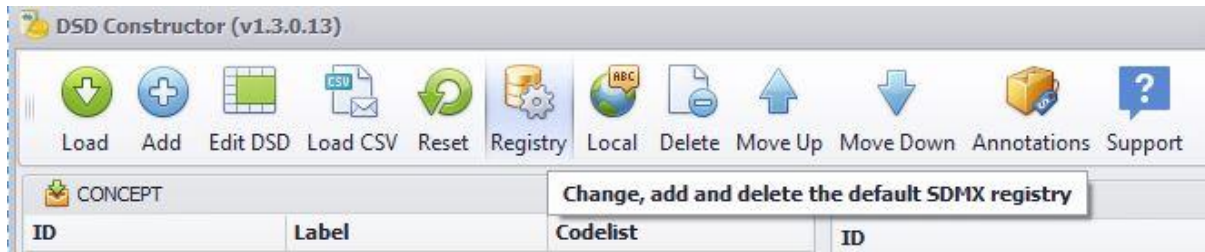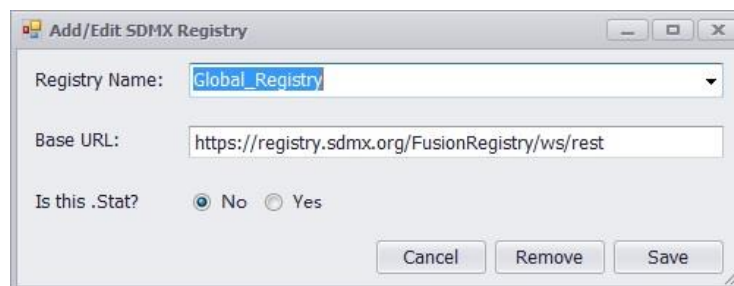

Figure 24: Registry button

Figure 25: Add/edit SDMX Registry

Add new language

When editing an SDMX file, the user can change the default or add more supported languages. (*See below)* and the "***Language***" configuration window will pop up. Please note that a maximum of 3 languages can be managed by DSD Constructor.
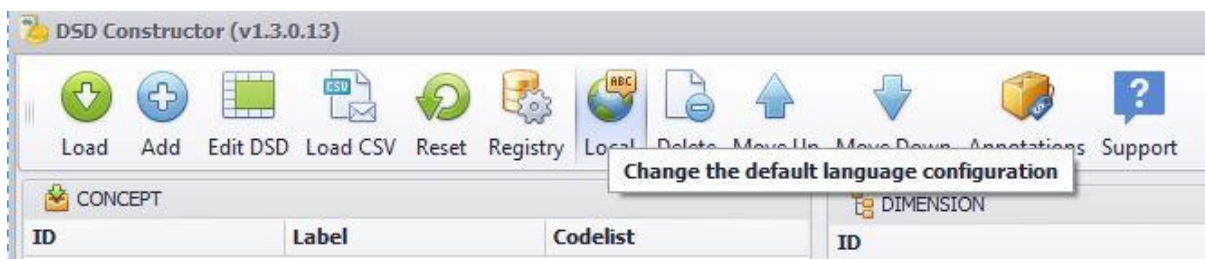

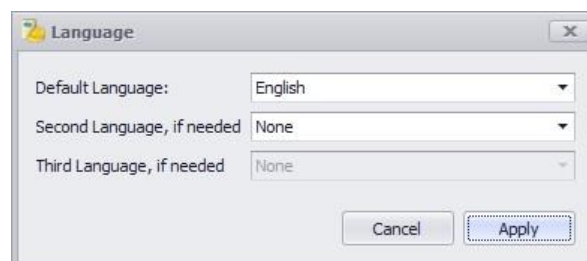*Figure 26: Change the default language configuration.*

Figure 27: Languages configuration window.

Manage concept items at ZONE1 or ZONE2

While editing concept items, it is possible to remove or reorder these items, by means of the delete and move-up or move-down buttons.
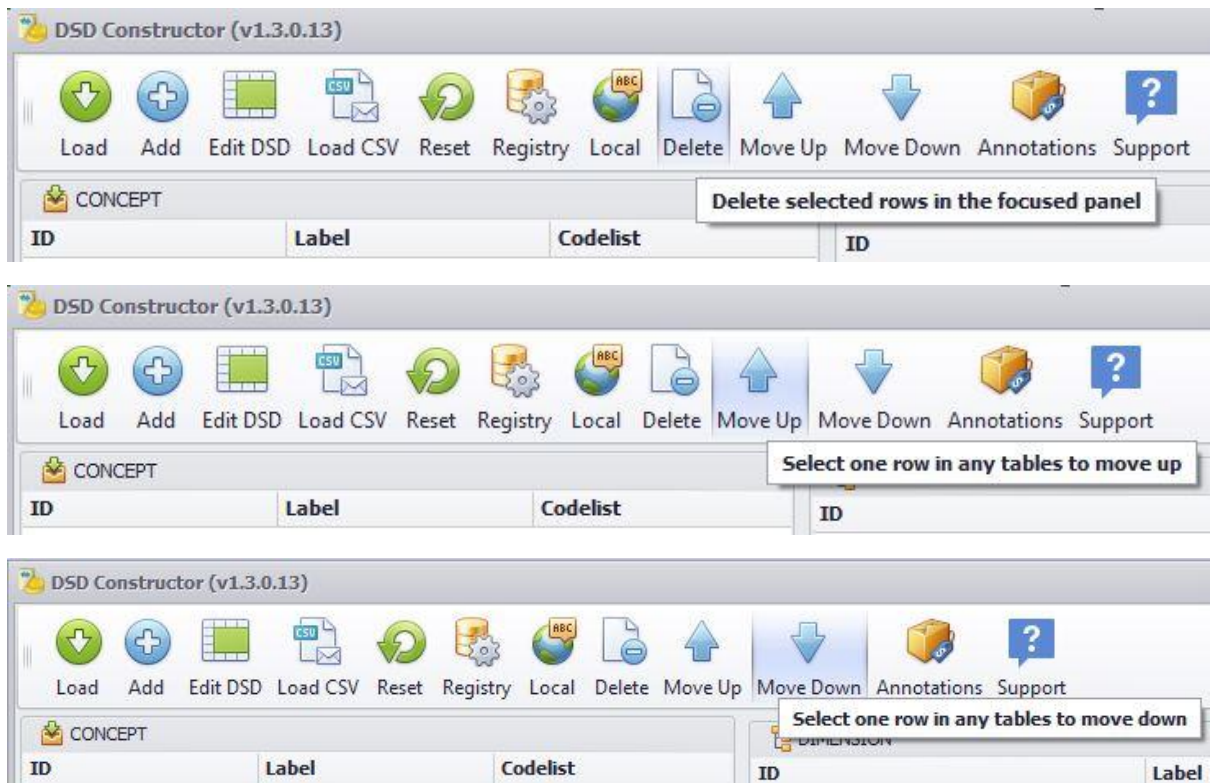

Figure 28: Manage concepts buttons

Set Annotations for DSD or Dataflow level

User can set up annotations by clicking the "***Annotations**"* button. A new window will open where the attachment level (Artefact: DSD or dataflow), Type, Title and Text (localized) can be entered.
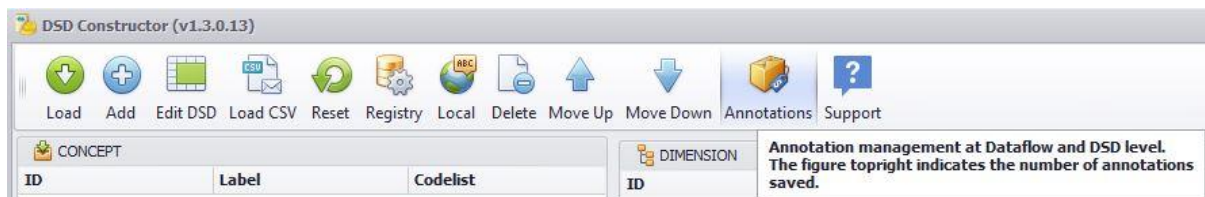

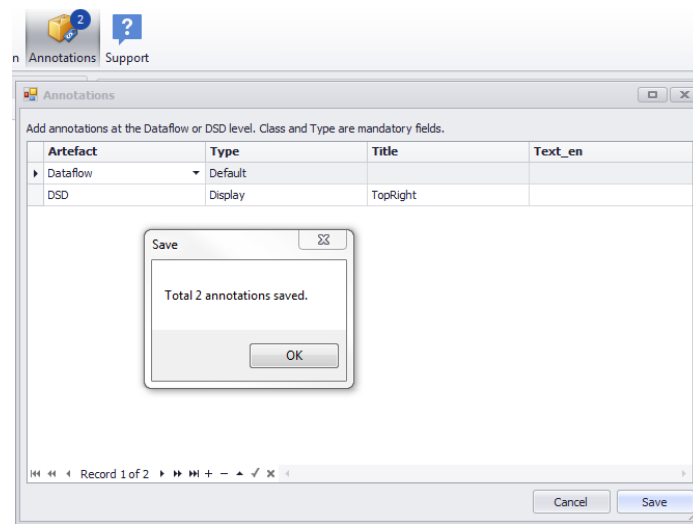*Figure 29: The Annotation button.*

Figure 30: Setup Annotations.

Get Support

If you have questions or need assistance, please click the "*Support*" button and send an e-mail to *sdmx.support@ilo.org* with your default email program.
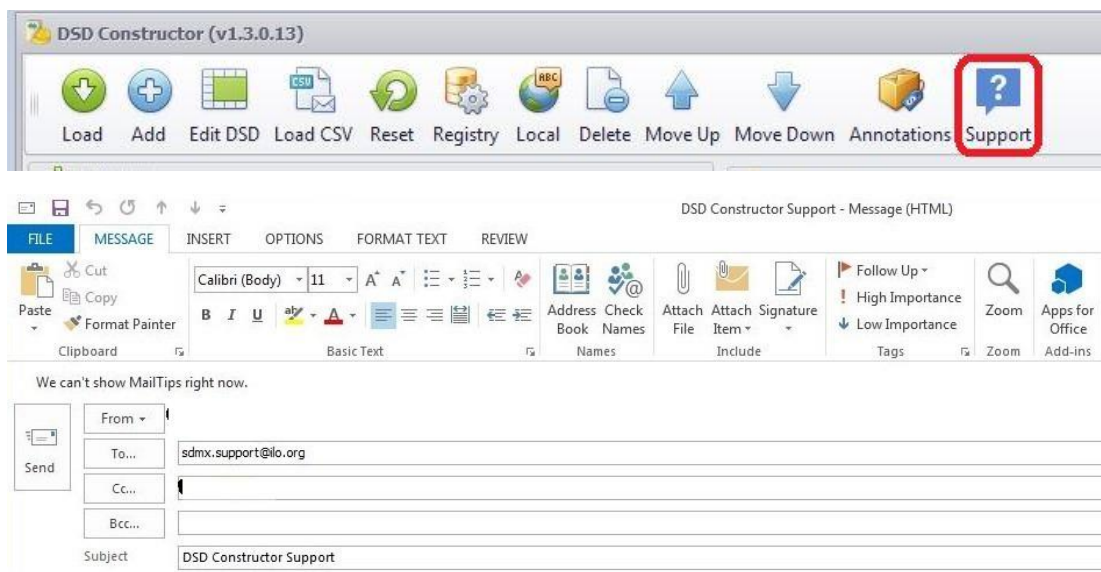

Figure 31: Request support

Saving artefacts

All the code lists can be saved in a single SDMX-ML artefact by clicking on the *"Save codelist"* button. (*See below*). A new window "*Save codelists in SDMX-ML*" will open. User can choose which type of concepts (dimensions or attributes) codelists to save and where to save them.
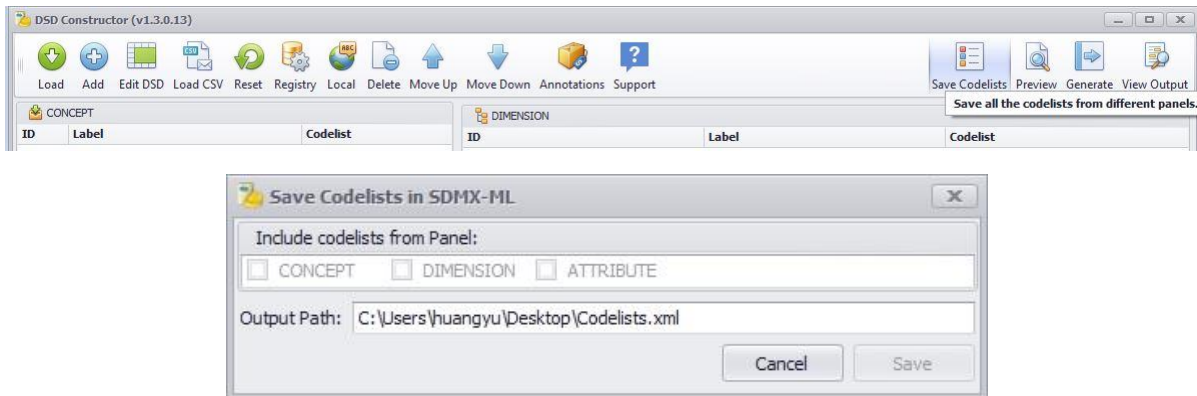

Figure 32: Save codelists

The "***Preview***" button displays a flat representation of the DSD created showing the concepts under each role.
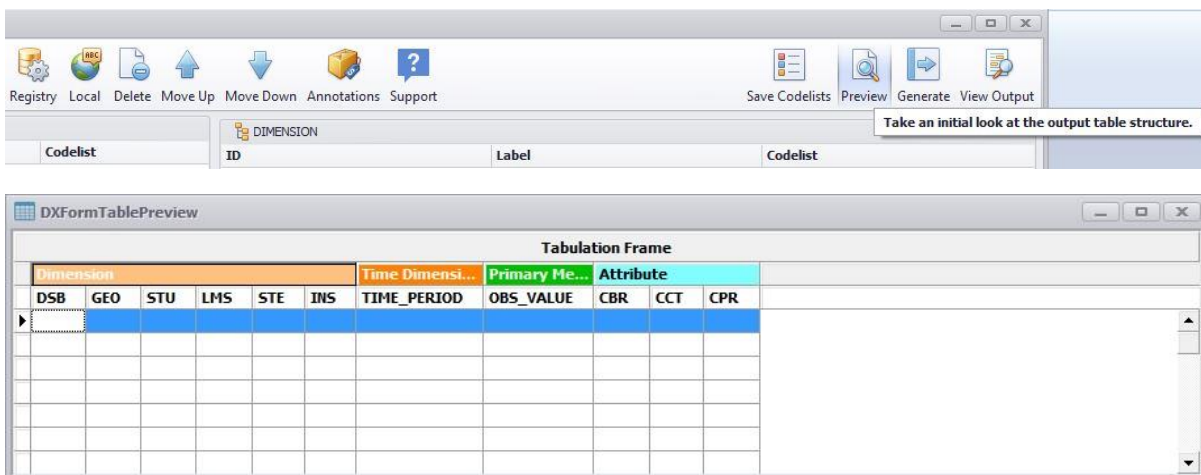

Figure 33: The preview of new DSD

Finally, the "***Generate***" button saves the artefacts.

Figure 34: Generate button

When clicking the button a new window will popup, requesting the necessary information to generate and save the AgencyScheme (optional), ConceptScheme, DSD, Dataflow (optional) and Codelists, in a single or independent files by artefact type.

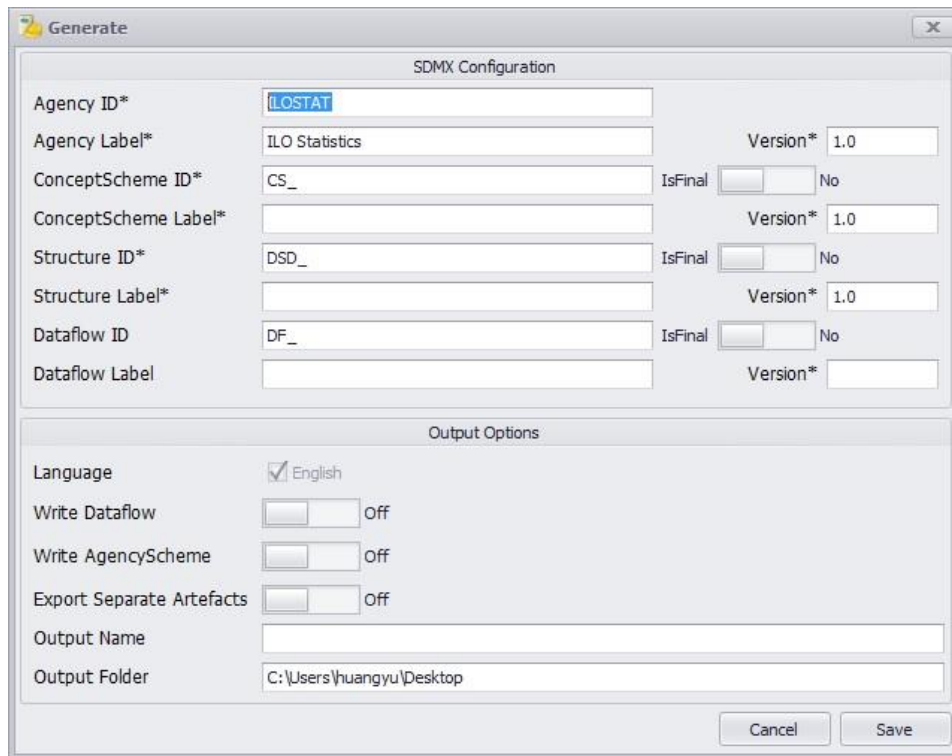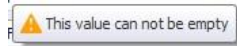All fields marked with an asterisk (*) are mandatory. If left blank, the program will give a warring via yellow triangle message. ⚠ This value can not be empty

Figure 35: Generate window

When user successfully complete the configuration and save, the program will pop up a confirmation dialog box, click "**OK**" to close this dialog box.
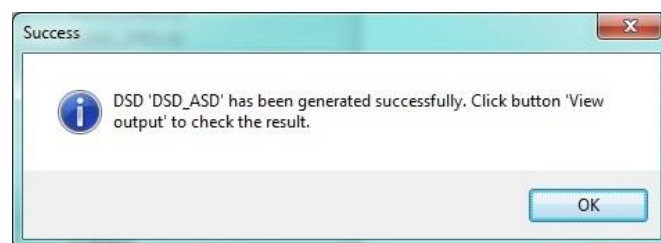

Figure 36: Confirm dialog box

The last ribbon button is "**View output**". Cliking on it will open the folder where the artefacts have been saved.
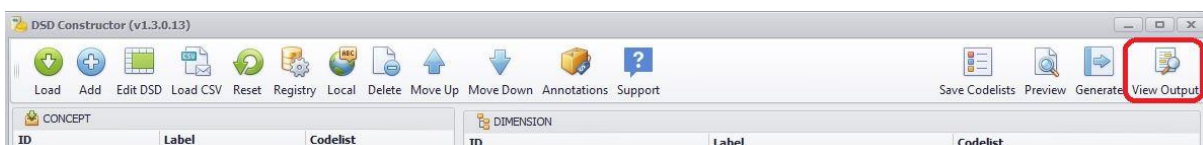

Figure 37: View Output

Update

DSD Constructor can be installed and run with minimal user interaction. It uses the ClickOnce Deployment method which enables self-update to the newest version. The only requirement to trigger the update is to have internet access at the moment the application is launched.

We are constantly updating and improving the program, the new features and bug fixing will be updated in the "Release notes" page for successive new releases.

Feedback

If you have any suggestion on how to improve either the software or this Guidelines, please write to the following e-mail address:

sdmx.support@ilo.org

Thank you!