Current release does not require some installation procedures. Just copy set of files.

There are four executable modules in the kit:

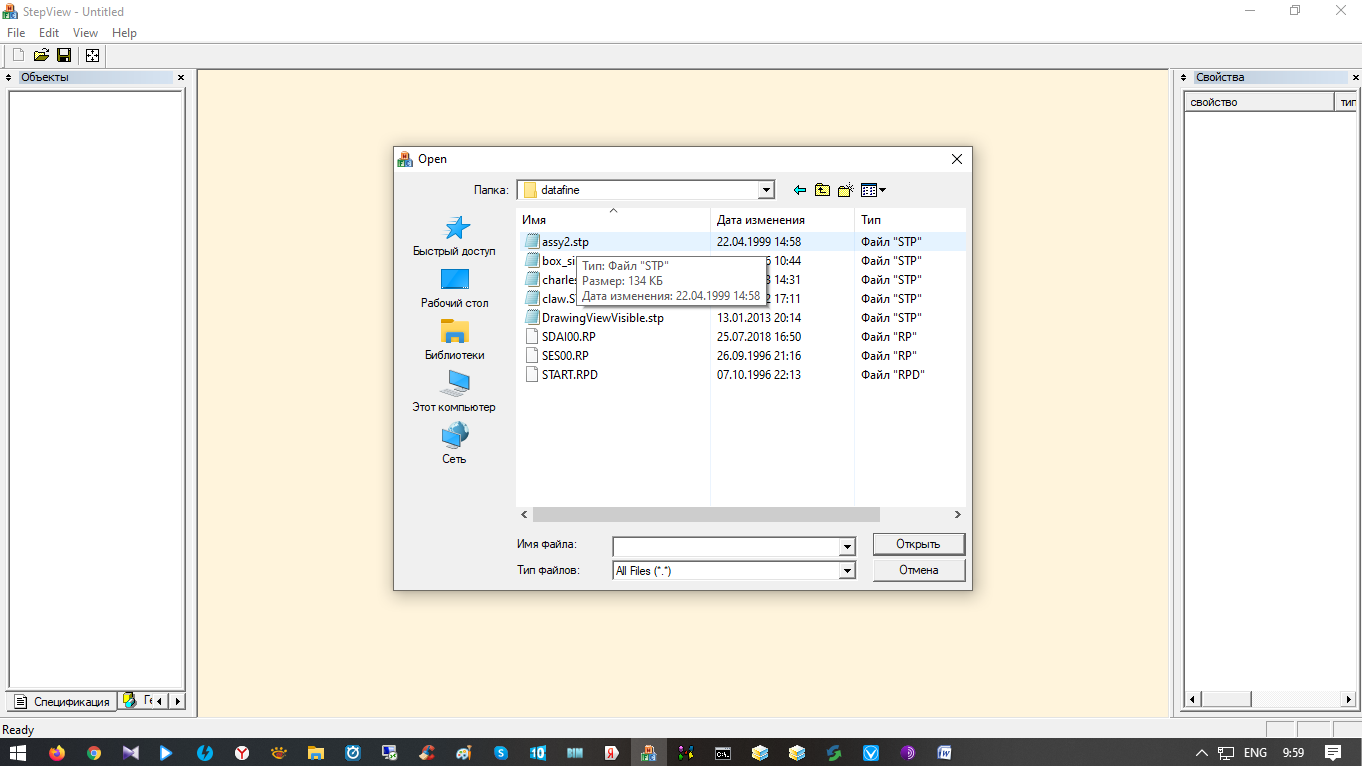
* StepView.blind.bat; -- Run StepView without graphics, in browser mode
* StepView\_D.blind.bat; -- Run StepView without graphics, in browser mode, Debug version. In rare cases Debug can run more successfully than release
* StepView.exe; -- Release version.
* StepView\_D.exe. -- Debug version. In rare cases Debug can run more successfully than release.

**When run StepView.exe you have keep in mind following behavior feature of software module: STEP exchange file to be read and data dictionaries (Start.rpd, SDAI00.RP & SES00.RP files) have to be located in the same folder.**

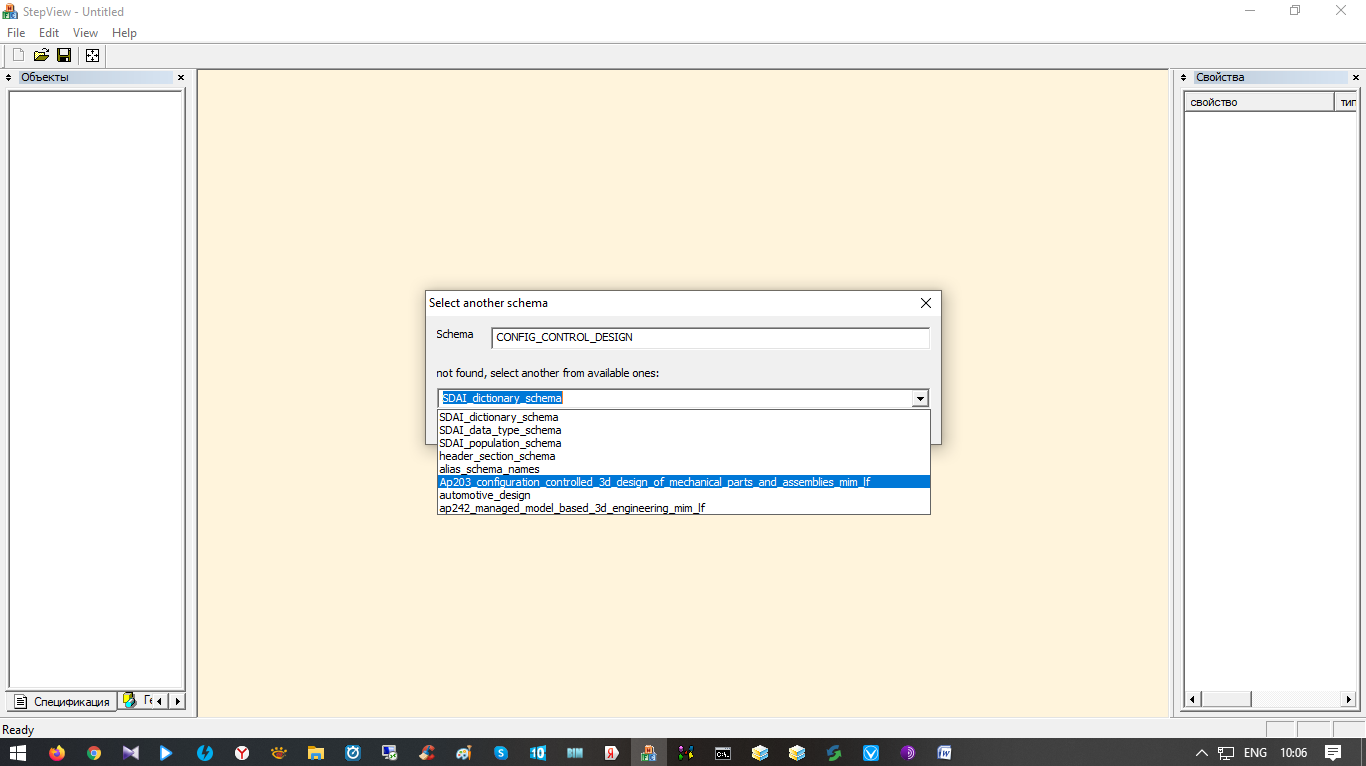
**Description of StepView user interface**

(There is the same interface in blind mode, the only difference is absence of graphic view in the middle window).

After module firing file selection dialog appears immediately[[1]](#footnote-1):



If EXPRESS schema from Header section of STEP exchange file not found in the data dictionary, list of all available data dictionaries appears:



Select schema and click OK button.

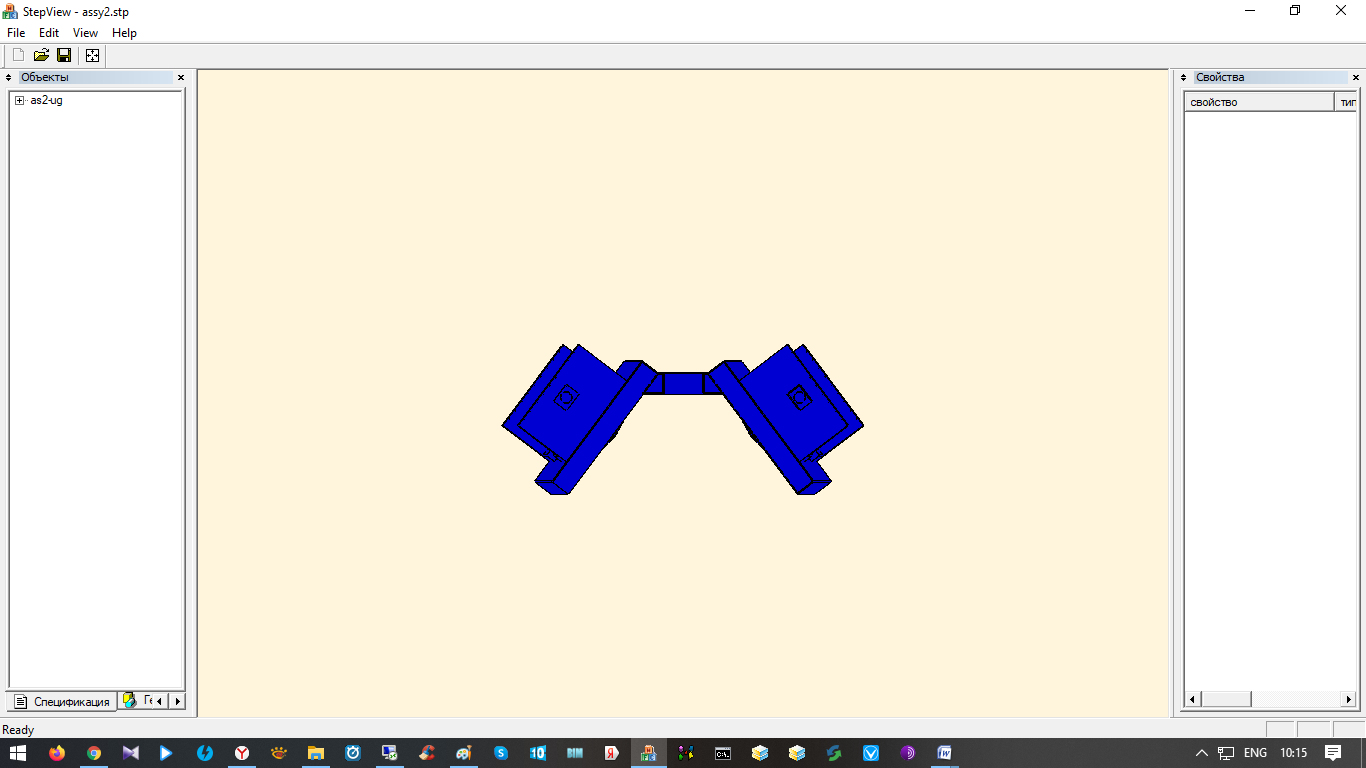
There three windows:

**Left window** – Application-specific window. Tabs in this window allow investigate STEP file content from specific application domains point of view.

**Middle window** – Contains graphic presentation of product geometry. This window is empty when StepView runs in blind mode.

**Right window** – Browser window.

Product presentation appears in the middle graphic window after STEP file loaded:



STEP browser window

Graphic window

Application-specific window

# Graphic window

## Image manipulation

How to handle graphic presentation.

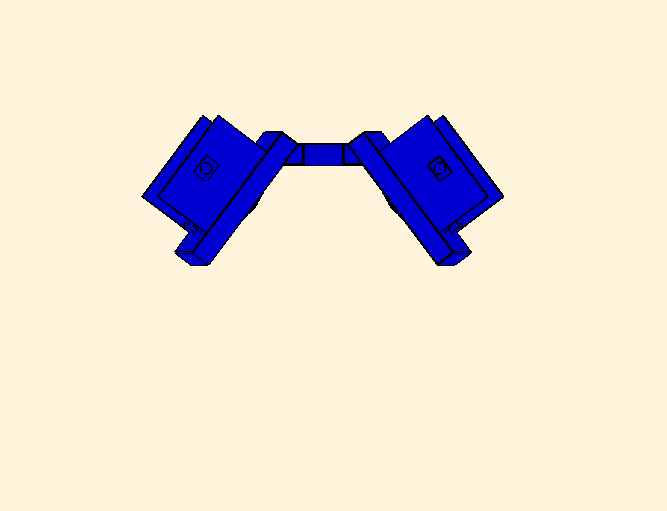
There three modes for presentation manipulation:

Pan;

Zoom;

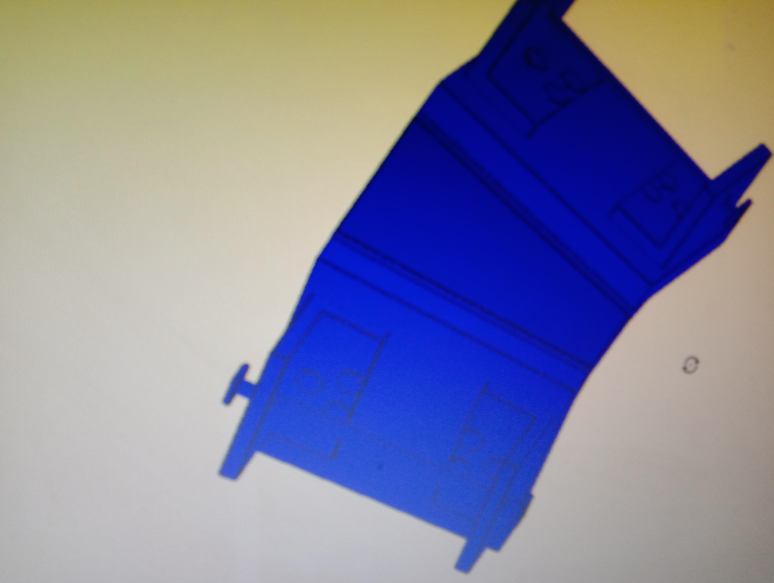
Rotate.

1. Click mouse wheel and switch to pan mode.

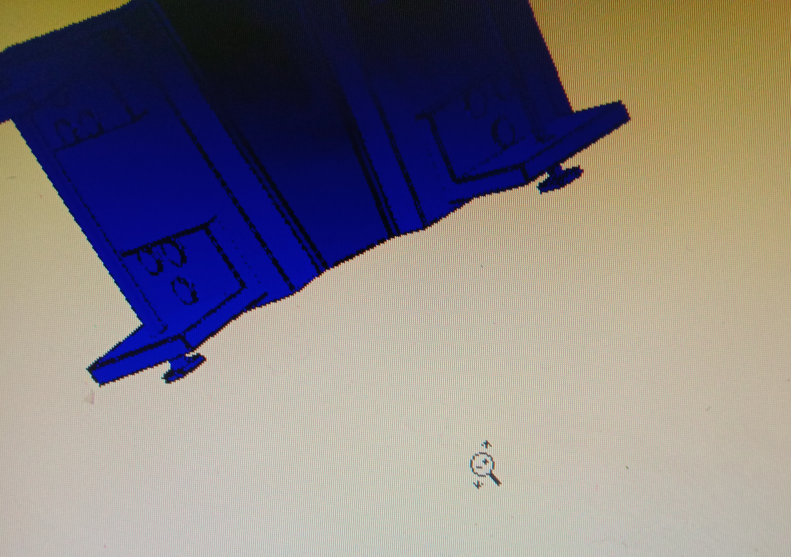


Mouse moving keeping mouse wheel will pan product image.

2. If, while keeping mouse wheel, click right mouse button, rotate mode switches on. When rotate mode is switched on, keep mouse wheel and right mouse button. Move mouse keeping mouse wheel and right mouse button to rotate:

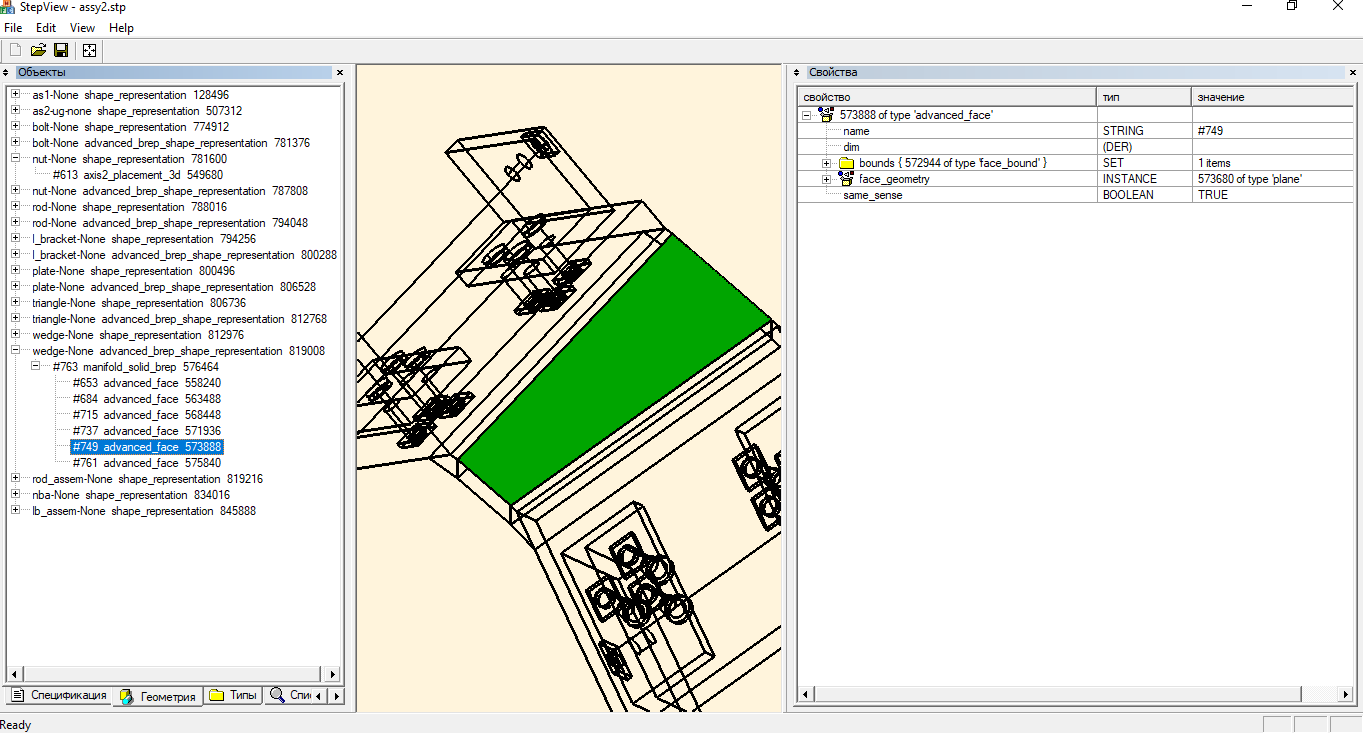


3. After that when right mouse button released, continuing keeping mouse wheel, zoom mode switches on. Move mouse keeping mouse wheel to zoom image:



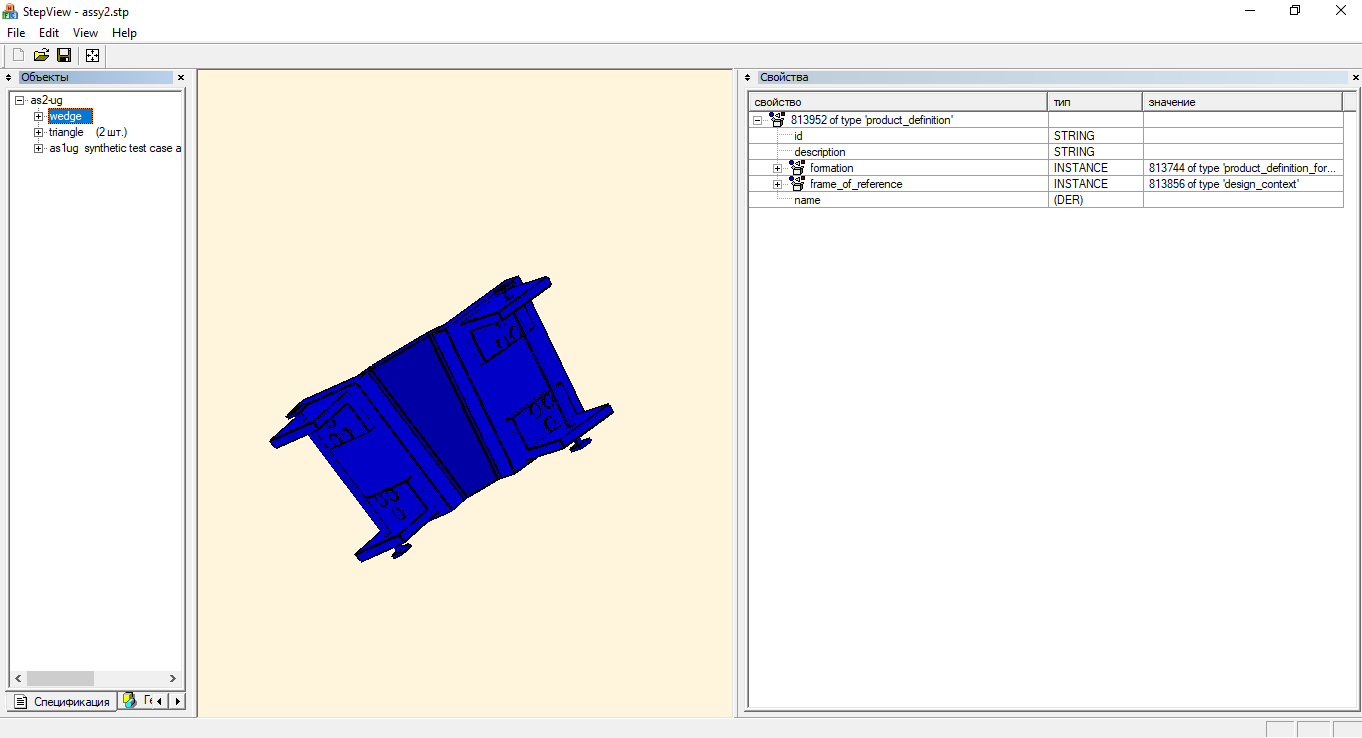
## Face highlighting

There is useful functionality, implemented for faces only. When some face is selected with some way in the right window, this face is highlighted with green in the middle graphic window. All other faces become invisible.



# Application-specific window

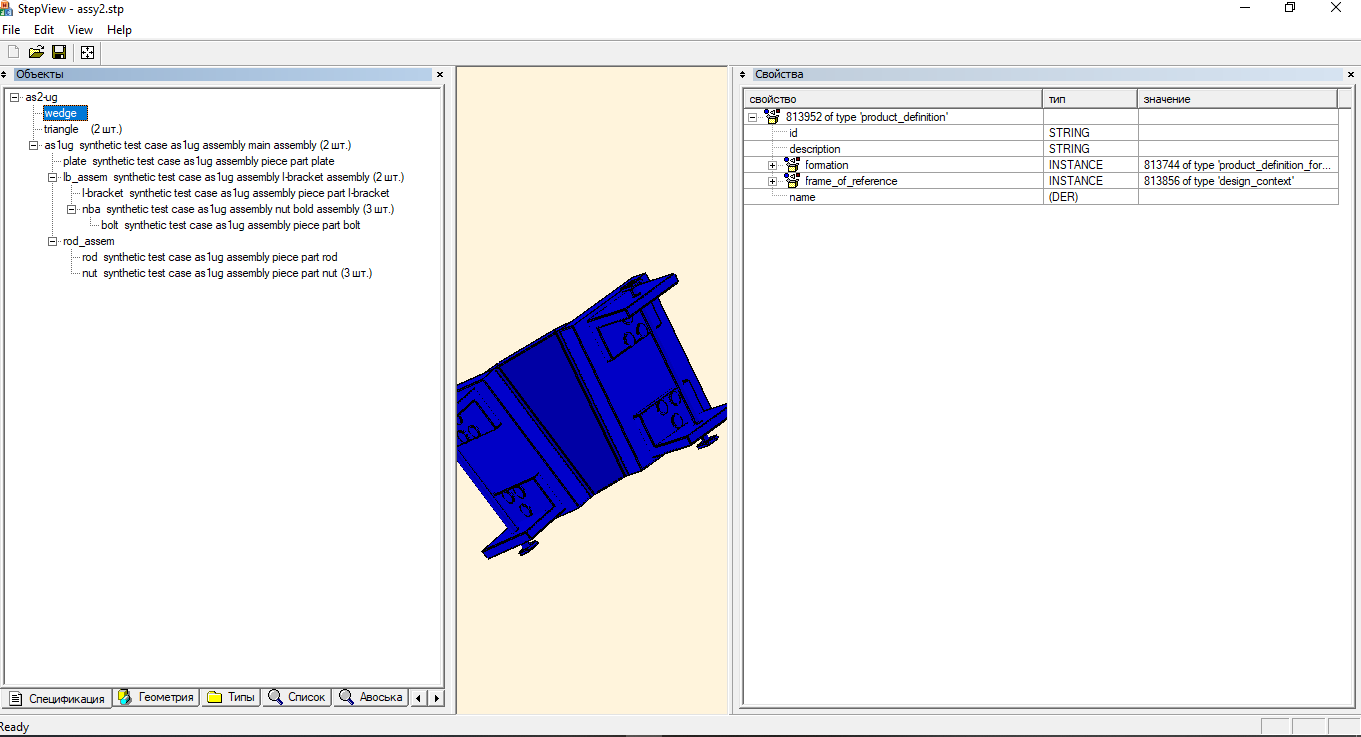
There are tabs in application-specific window. Tabs allow investigate STEP file content from specific application domains point of view.



When some item, i.e. entity instance, is selected in application-specific window, this entity instance appears in browser window

Tabs

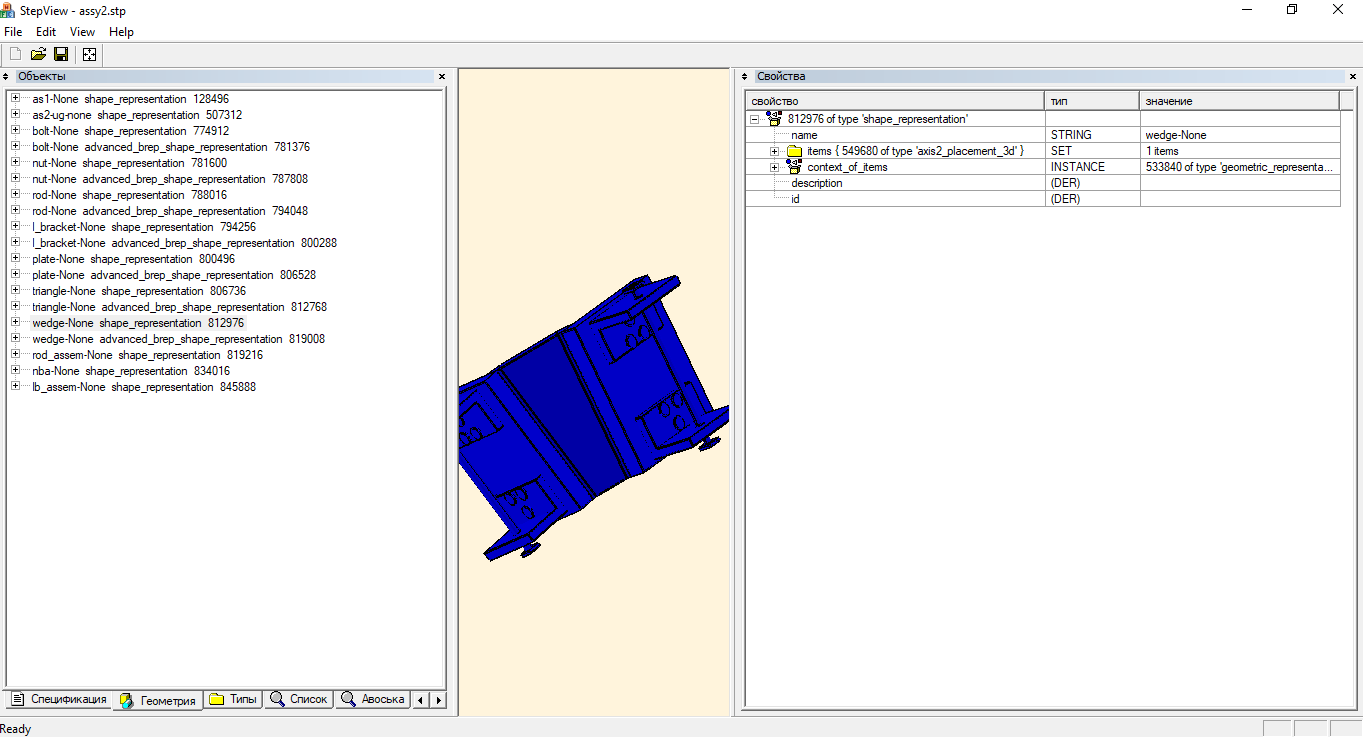
# Tab BOM («Спецификация»)

This application domain allows investigate product structure. Count of every assembly component in assembly is displayed

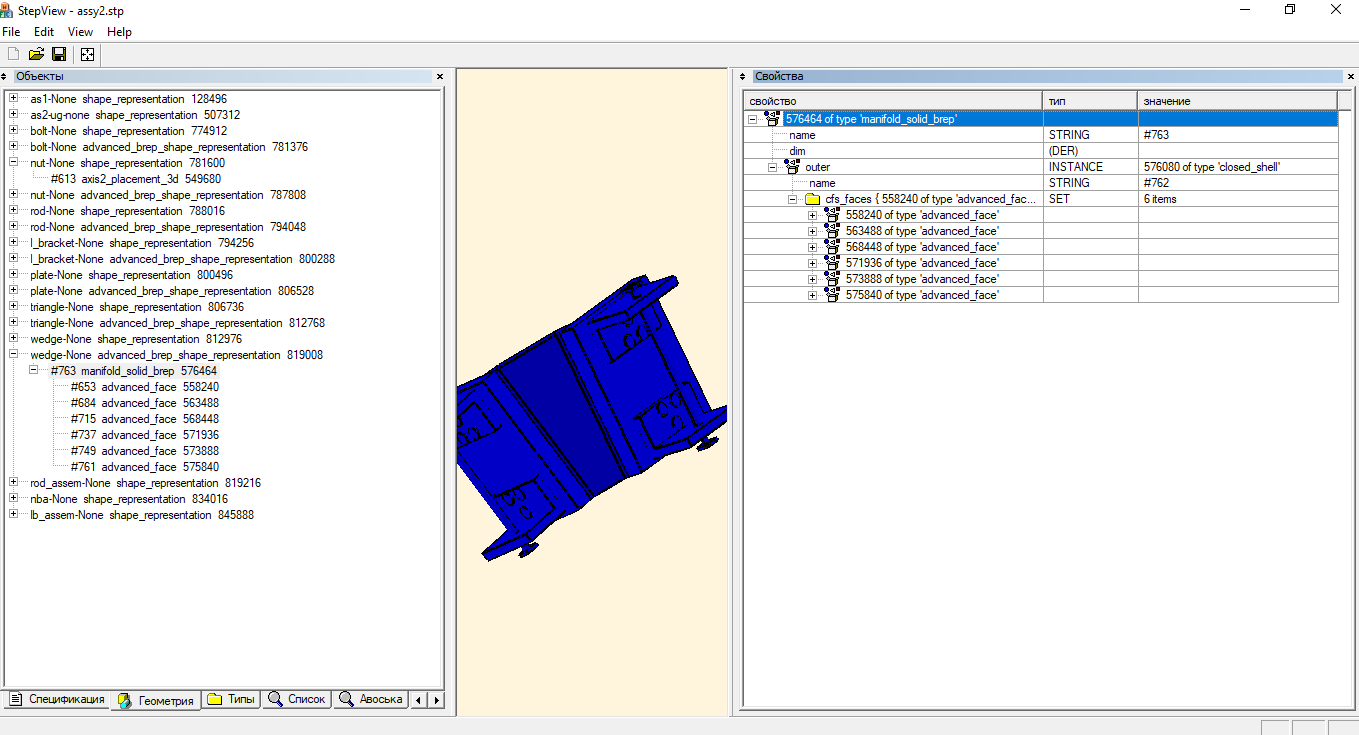
Number of components

## Tab Geometry («Геометрия»)

This application domain allows investigate shape geometry of product. The list of instances of shape\_representation and its subtypes appears when Geometry tab is switched on:

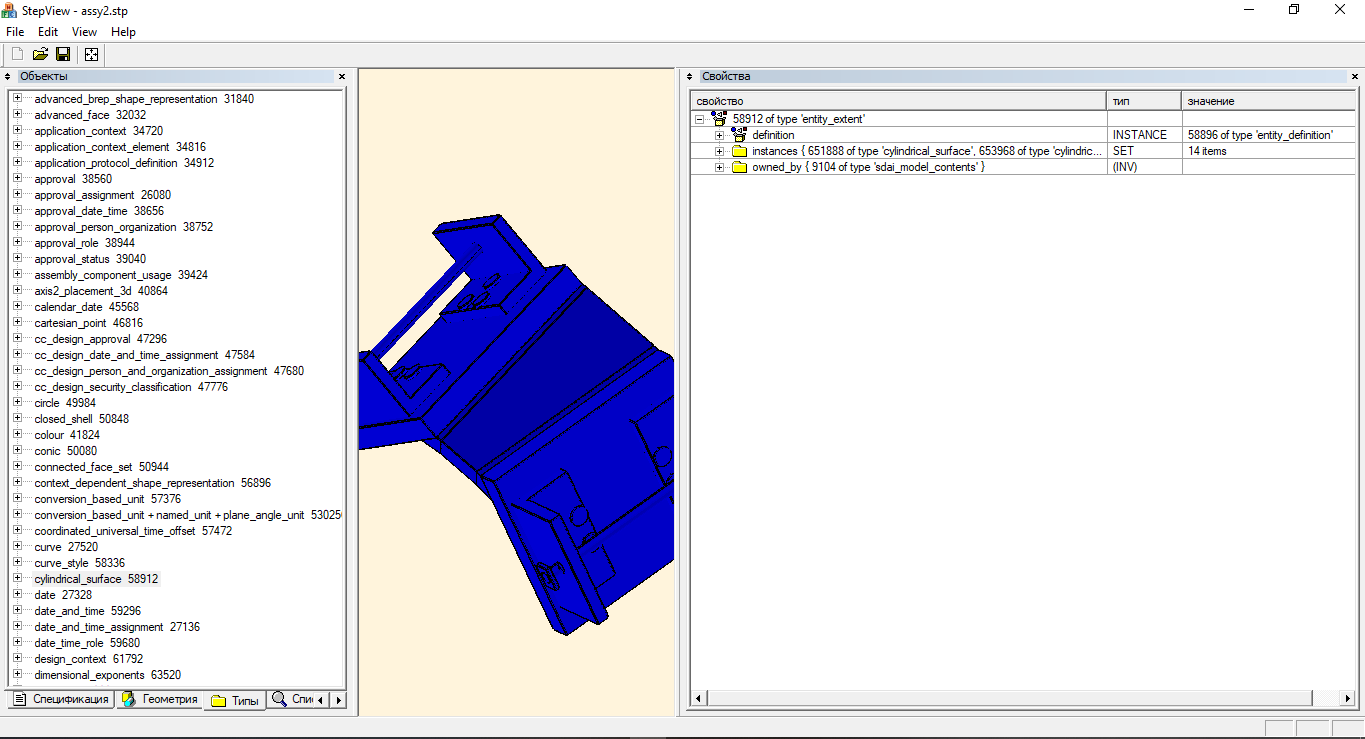


Every shape representation can be expanded in the left window. manifold\_solid\_brep is shown with simplified mode – compare its expansion in left and right windows.

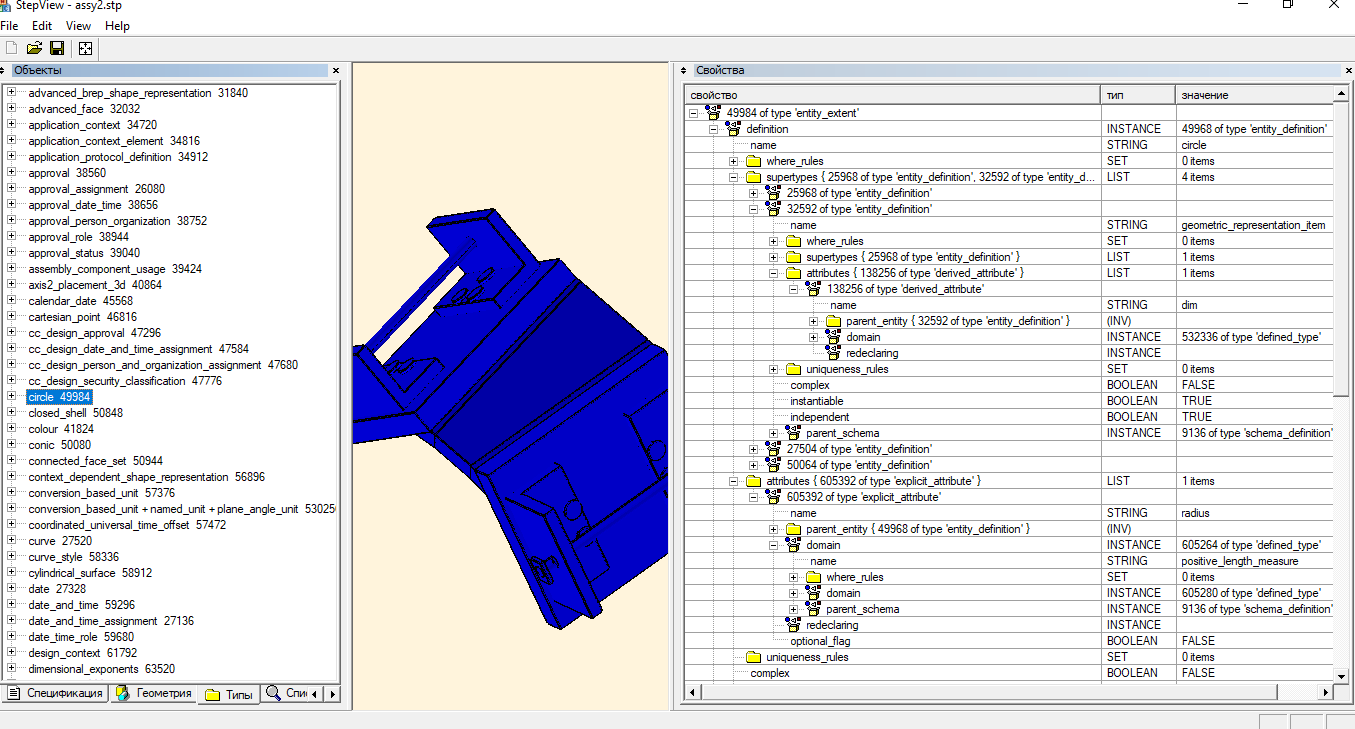


## Tab Folders («Типы»)

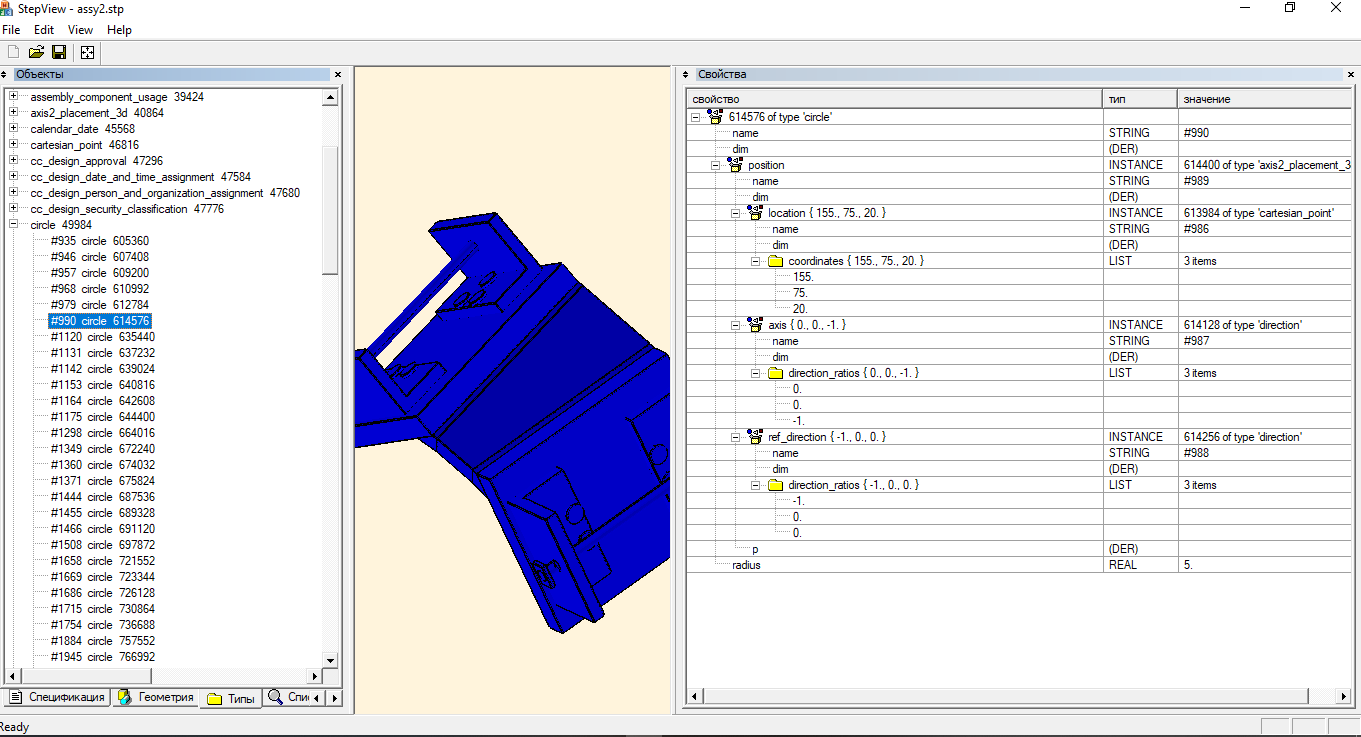
This application domain allows investigate populated folders of STEP model. The list of populated folders appears when this tab is switched on.



When folder is selected in the left window, folder design can be investigated in the right browser window:



When folder content is expanded in the left window, every entity instance from folder can be investigated in the right browser window:

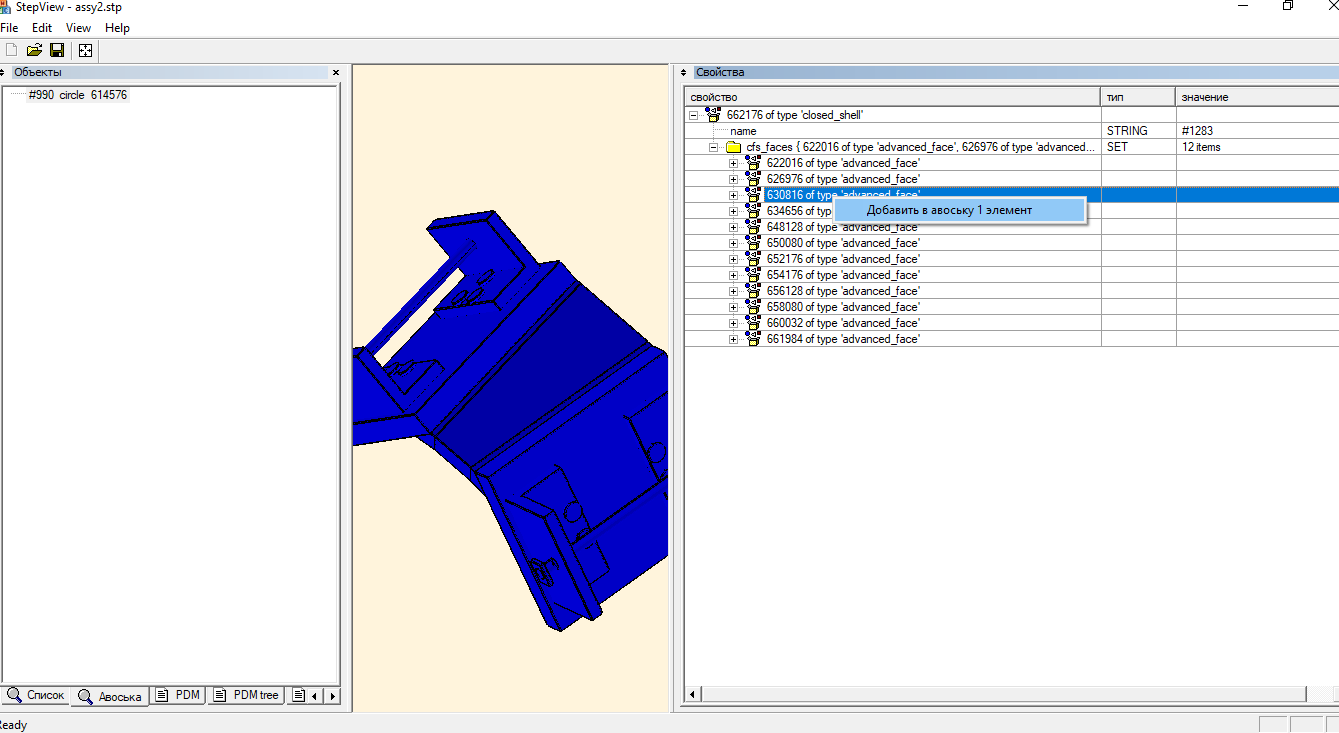


## Tab List («Список)

Does not work now.

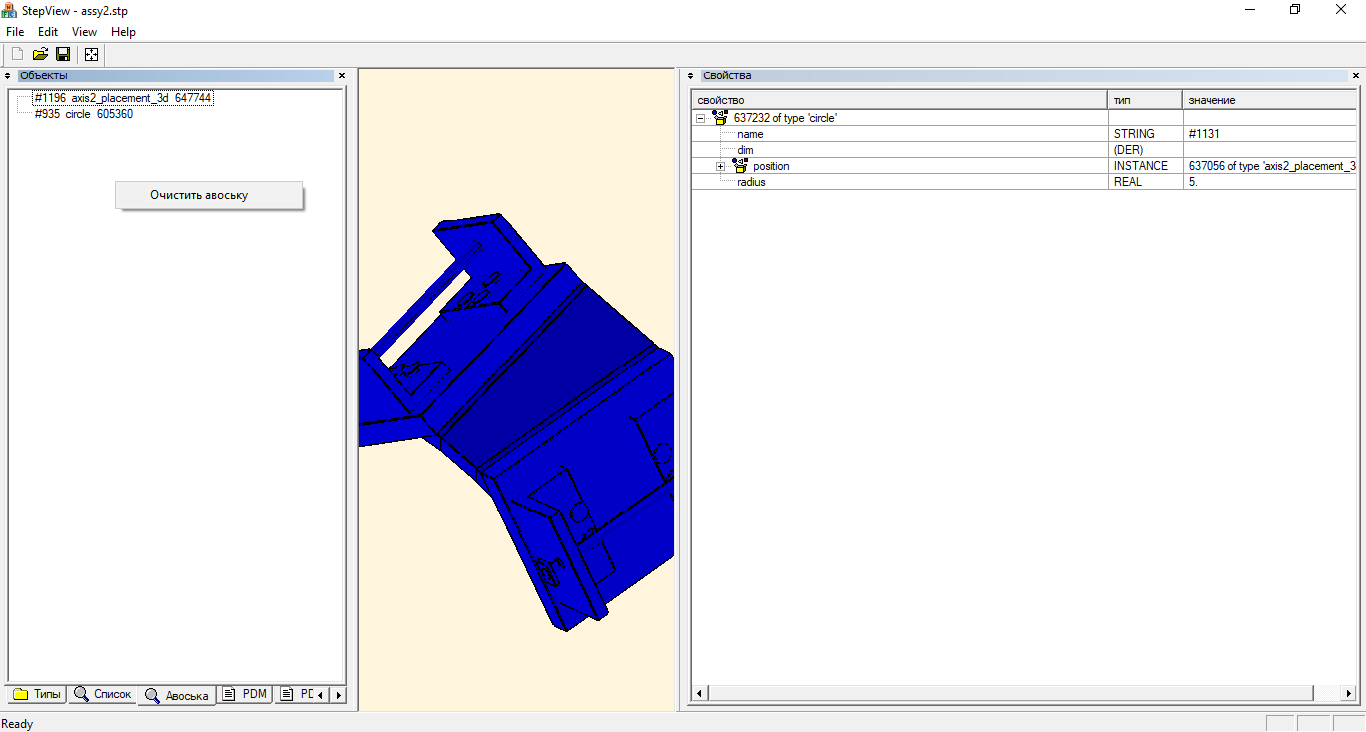
## Tab Bag («Авоська»)

This application domain allows view arbitrary set of entity instances. Entity instances are added to Bag via context menu in the right browser window:

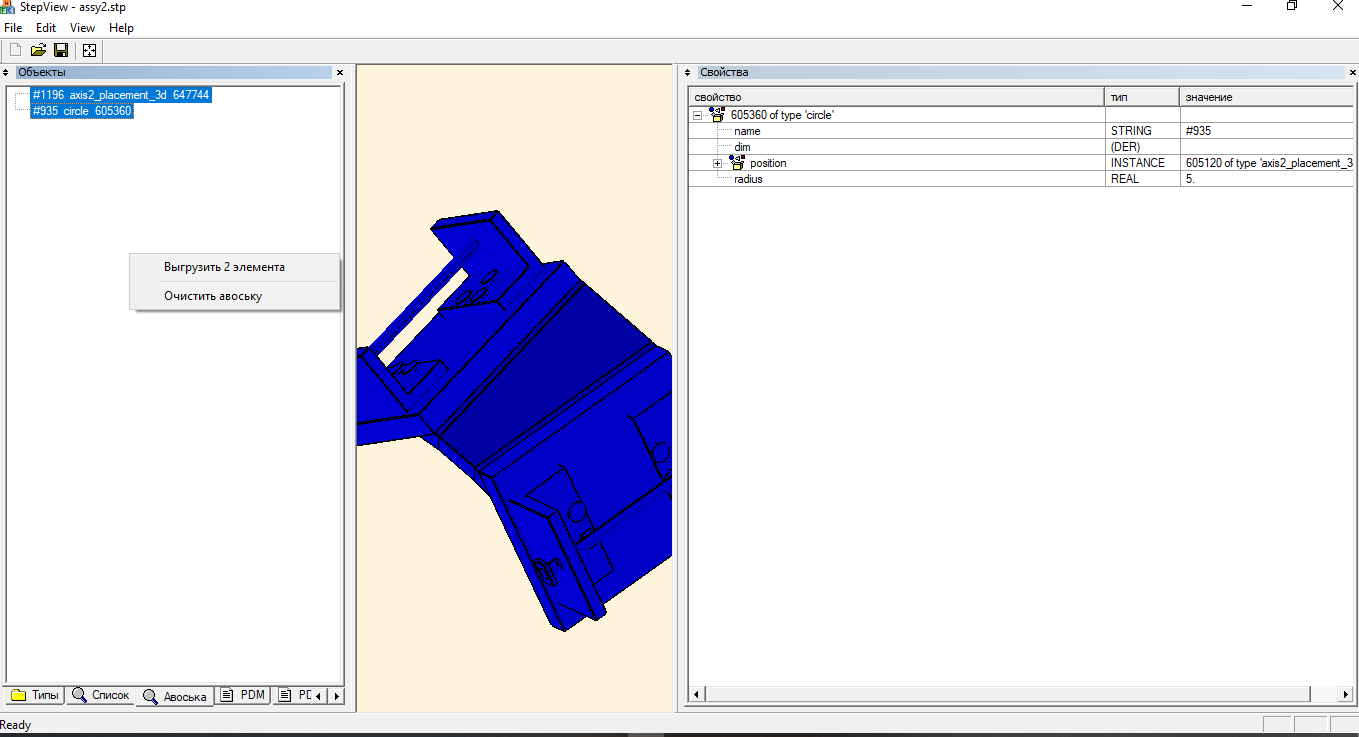


There is context menu in the Bag tab. Menu content depends on Bag tab content.

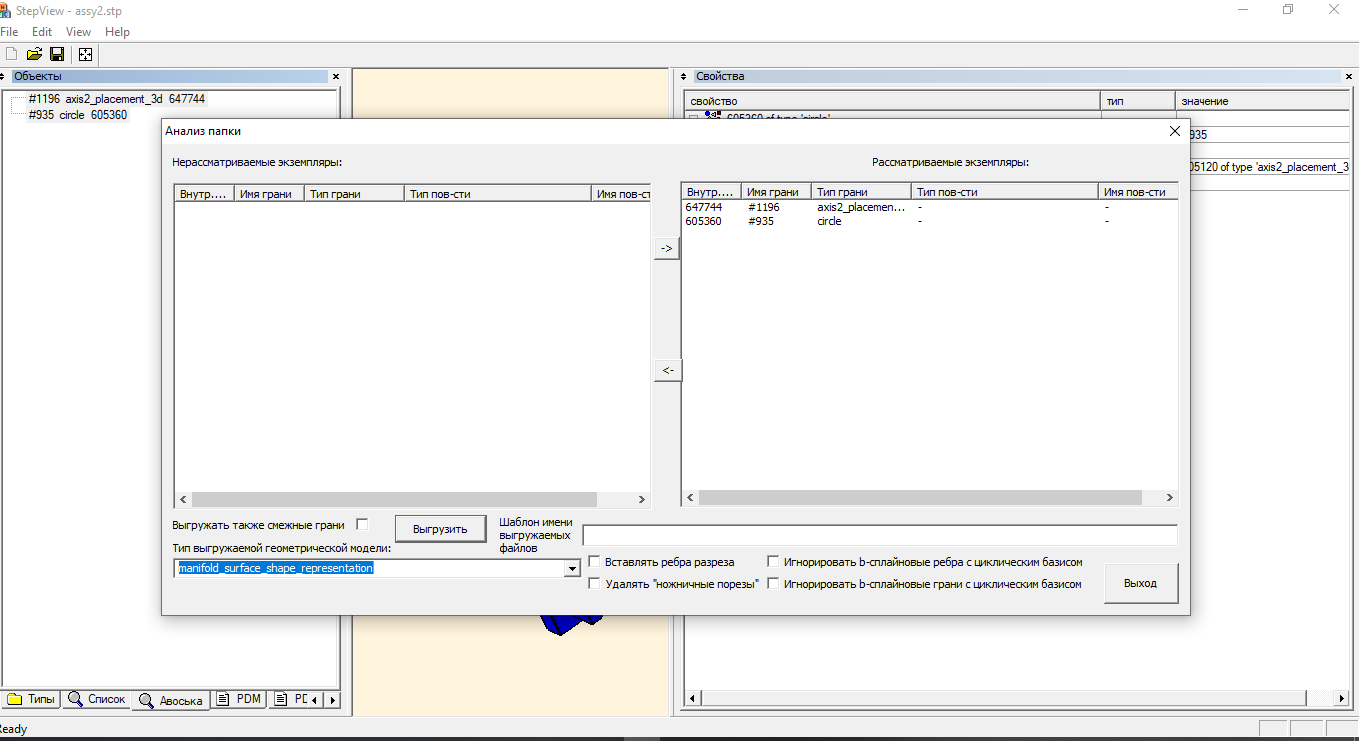
If no instances selected in the Bag tab, the only menu item is “Clear Bag” («Очистить авоську»):



When some entity instances are selected, new menu item “Export n elements” («Выгрузить n элементов») appears, allowing export selected instances to new STEP exchange file:



If Export menu item is selected, pop-up window appears:



Only export of advanced faces is meaningful. If circle instance are exported, for example, file content is wrong and meaningless:

ISO-10303-21;

HEADER;

FILE\_DESCRIPTION(('THIS FILE CONTAINS SOME STEP INSTANCES'),'1');

FILE\_NAME('assy2a\_0000001.stp','2020-04-26T14:05:40',

('Unknown'),

('Unknown'),

'Crp STEP kit utility 1.0',

'Crp EXPRESS compiler 1.0',

'');

FILE\_SCHEMA(('AP203\_CONFIGURATION\_CONTROLLED\_3D\_DESIGN\_OF\_MECHANICAL\_PARTS\_AND\_ASSEMBLIES\_MIM\_LF'));

ENDSEC;

DATA;

#1=CIRCLE('#935',$ /\* Data error!!! Unresolved reference!!!\*/,5.0);

#2=SHAPE\_DEFINITION\_REPRESENTATION(#3,#7);

#3=PRODUCT\_DEFINITION\_SHAPE($,$,#4);

#4=PRODUCT\_DEFINITION($,$,#5,$);

#5=PRODUCT\_DEFINITION\_FORMATION\_WITH\_SPECIFIED\_SOURCE('0',$,#6,

.NOT\_KNOWN.);

#6=PRODUCT('Check geometry part','Check geometry part',$,$);

#7=MANIFOLD\_SURFACE\_SHAPE\_REPRESENTATION($,(#8,#12),$);

#8=AXIS2\_PLACEMENT\_3D($,#9,#10,#11);

#9=CARTESIAN\_POINT($,(0.0,0.0,0.0));

#10=DIRECTION($,(0.0,0.0,1.0));

#11=DIRECTION($,(1.0,0.0,0.0));

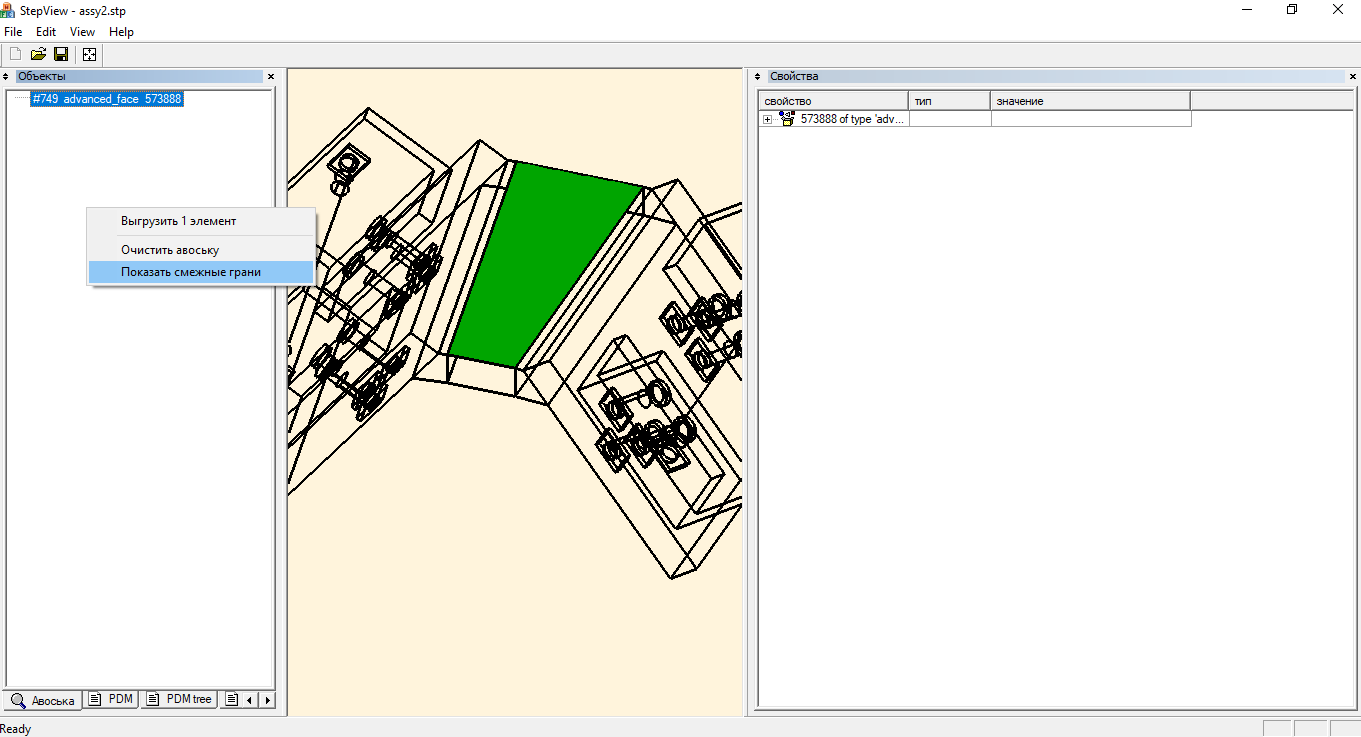
#12=SHELL\_BASED\_SURFACE\_MODEL($,(#13));

#13=OPEN\_SHELL($,(#1));

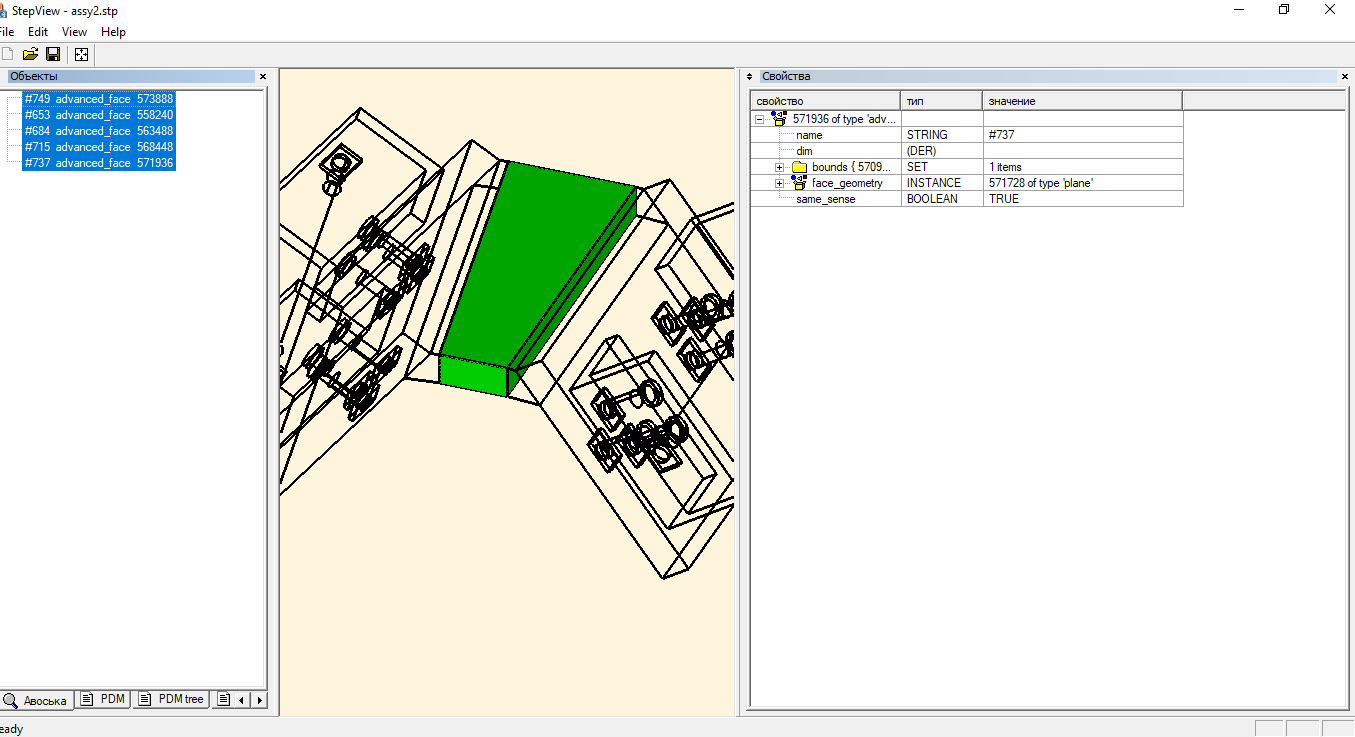
ENDSEC;

END-ISO-10303-21;

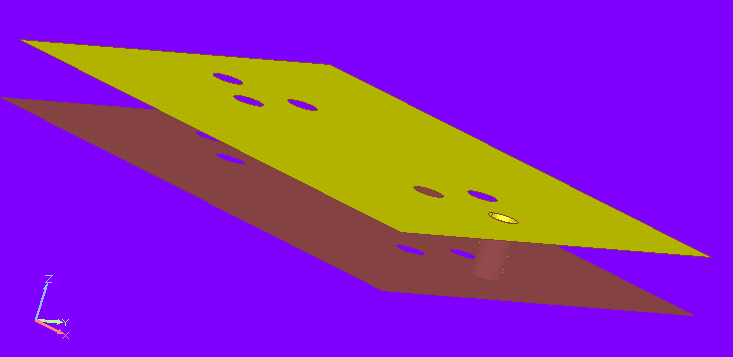
If advanced\_face instance is selected, third menu item – “Show adjacent faces” («Показать смежные грани») is added to the context menu:



If this menu item is selected, adjacent faces will be added to the bag. These faces will be highlighted with green too:

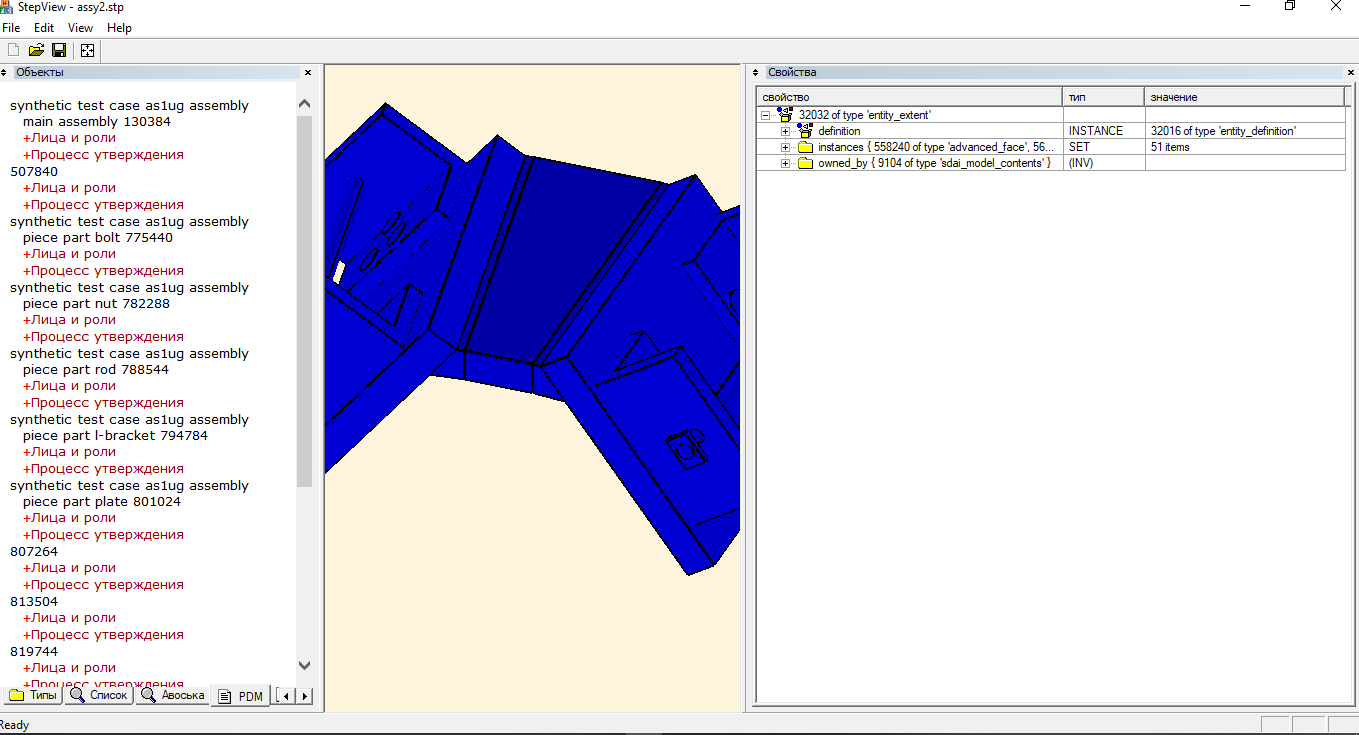


When faces are exported, STEP model becomes right and meaningful and can be imported into any CAD system:



## Tab PDM

This application domain allows investigate instances of product entities contained in imported STEP model from PDM point of view. When this tab is switched on, the list of product entity instances appears:

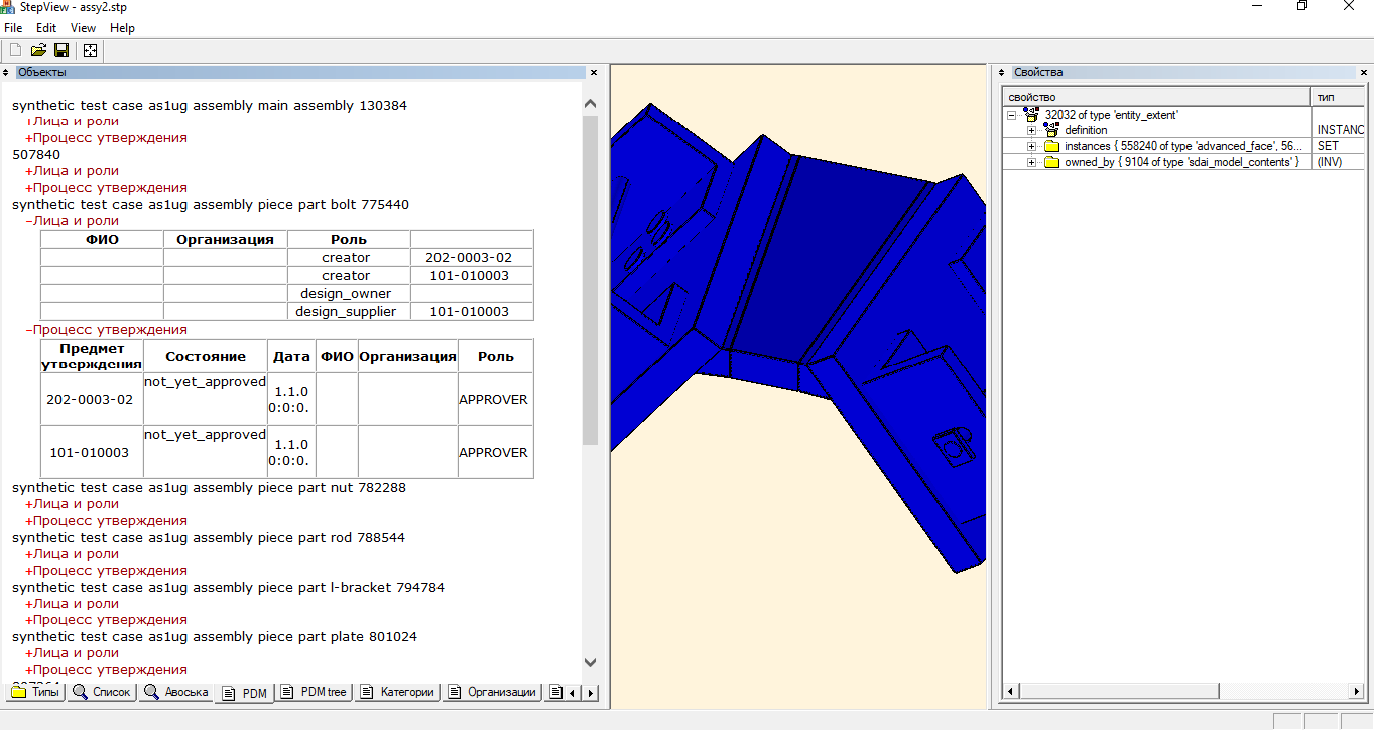


Process of approval

Persons and their roles

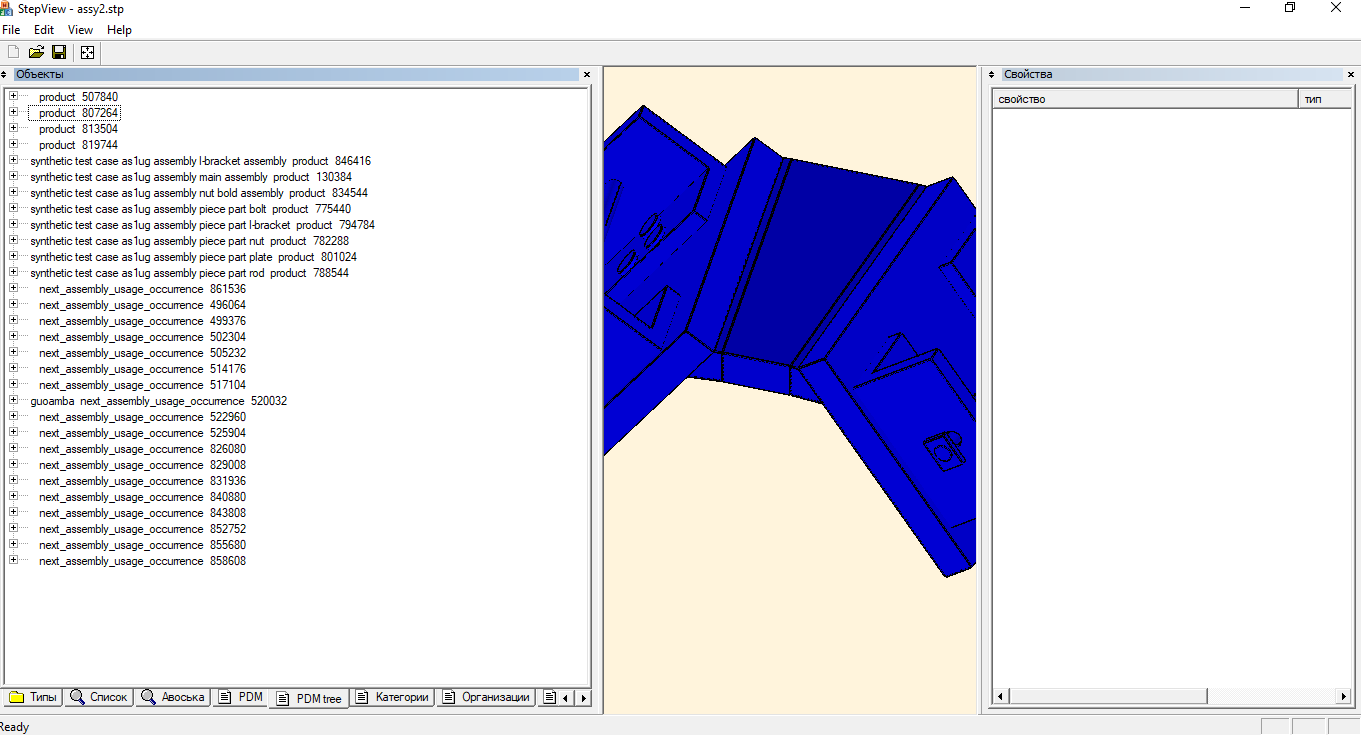
Node of product structure

“Persons and their roles” and “Process of approval” items can be expanded:



## Tab PDM tree

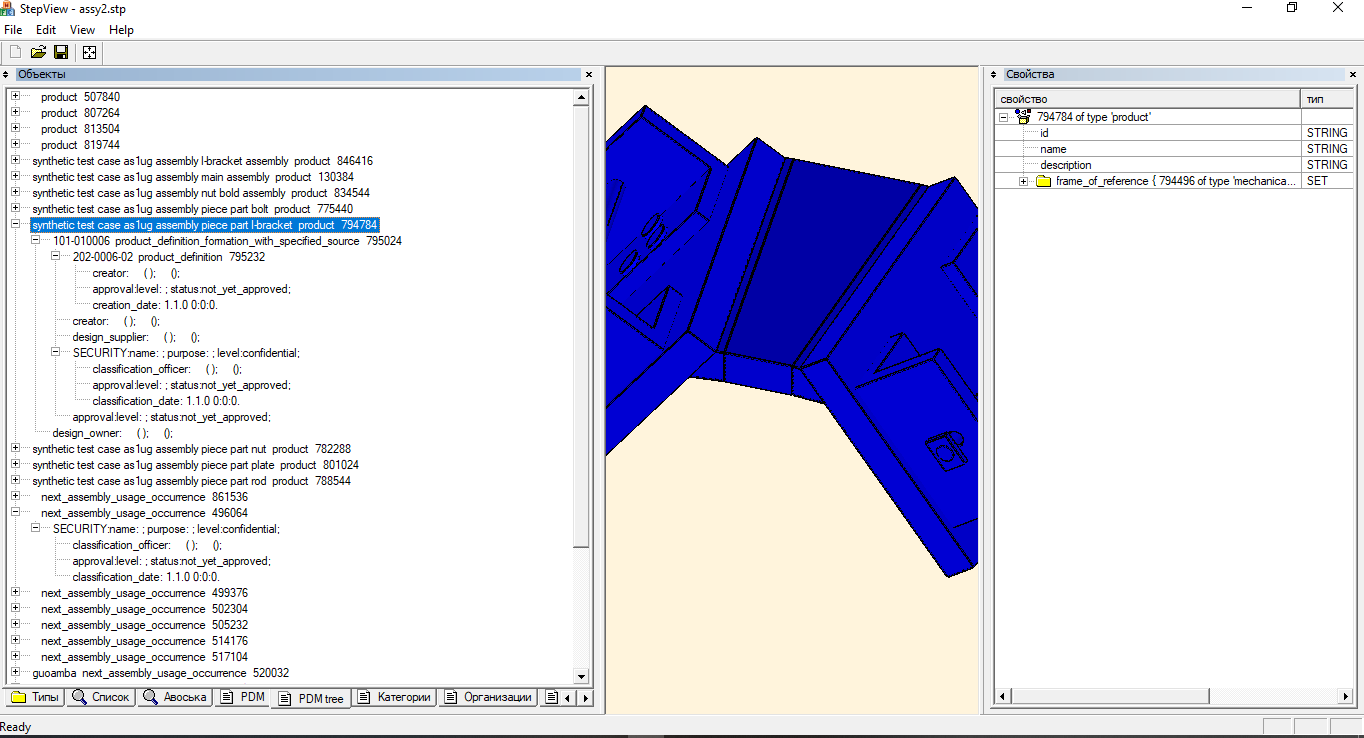
This application domain allows investigate instances of all PDM-relevant entities contained in imported STEP model. When this tab is switched on, the list of product-relevant entity instances, including edges of design graph appears:



Edge of design graph

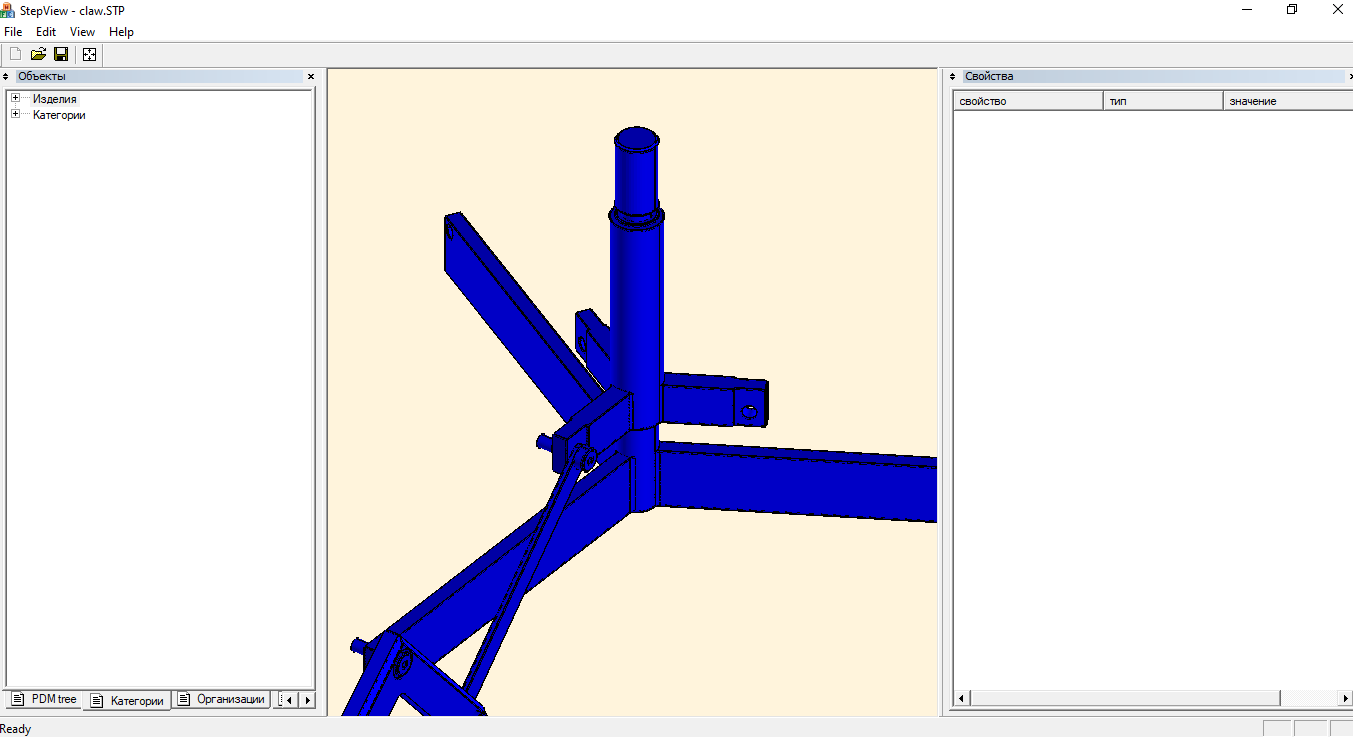
Node of design graph

Every item can be expanded. The full description of item from PDM point of view appears after expansion:

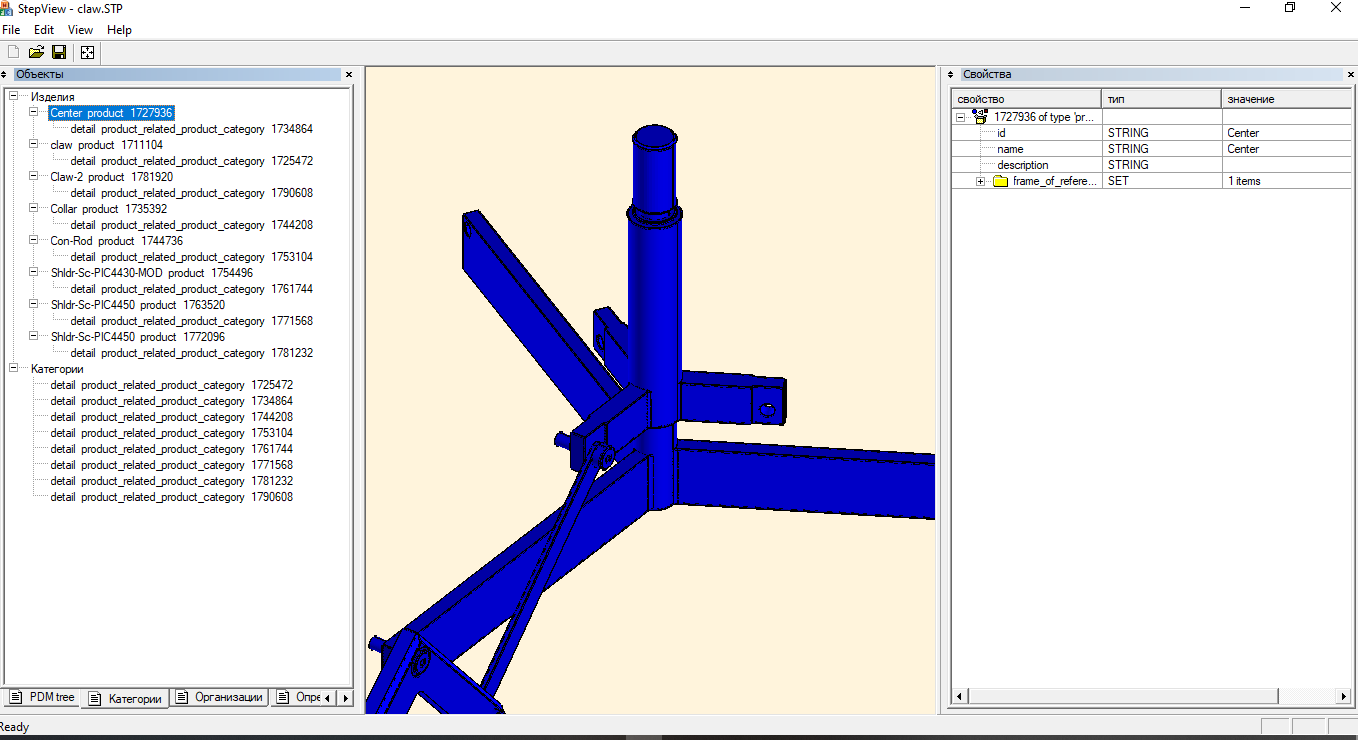


## Tab Categories («Категории»)

When this tab is switched on, two items – “Products” and “Categories” appear:

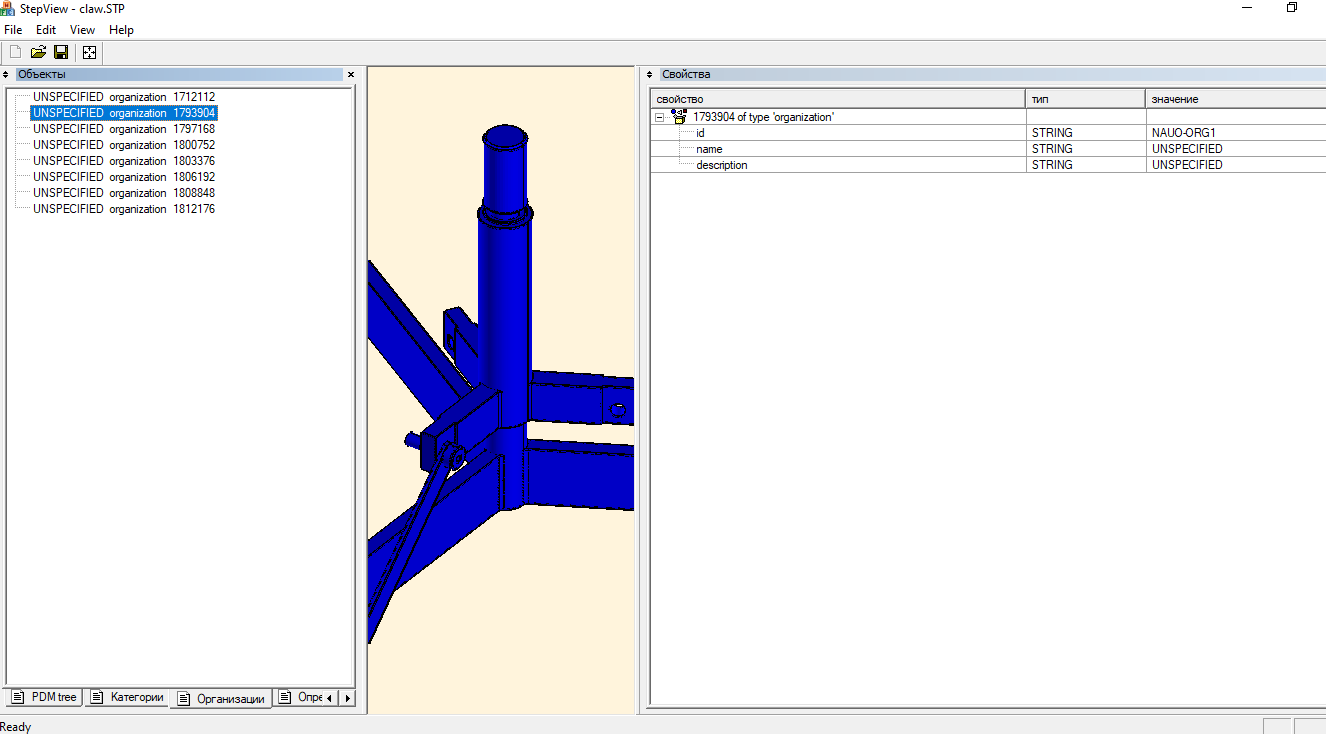


These items can be expanded:



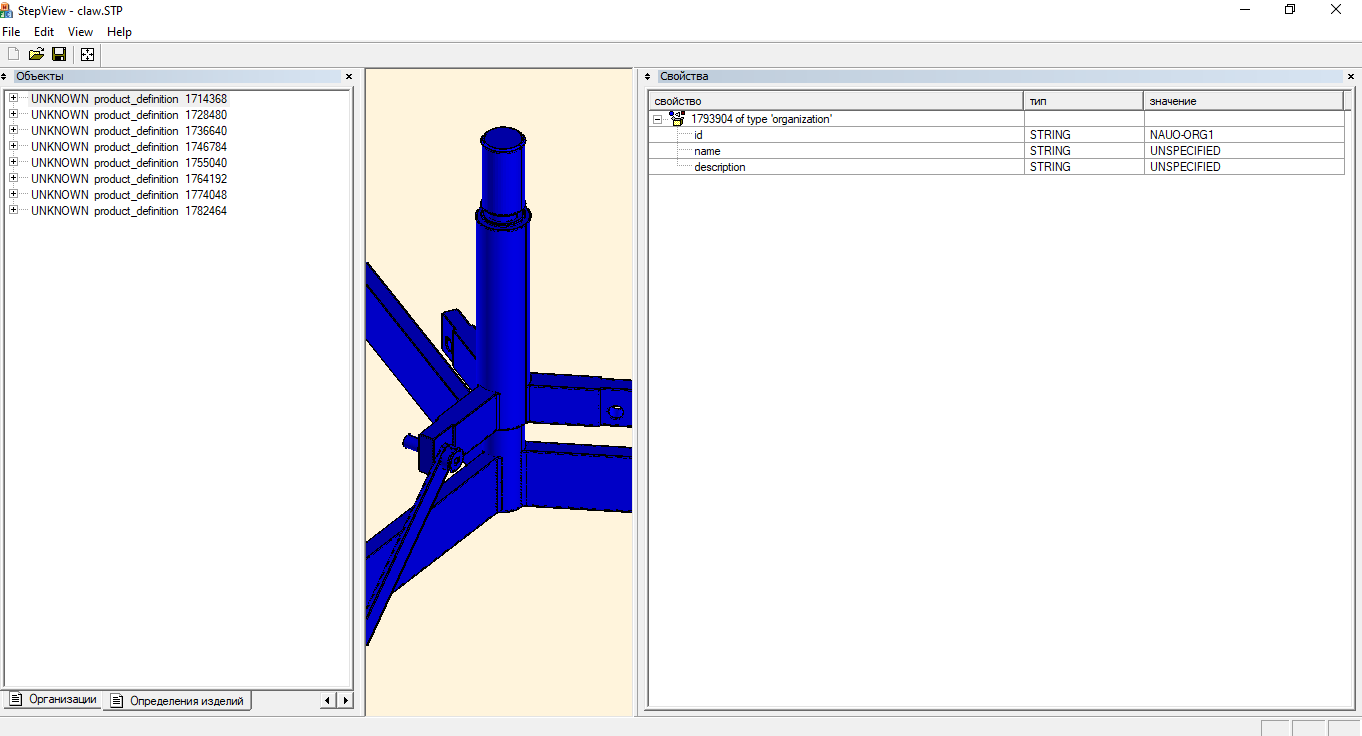
## Tab organizations («Организации»)

When this tab is switched on, the list of organizations, referenced in STEP model, appears:

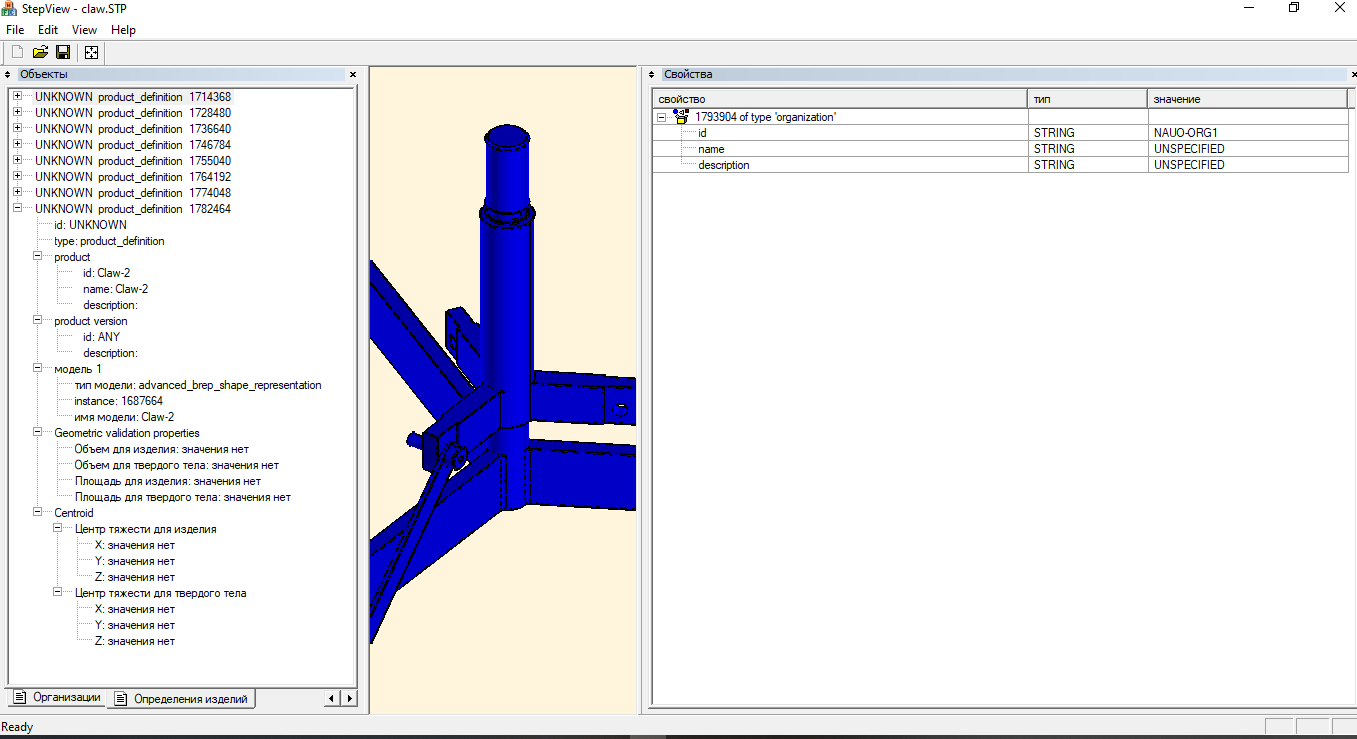


## Tab Product definitions («Определения изделий»)

When this tab is switched on, the list of product\_definition instances appears:



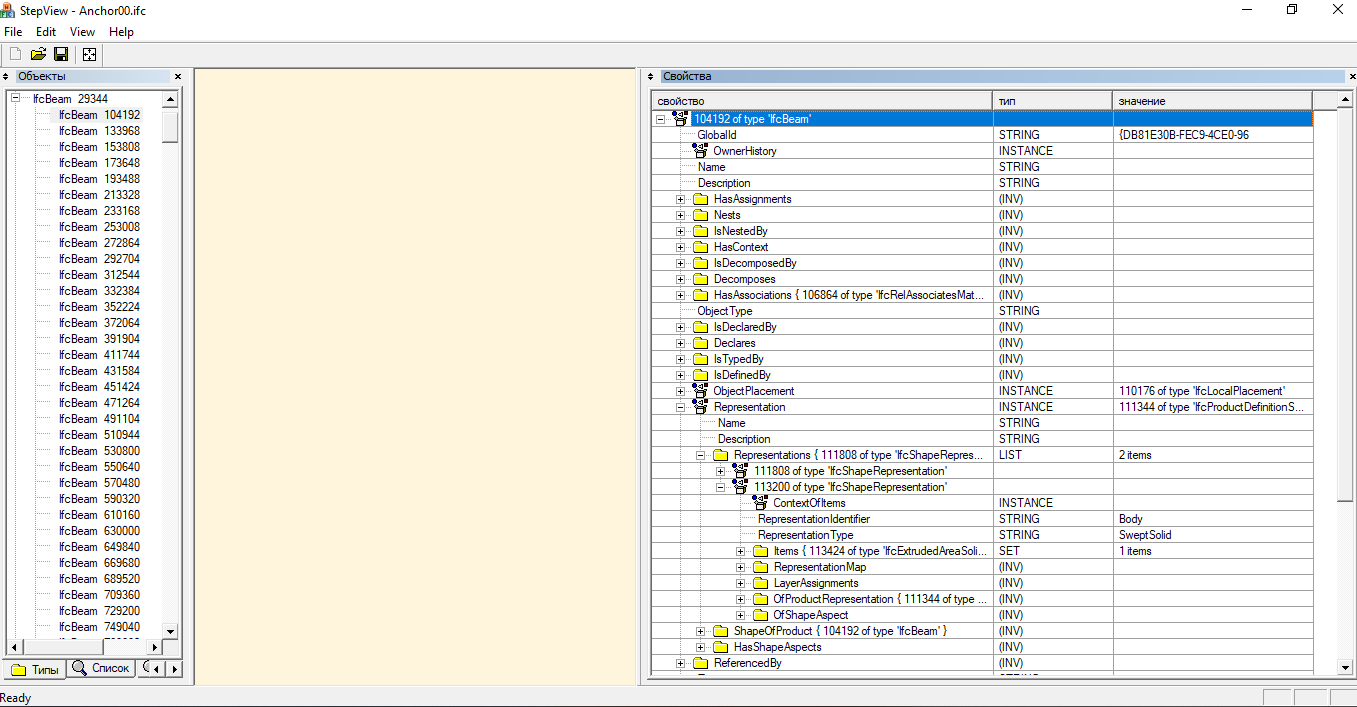
Every list item can be expanded. The full description of particular product appears:



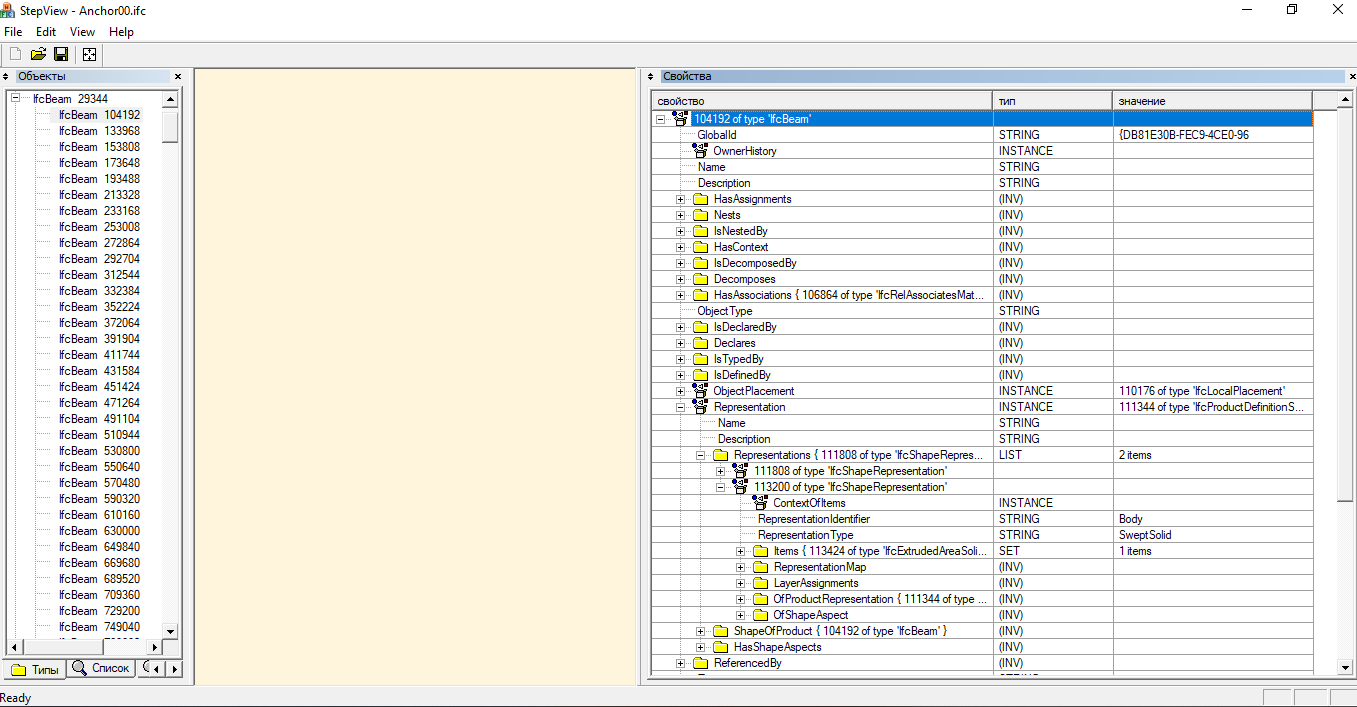
# ISO 16739 IFC Complement

All STEP-related functionality excluding graphics functionality is accessible for IFC part21-like model.

Graphic functionality requires additional software development, since there are differences between STEP and IFC geometry.



What evolution can be anticipated?



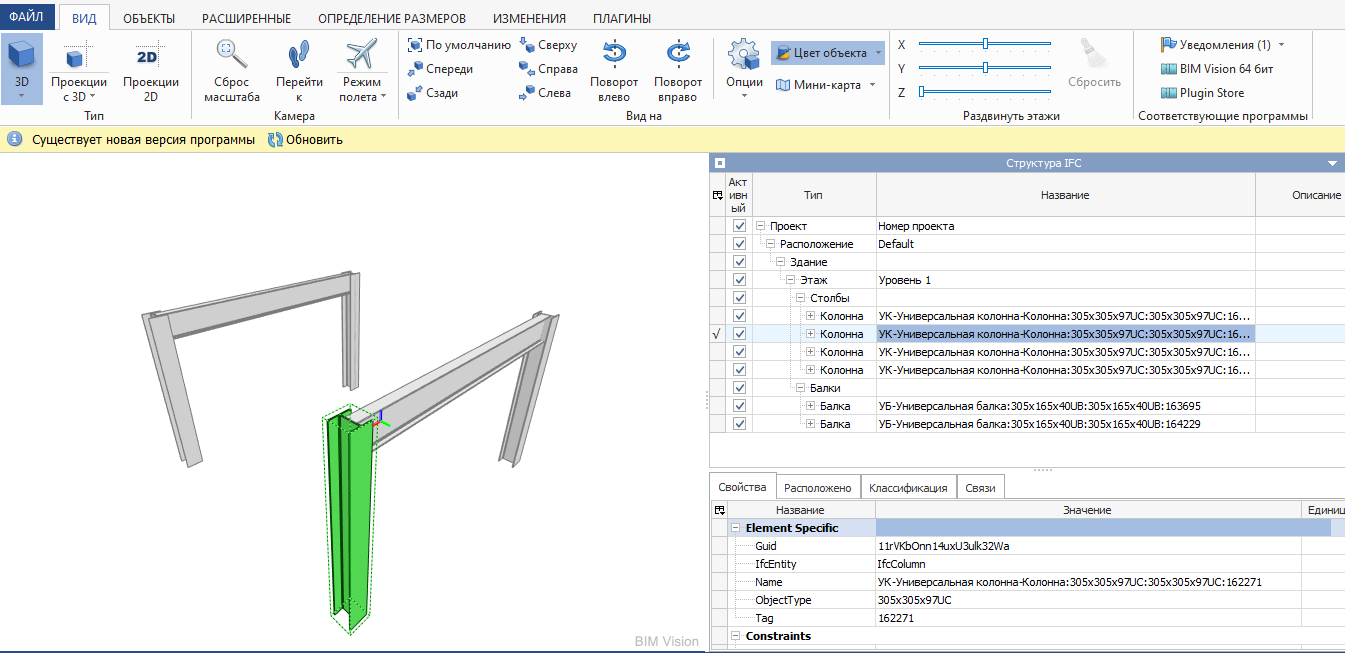
Add BIM-related tab (similar to various just implemented tabs described in the main User manual).

Add editing functionality (common with STEP).

Add graphics functionality for IFC models similar to functionality for STEP models (see above remark).

Additional BIM-related tab 1

Additional BIM-related tab 2



1. One more less valuable behavior feature: there is no selection of file extensions, so all files appear in this dialog. [↑](#footnote-ref-1)