Printed Documentation

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Ortho Control Panel 2012

User Manual

Preface

3Shape Ortho Control Panel™ is the primary control tool for all the applications of 3Shape Ortho Systems: ScanItOrthodontics™ and ScanIt Ortho Impression™, OrthoAnalyzer™, ApplianceDesigner™ that allows you to view and manipulate various basic system settings and controls, such as specifying data folders, tooth notation system, analysis tools and licensing systems and the relevant construction elements.

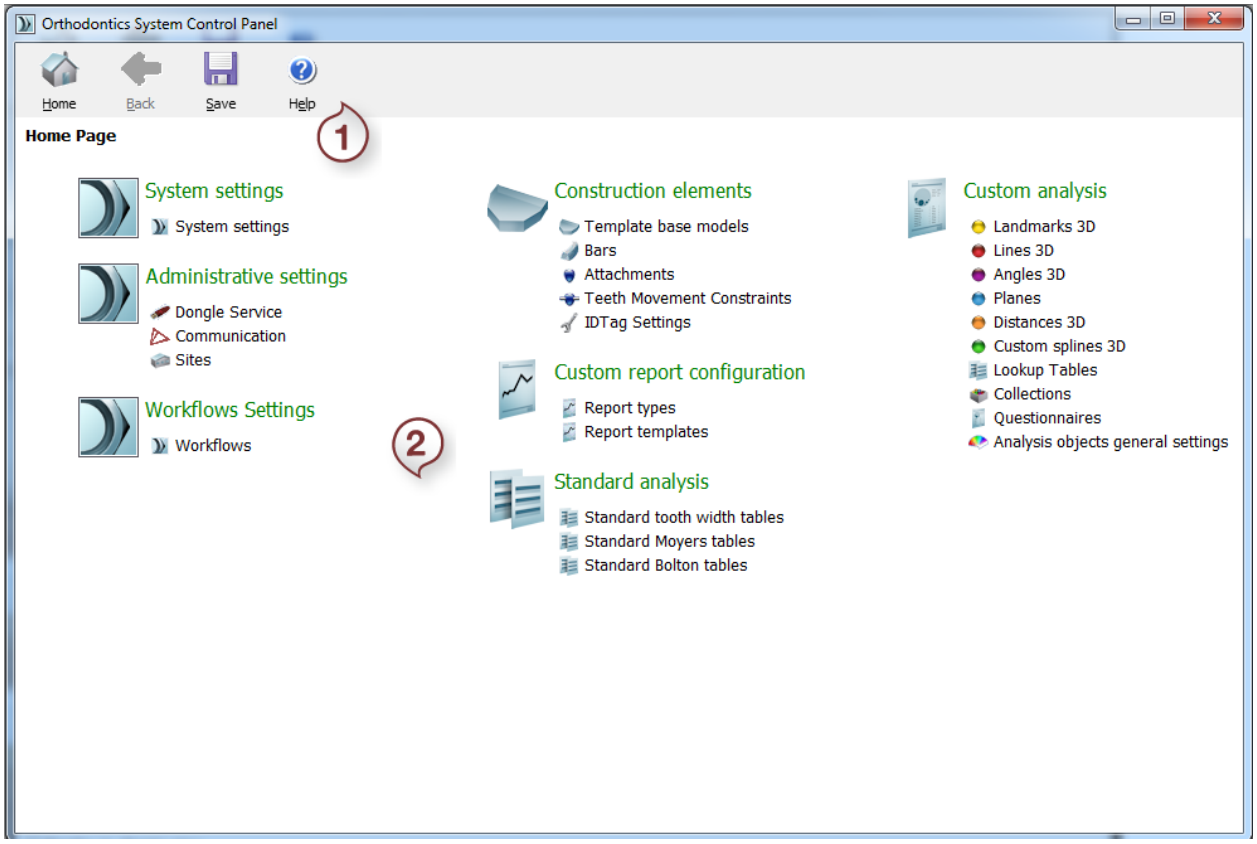
OS-OCP-1.4.0.10-A-EN

1 The OCP User Interface

1 The Ortho Control Panel User Interface

Ortho Control Panel employs a Microsoft Windows™ -based graphical user interface that allows you to view the settings modifications on screen while they are being made.

Ortho Control Panel is started by double-clicking the Ortho Control Panel desktop icon or via the Windows™ Start menu: *Start → All Programs → 3Shape → 3Shape Ortho Control Panel*. When the application is started, there appears a main window of the program displayed on the image below. It consists of:



1. *Control toolbar*
2. *Main window*

A detailed description of the toolbars is provided in sections below.

1.1 Control Toolbar

The Control toolbar contains four basic control functions:

	Displays the home page.
	Brings you back to the previous step.
	Saves the current changes in the settings.
	Opens the user manual.

2 Executing the Program

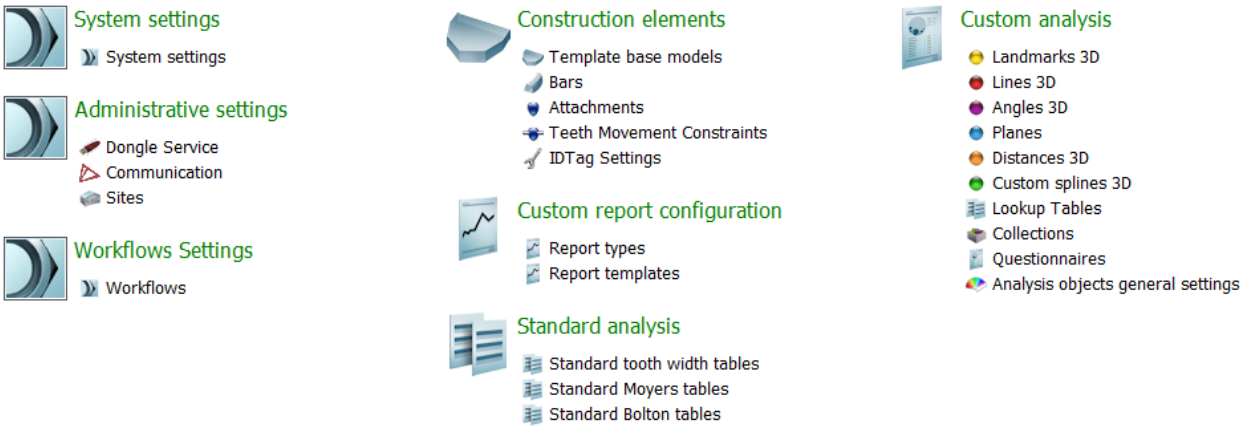
2 Executing the Program

3Shape Ortho Control Panel is started by double-clicking the Ortho Control Panel desktop icon or via the Windows™ Start menu: *Start → All Programs → 3Shape → 3Shape Ortho Control Panel*. When the application is started, there appears the screen described and illustrated in the previous chapter The Ortho Control Panel User Interface.

At this stage, there are options available for you as a starting point:

- **System settings**
- **Workflow settings**
- **Administrative settings**
- **Construction elements**
- **Custom report configuration**
- **Standard analysis**
- **Custom analysis**

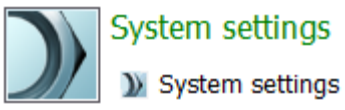
To continue, press the icons in the Main window:



Note: For any change to the Ortho Control Panel to take effect, it needs to be saved in the Ortho Control Panel and the relevant application (i.e. ApplianceDesigner, ScanItOrthodontics, ScanItOrthoImpression or OrthoAnalyzer) has to be restarted.

2.1 System Settings

2.1 System Settings



As soon as you click the **System Settings** icon, the main window opens up displaying six tabs with different system settings available for editing. You will have to scroll down to view all of them:

- **OrthoAnalyzer**
- **ApplianceDesigner**
- **ScanItOrthodontics**
- **ScanItOrthoImpression**
- **Data folder**
- **Export**
- **Miscellaneous**
- **Dongle license server**

The **Tasks** menu displays the three main tasks currently available for completion:

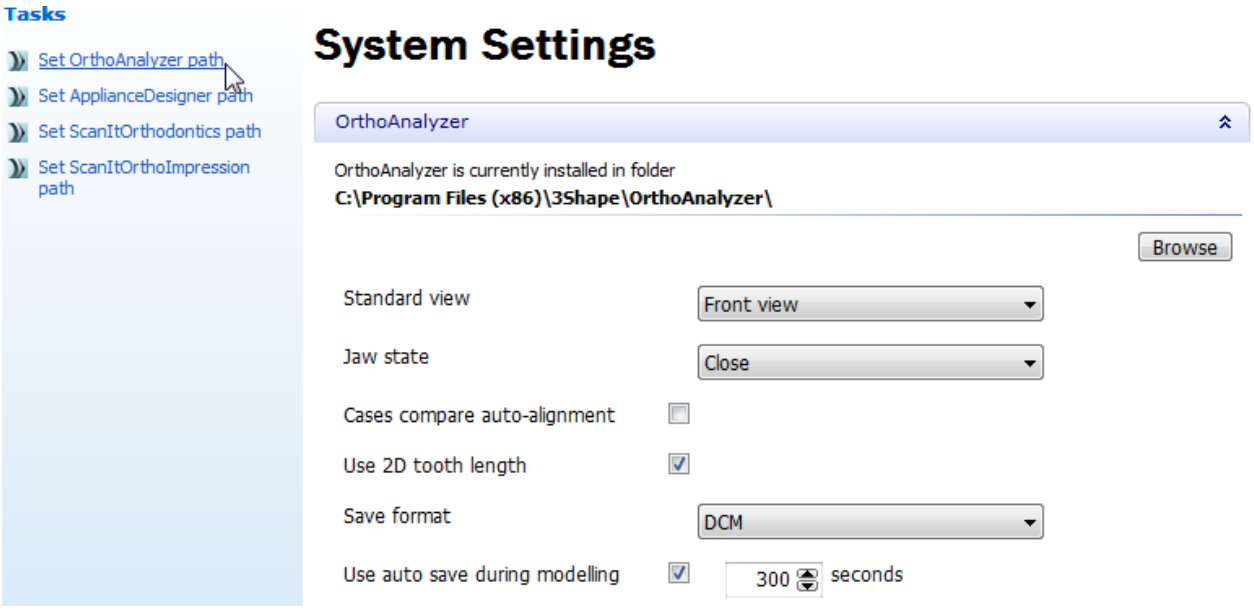
- **Set OrthoAnalyzer path**
- **Set ScanItOrthodontics path**
- **Set ScanItOrthoImpression path**
- **Set ApplianceDesigner path**

Follow the hints provided in the following chapters to complete these tasks.

2.1.1 OrthoAnalyzer

View the **OrthoAnalyzer** tab of the *System Settings* window identifying the path for the OrthoAnalyzer application in it (see image below).

Click **Set OrthoAnalyzer path** on the **Tasks** menu or click the ***Browse*** button to identify the path. Set the OrthoAnalyzer path in the *Browse for folder* window that appeared. The default path would be *C:\Program Files\3Shape\OrthoAnalyzer.*



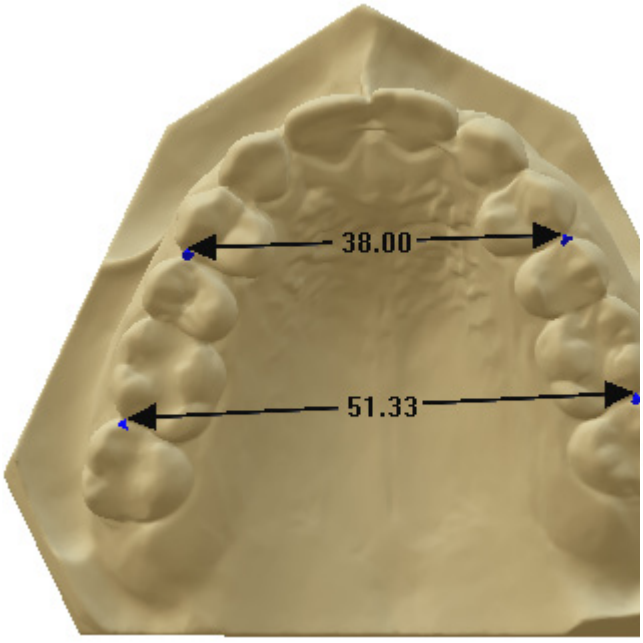
OrthoAnalyzer settings

In this section you can make the following application settings:

Option	Function
Ortho Analyzer	The path to the folder, where Ortho Analyzer is installed. Use ***Browse***

folder	to change it.
Standard view	Allows you to select from the drop-down menu the default position of the model during the modelling process.
Jaw state	Sets the default position of the jaw.
Cases compare auto-alignment	Allows the **Model set compare** function in Ortho Analyzer to automatically run an alignment algorithm on the two models when starting the function.
Use 2D tooth length	If checked, uses the traditional two-dimensional measuring system, which would enable measuring dental distances using the user point-of-view as a measuring plane **(1)**.
Save format	Allows you to select the format in which the model will be saved **(2)**.
Use auto save during modelling	If checked, allows you to set the frequency with which the model will be saved automatically during the workflow.

(1)



The method for placing the 2D (38.00) length looks identical to that of the 3D length (51.33)

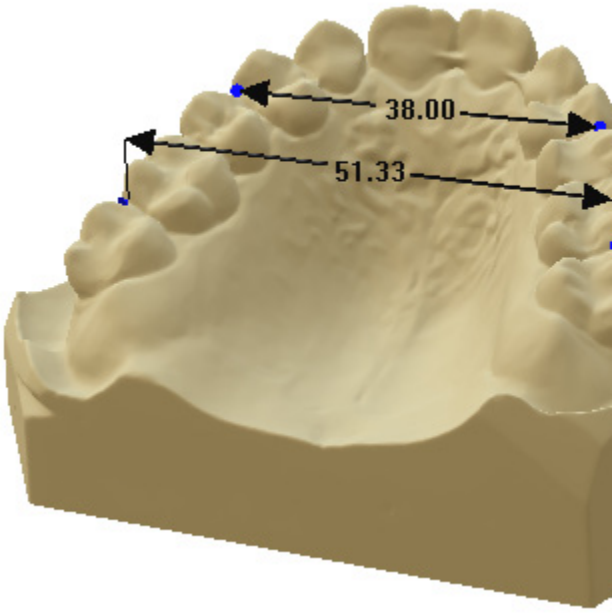


Illustration of the differences between the 2D (38.00) and the 3D (51.33) lengths

(2) The formats available for saving your models are:

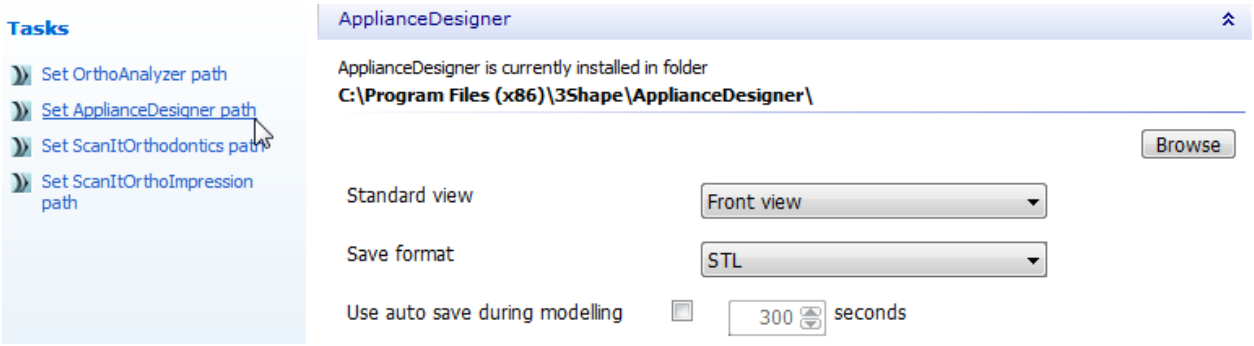
Format	Option
STL	Standard open format.
DCM	3Shape compressed format. Gives smaller files, but not supported by external software.
PTS	Only the raw scan points are saved. However, the points will still be processed (temporarily) in order to allow alignment.
PTS Cyra	Special point cloud format (for very special cases only).
VRML	Is an alternative format for saving models. It is primarily used for

	saving face scan models in 3Shape software.

2.1.2 ApplianceDesigner

View the **ApplianceDesigner** tab of the *System Settings* window identifying the path for the ScanItOrthodontics application in it (see image below).

Click **Set ApplianceDesigner path** on the **Tasks** menu or click the ***Browse*** button to identify the path. Set the Appliance Designer path in the *Browse for folder* window that appeared. The default path would be *C:\Program Files\3Shape\ ApplianceDesigner*



Appliance Designer settings

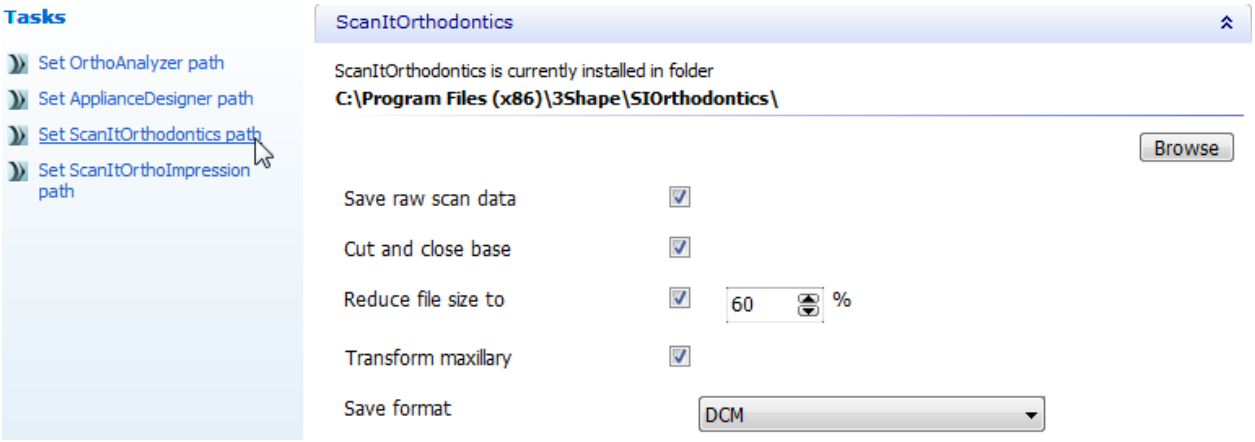
Option	Function
Appliance Designer folder	The path to the folder, where Appliance Designer is installed. Use ***Browse*** to change it.
Standard view	Allows you to select from the drop-down menu the default position of the model during the modelling process.
Save format	Allows you to select the format in which the model will be saved.
Use auto save during modelling	If checked, allows you to set the frequency with which the model will be saved automatically during the workflow.

For more information on **Save format option** see the chapter about OrthoAnalyzer.

2.1.3 ScanItOrthodontics

View the **ScanItOrthodontics** tab of the *System Settings* window identifying the path for the ScanIt Orthodontics application in it (see image below).

Click **Set ScanItOrthodontics path** on the **Tasks** menu or click the ***Browse*** button to identify the path. Set the ScanItOrthodontics path in the *Browse for folder* window that appeared. The default path would be *C:\Program Files\3Shape\ SIOrthodontics.*



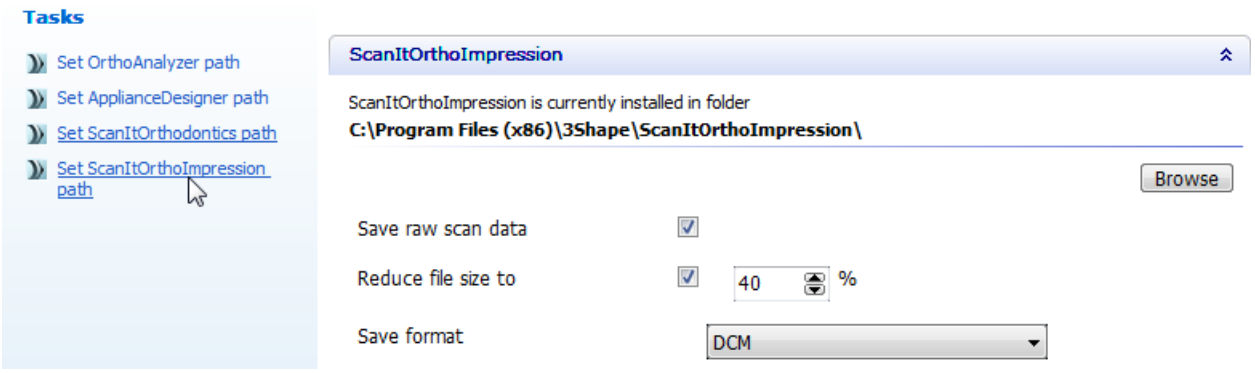
ScanIt Orthodontics settings

Option	Function
Save raw scan data	Saves the intermediate results as raw (point cloud) data. This allows you to get back to the scanning process without having the scan.
Cut and close base	Cuts the base and align its contours automatically.
Reduce file size to	Define the extent of decimation (%) to visualize the scan decimation along the way.
Transform maxillary	Transforms the upper model if only the maxillary model is scanned.
Save format	Sets the format in which the model will be saved (see the chapter OrthoAnalyzer for details).

2.1.4 ScanIt Ortho Impression

View the **ScanItOrthoImpression** tab of the *System Settings* window identifying the path for the ScanIt Ortho Impression application in it (see image below).

Click **Set ScanItOrthoImpression path** on the **Tasks** menu or click the ***Browse*** button to identify the path. Set the ScanItOrthoImpression path in the *Browse for folder* window that appeared. The default path would be *C:\Program Files\3Shape\ ScanItOrthoImpression beta*



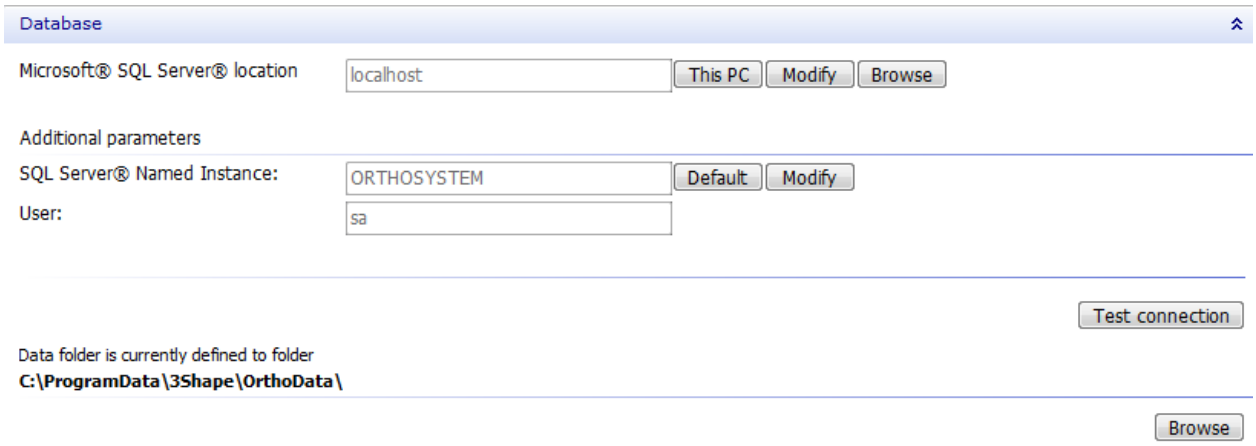
ScanIt Ortho Impression settings

Option	Function
Save raw scan data	Saves the intermediate results as raw (point cloud) data. This allows you to get back to the scanning process without having the scan.
Reduce file size to	Defines the extent of decimation (%) to visualize the scan decimation along the way.
Save format	Allows to select the format for the scan (see chapter OrthoAnalyzer for details).

2.1.5 Database

View the **Data folder** tab of the *System Settings* window identifying the path for the OrthoData in it. The OrthoData folder contains the input files for the 3Shape Ortho-applications.

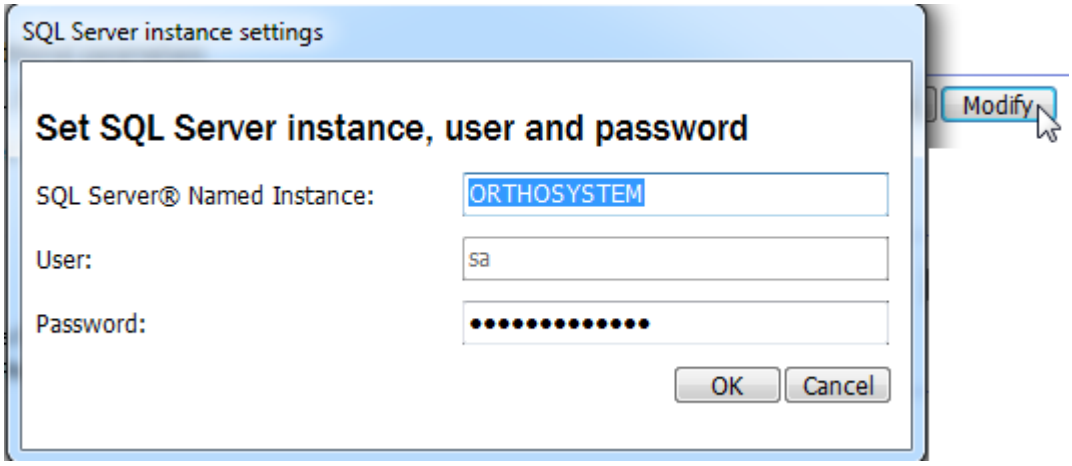
Click the ***Browse*** button and set the OrthoData path in the Browse for folder window that appeared. The default path would be *C:\Program Files\3Shape\OrthoData*.



Database settings

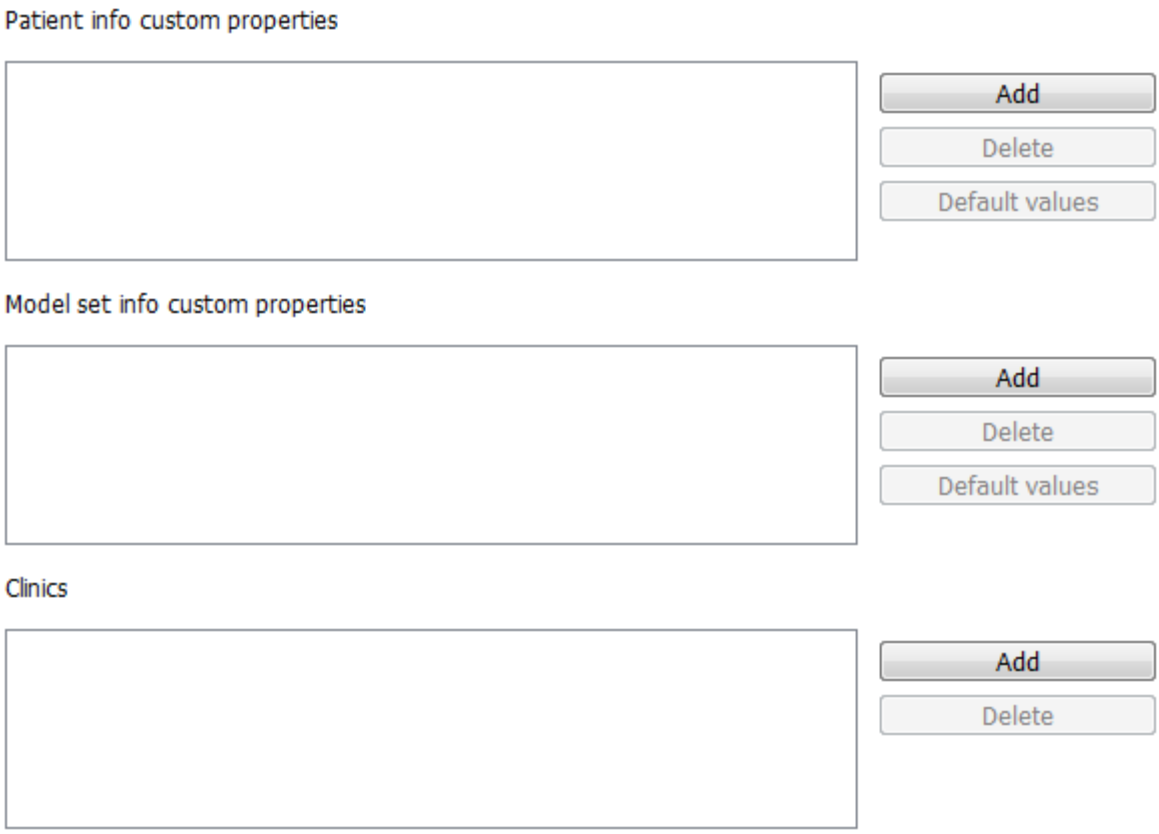
Option	Function
Microsoft SQL Server location	Indicates the PC with the SQL server. You can change to another PC by clicking ***Modify*** or ***Browse***.
SQL Server Named Instance	Indicates the named instance of the SQL server on the PC. There can be more than one SQL server named instances on one PC.
User	Indicates default user of the system **(1)**.
Data folder	Indicates the path to the data folder.

(1) You can set the new password for a user and the SQL Server Named Instance information by clicking the ***Modify*** button:



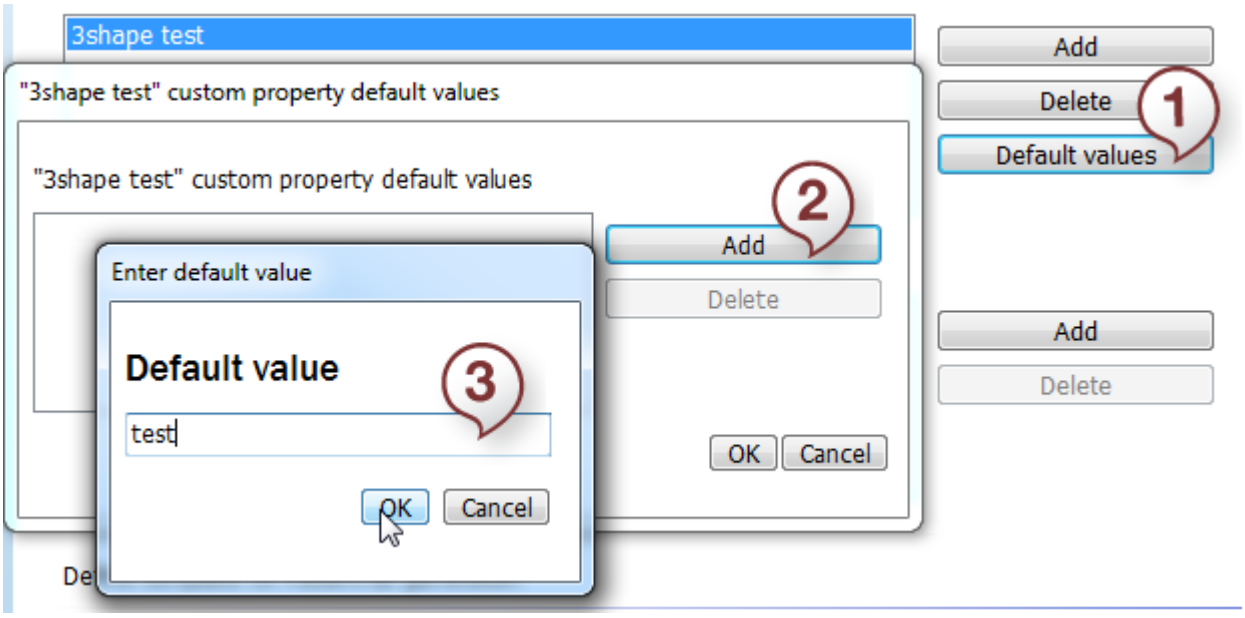
Modifying additional parameters

It is possible to add some customized parameters to the **Patient info**, **Model set info** and add list of **Clinics** in the following sections:



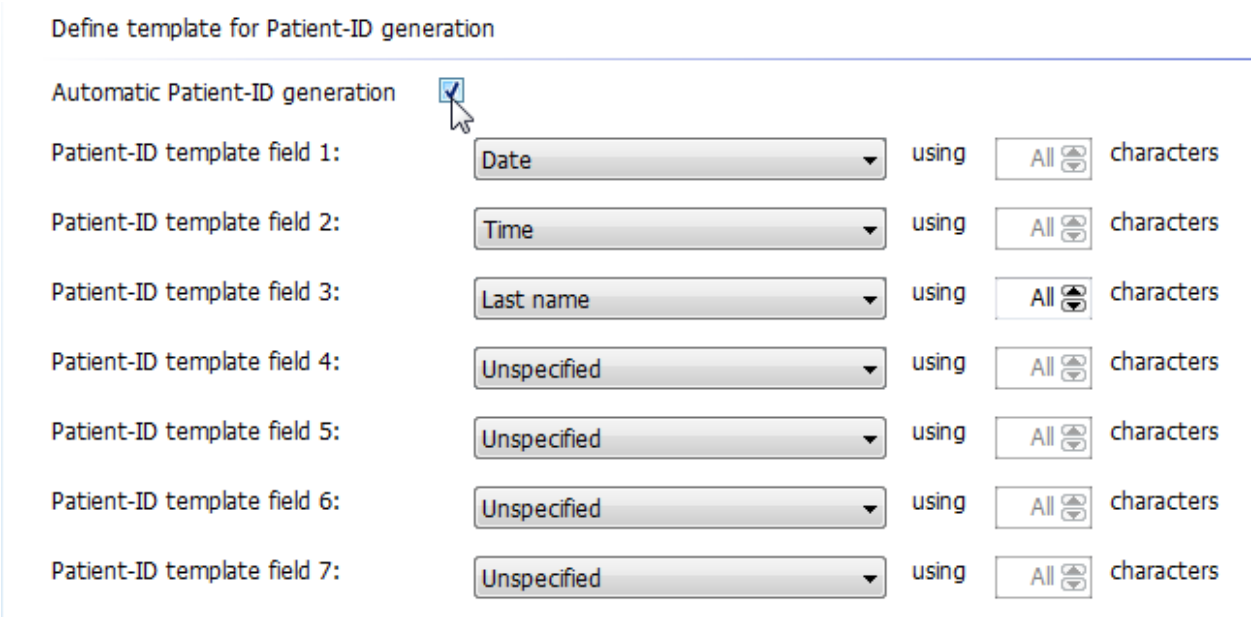
Setting parameters for Patient and Model set info and Clinics

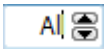
Click the ***Add*** button to fill in customized information in the corresponding fields:



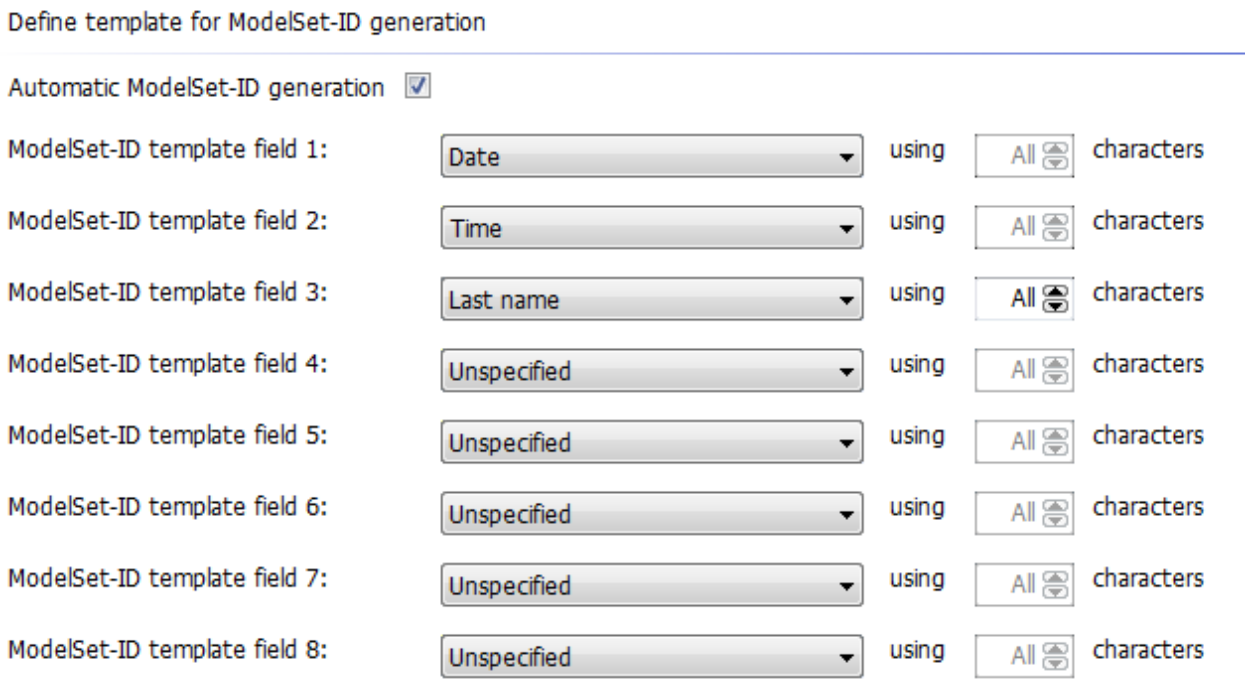
After adding a new item click the ***Default values*** button **(1)** to customize its parameters. The *Default values* form popups. Click ***Add*** **(2)** to indicate the values **(3)**. Click ***OK*** to save them.

Mark the **Automatic patient-ID** checkbox to automatically generate the IDs:



Choose the number of characteristics by clicking at the arrows  in the characteristics option to the right.

The **Define template for ModelSet-ID generation** section allows to edit the settings for the models templates:

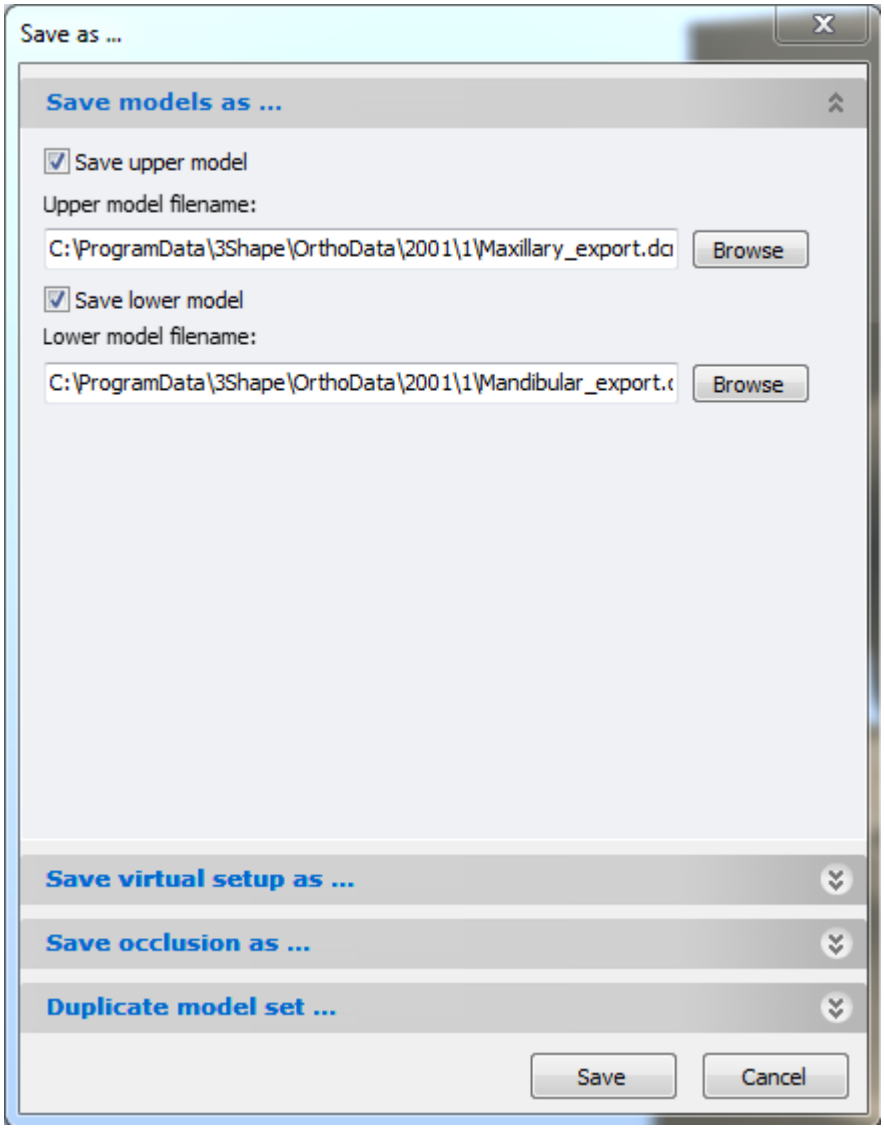


2.1.6 Export

The Export section allows you to make changes the settings for the Export option in the Ortho System Appliance Designer and Ortho Analyzerfiles destination, unique file names etc.

Note: These parameters will apply to 3D models created via the ***Export Model As***  options in the Ortho Analyzer and Appliance Designer software , but also to the Export features in the Ortho System Patient Browser.

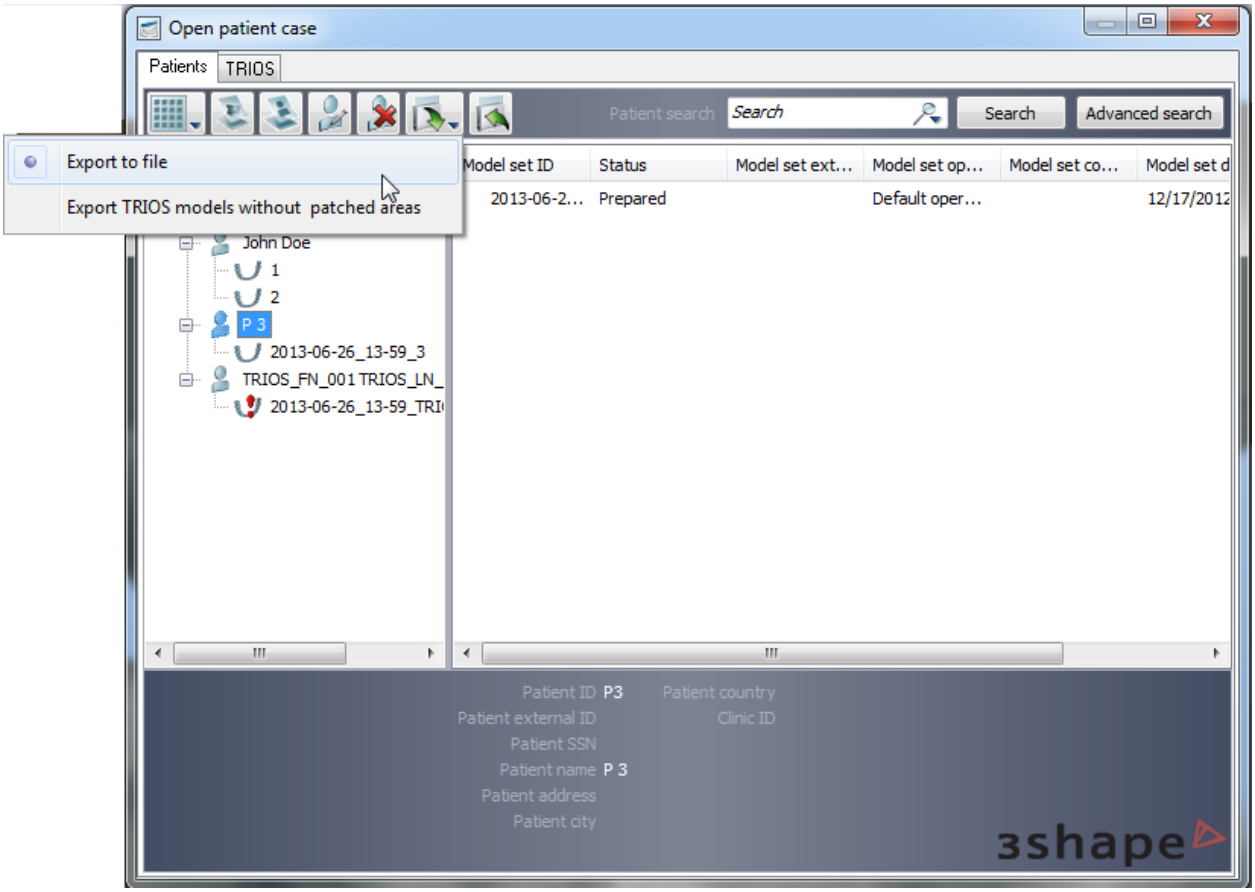
1. Export Model as



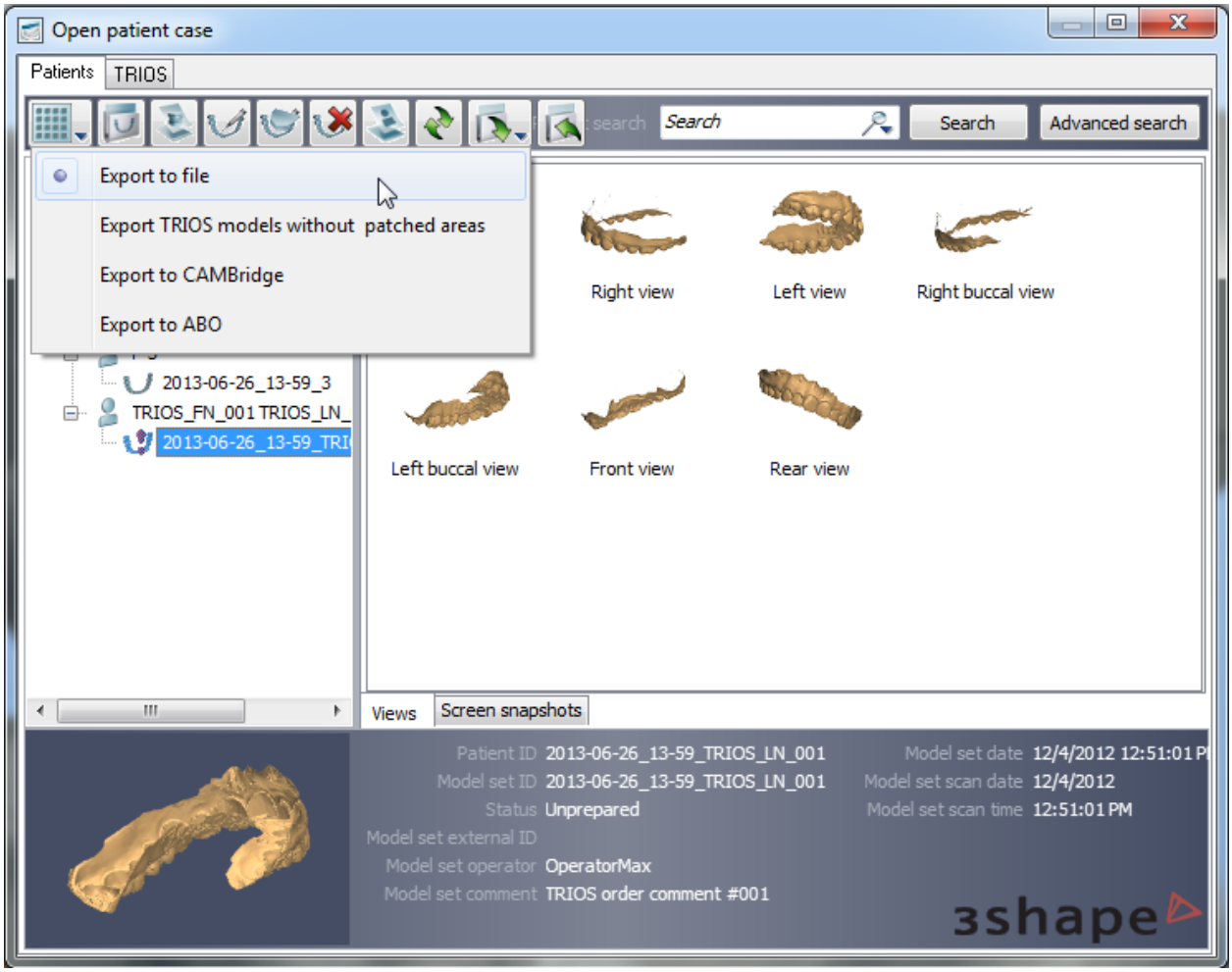
Change file type / extension (STL or DCM) and Change file name (standard or unique ID).

2. Exporting Models, Patients or patients groups out of the Ortho System:

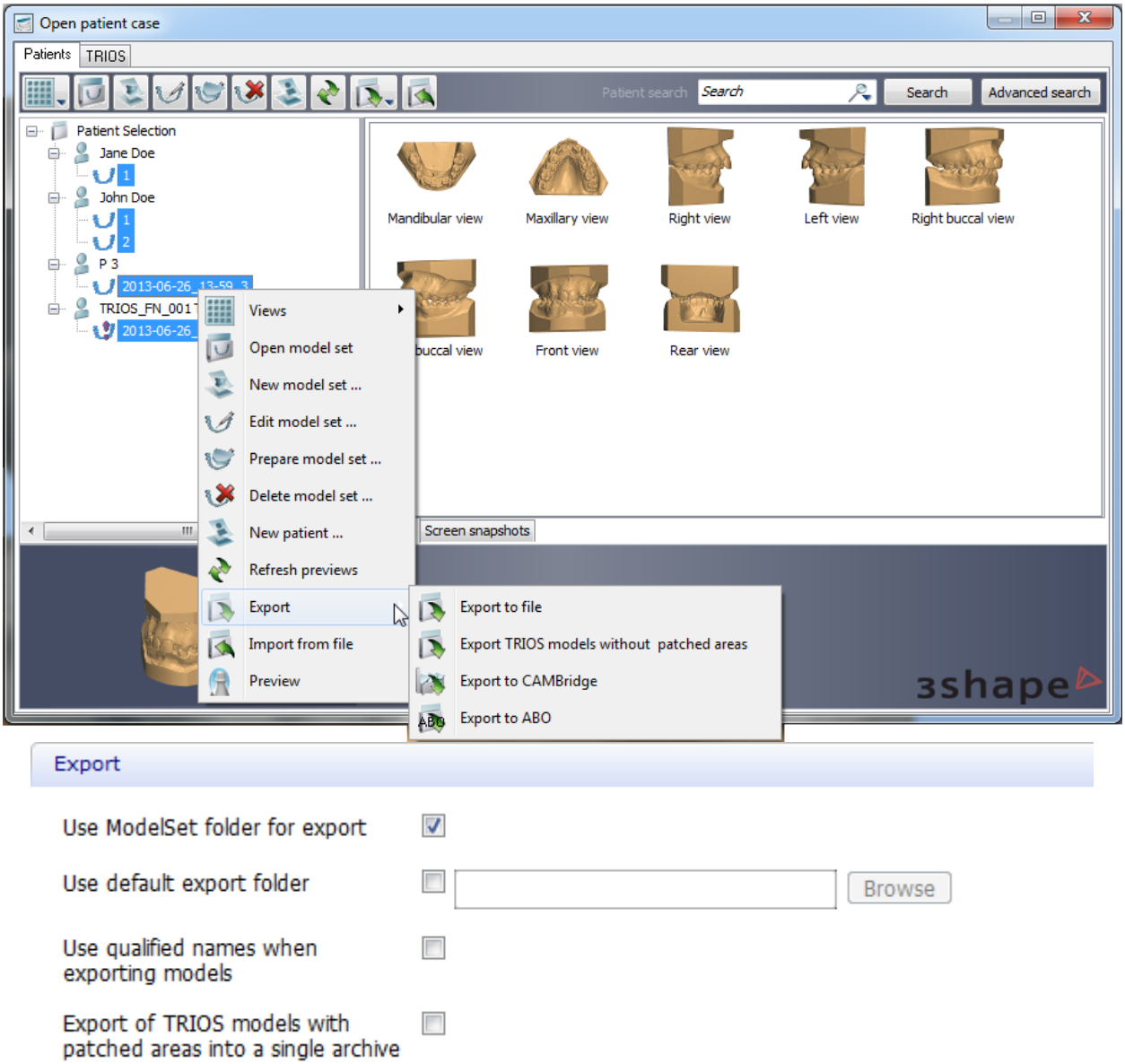
- Export Patient from Patient Browser interface



- Export Model Set from Patient Browser interface



- Export Patient Group



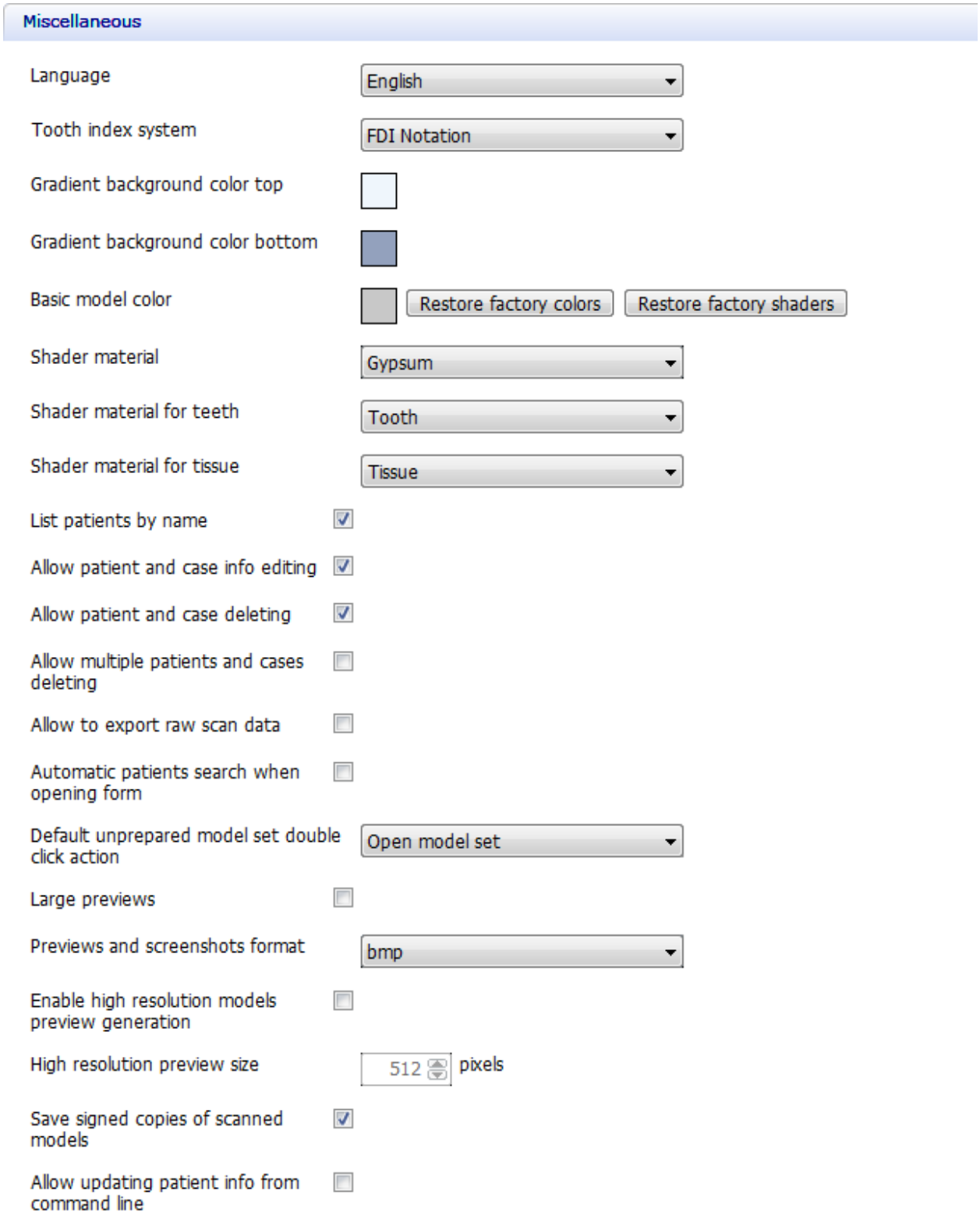
Export section

Option	Function
Use ModelSet folder for export	If checked enables exporting files to Model Set folder. This will apply all available Export options: Export to File, Export TRIOS Models without patched areas, Export to CAMbridge, Export to ABO.
Use default export folder	If checked allows you to set the path to the default export folder (by clicking ***Browse***).
Use qualified names when exporting models	If checked allows to give the exported models unique names such as Patient and Model Set ID when exporting models. If this is unchecked, the model sets

	will have standard names such as 'Maxillary.XXX' and 'Mandibular.XXX'
Export of TRIOS models with patched areas into single archive	If checked, enables exporting of TRIOS models with patched areas into single archive.

2.1.7 Miscellaneous

This section allows you to set the additional parameters for the system.



Miscellaneous settings

Option	Function

Language	Allows you to set the language for the program (e.g. English, French, etc.).
Tooth index system	Indicates the Tooth index system that will be used in the applications **(1)**.
Gradient background color top	Indicates the gradient background color of the top of the screen in the applications.
Gradient background color bottom	Sets the background color at the bottom of the screen in the application.
Basic model color	Sets the basic color for the model in the applications.
Shader material	Allows you to select the material for shader.
Shader material for teeth	Defines the mode for the virtual texture visualization of the teeth **(2)**.
Shader material for tissue	Indicates the mode for the virtual texture visualization of the tissue.
List patients by name	If checked, lists the patients by name, otherwise, they are sorted by ID.
Allow patient and case info editing	If checked, allows editing of patient information and case information.
Allow patient and case deleting	If marked, allows deleting of patient and case.
Allow multiple patients and cases deleting	Allows deleting of multiple patients and cases.
Allow to export raw scan data	Allows exporting raw scan data.
Automatic patients search when opening form	When checked, OrthoAnalyzer automatically displays the list of patients when entering the *Open patient form* (so you don't have to press ***Search***).
Default unprepared model set double click action	Allows you to select the default action at double-clicking the unprepared model (open or prepare model set).
Large previews	If selected, displays large previews in the applications.
Previews and screenshots format	Allows you to set the format of the previews and screenshots.
Enable high resolution models preview generator	If checked, enables high resolution models preview generator.
High resolution preview size	Becomes active if the high resolution preview generator option is enabled. You can set the parameters for the size of preview.
Save signed copies of scanned models	If checked saves the signed copies of scanned models.
Allow updating patient info from command line	If checked, it is possible to update the patient info from command line.

(1) Select the appropriate **Tooth index system** out of the four possible options: **Universal Numeric Notation**, **FDI Notation**, **Haderup Notation** and **Palmer Notation.**

Universal Numeric Notation:

Permanent Teeth															
upper right								upper left							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
R															L
32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
lower right								lower left							

FDI Notation:

Permanent teeth															
upper right								upper left							
18	17	16	15	14	13	12	11	21	22	23	24	25	26	27	28
48	47	46	45	44	43	42	41	31	32	33	34	35	36	37	38
lower right								lower left							

Haderup Notation (mostly used in Scandinavian and Eastern Europe countries):

8+	7+	6+	5+	4+	3+	2+	1+	+1	+2	+3	+4	+5	+6	+7	+8
8-	7-	6-	5-	4-	4-	2-	1-	-1	-2	-3	-4	-5	-6	-7	-8

Palmer Notation:

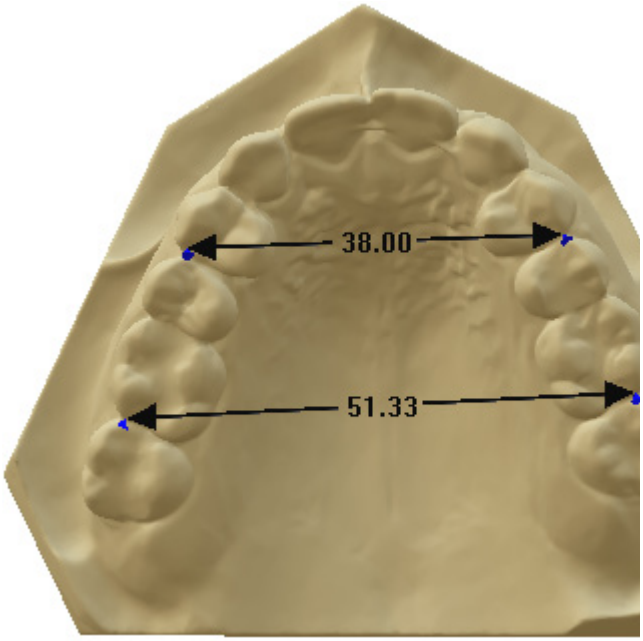
87654321	12345678
87654321	12345678

In the Ortho System, the mouth's quadrants are identified using the following convention:

- **UR** for Upper Right
- **UL** for Upper Left
- **LR** for Lower Right
- **LL** for Lower Left

Thus, the Upper Right Central Incisor is called **UR1** according to the Palmer notation.

Check the **Use 2D tooth length** checkbox to employ the traditional two-dimensional measuring system, which would enable measuring dental distances using the user point-of-view as a measuring plane.



The method for placing the 2D (38.00) length looks identical to that of the 3D length (51.33)

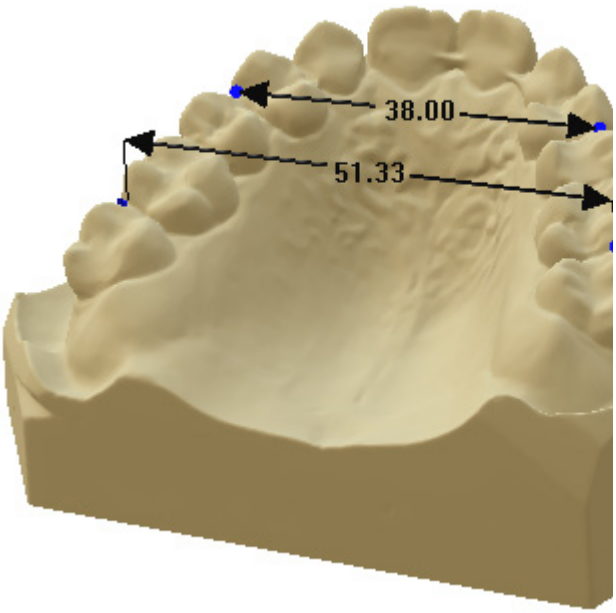
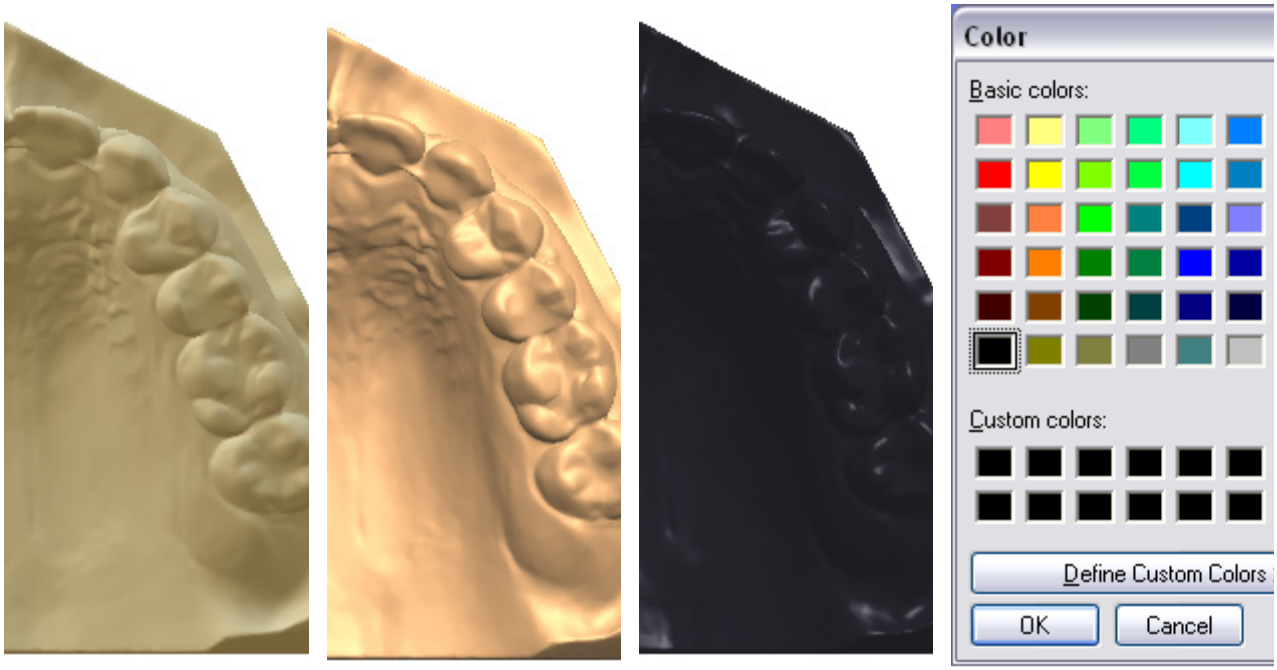


Illustration of the differences between the 2D (38.00) and the 3D (51.33) lengths

(2) Select the appropriate **Shader material** which would define the mode for the virtual texture visualization of the models:



Gypsum **ModelBackface** **ModelBackface2** **Not specified***

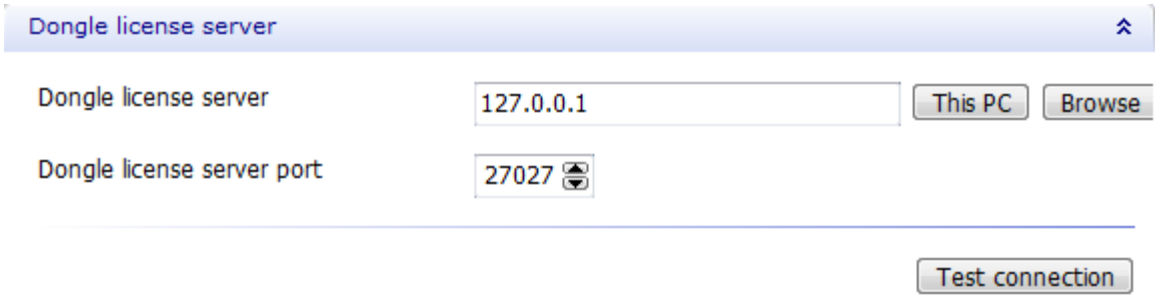
*If you prefer to leave the shader material as **Not specified**, then the system will automatically display the ***Choose*** button that you can click to get the color map and select the shader (color) of your own choice for the models.

2.1.8 Dongle Licence Server

Click the ***Browse*** button and specify the dongle license sever, selecting it in your network places.

To set your current PC as the dongle license server for the 3Shape Ortho applications, click ***This PC***.

Specify the number of the **Dongle license server port** and click ***Test connection***.



2.2 Administrative Settings

2.2 Administrative Settings

Administrative settings section allows you to set administrative services like:

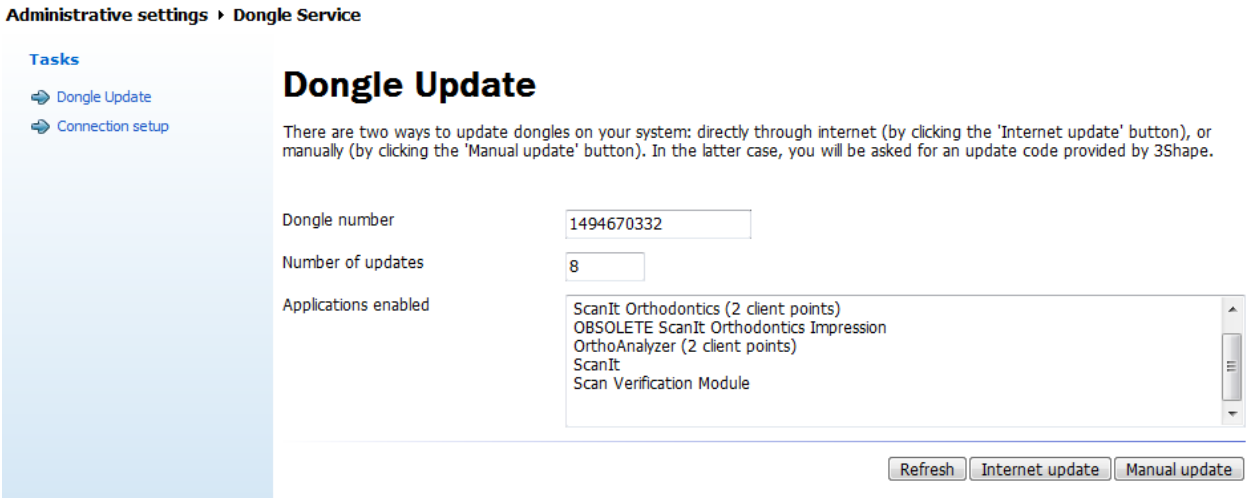
- Dongle Service
- Communication
- Sites

2.2.1 Dongle Service

As soon as you click the **Administrative settings** icon, the main window opens up displaying the **Dongle update** option (see image below). Click on it to start updating your dongle.

After you have clicked the **Dongle Service** tab, the main window opens up allowing you to update the dongle in two ways (see the image below):

- Via internet (by clicking the ***Internet update*** button).
- Manually (by clicking the ***Manual update*** button). In this case the *Manual update* window will pop up asking you for the update code provided by 3Shape.



Click the ***Refresh*** button to update the following information:

Dongle number – The unique number of your dongle.

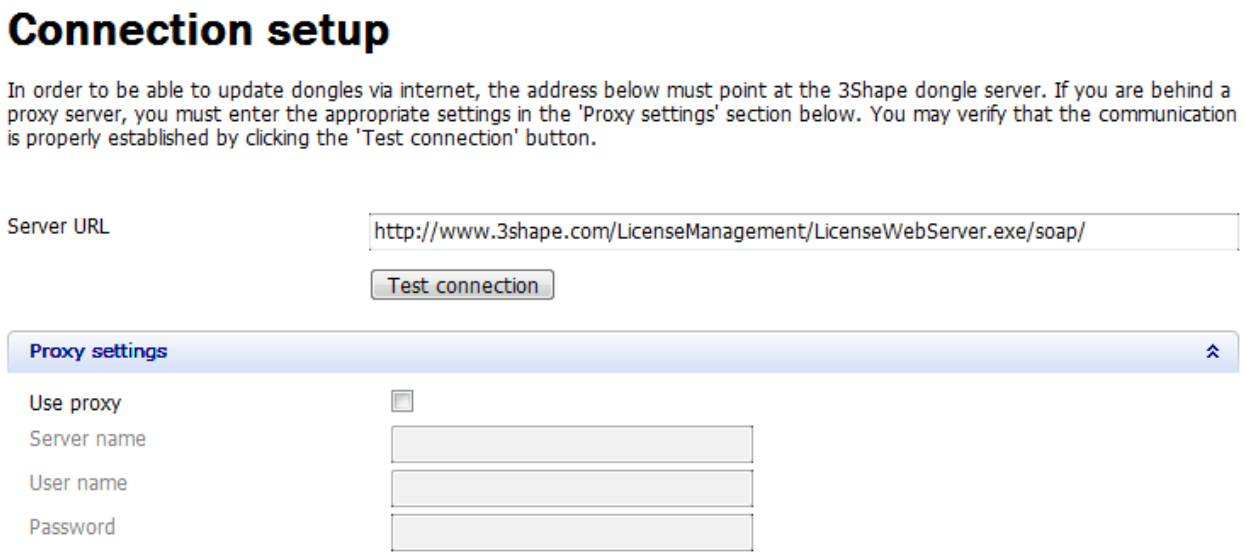
Number of updates – The number of updates performed so far.

Applications enabled – The applications available on your dongle.

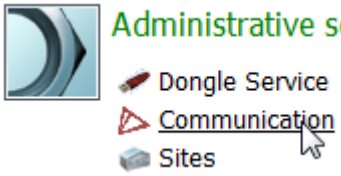
In order to update dongles via internet, click on the ***Connection setup*** button in the **Tasks** menu. The image below illustrates the window that appears on the screen.

The **Server URL** field must contain the address pointing at the 3Shape dongle server. If you are behind the proxy server, enter the appropriate settings in the **Proxy settings** section.

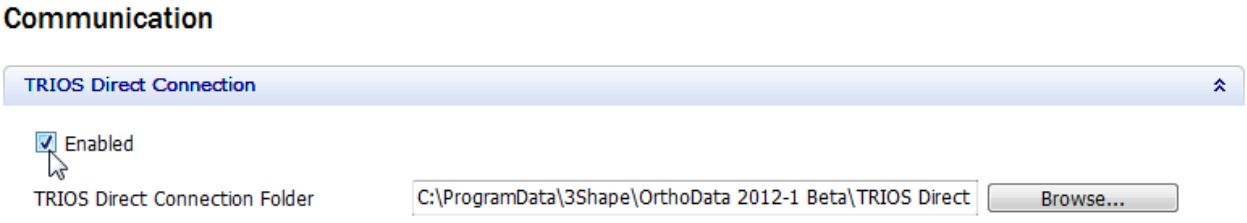
Click ***Test connection*** button to verify whether the connection was successful.



2.2.2 Communication

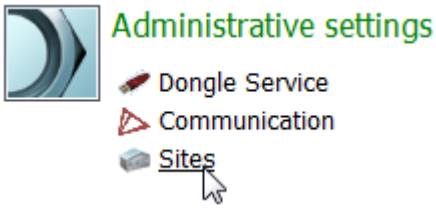


The **Communication** section allows you to make settings for the Trios connection.

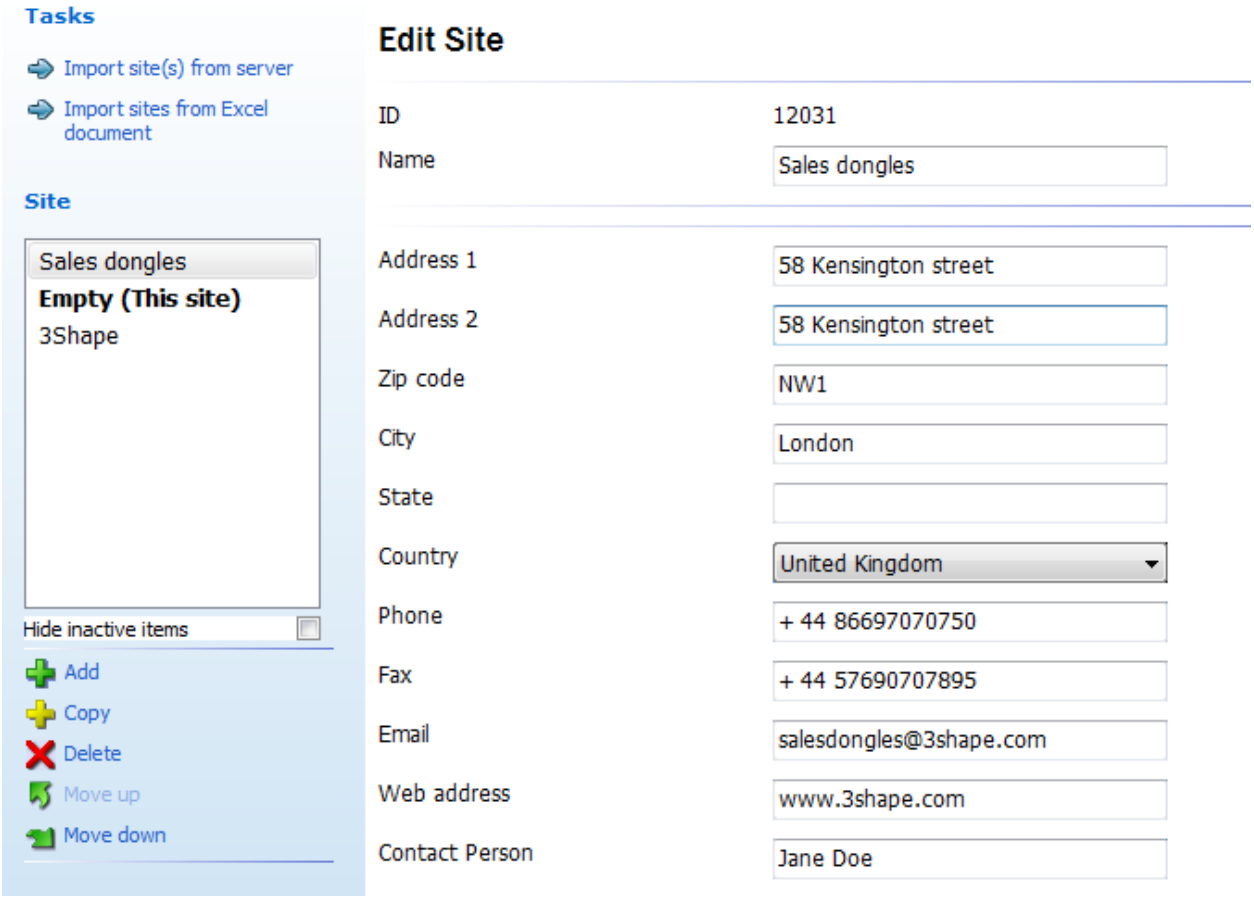


Mark **Enable** checkbox to activate the **Trios Direct Connection Folder** section. If you need to change the path simply click ***Browse*** and choose the folder.

2.2.3 Sites

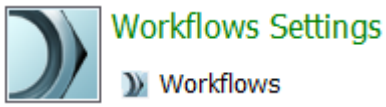


The **Sites** section allows you to customize interactions between Ortho System and labs, manufacturers or clinics. Using this section will ease transferring orders process from the current site to the central manufacturing site.



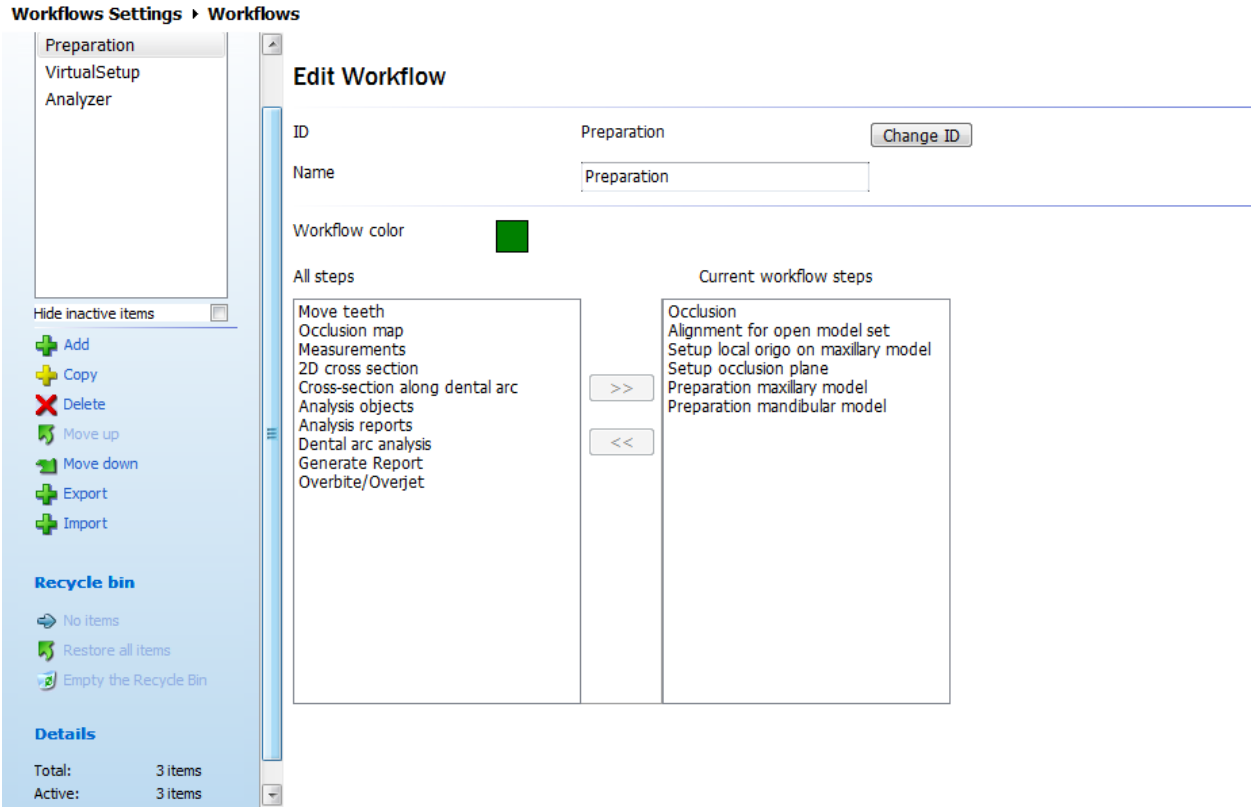
Edit site section

2.3 Workflows Settings



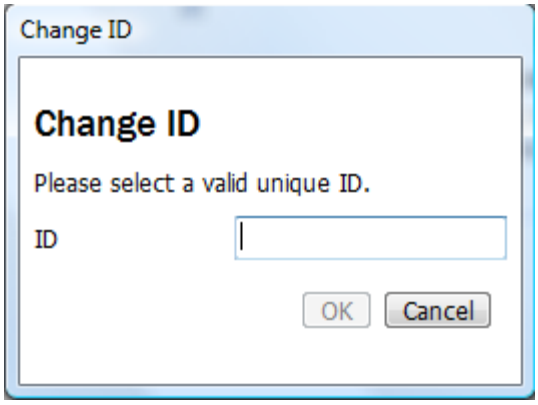
As soon as you click the **Workflow settings** icon, the main window opens up offering you to edit the workflow steps (see the image below).

The application allows you to setup a number of customized workflow wizards with predefined operational steps in OrthoAnalyzer. This cleans up the software interface and organizes steps and operations for your own use.



In the **Workflow settings** you can use and edit the pre-made wizards or add your new wizards.

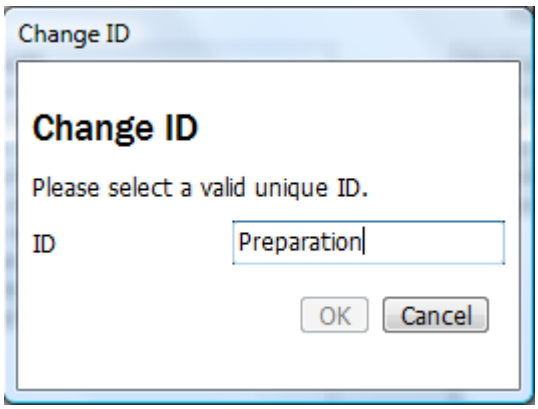
- **Adding a new wizard**



When creating a new wizard, click the ***Add*** button to add the wizard ID in the appeared *Selection of ID* window.

Once the new wizard is added it appears in the **Workflow** list on the left. Inactive wizards can be hidden from the list by selecting the required wizard and ticking the **Hide inactive items** checkbox. All available steps of a wizard are show under **All steps** listing while the wizard remains selected.

Select the required steps for the created wizard and transfer them to the **Current workflow steps** list on the right with the >> button. Use the << button to remove the selected steps from the **Current workflow steps** list if needed.



The customized workflow wizard name can be edited by selecting it from the **Workflow** list and clicking the ***Change ID*** button.

You can specify color of the selected wizard by clicking the ***Workflow color*** cube and selecting the desired color from the available palette.

- **Other operations**

With the other operations you can ***Copy***, ***Delete***, ***Move up*** and *Move down* the selected wizards. The deleted wizards are kept in the **Recycle bin**. You can either restore them or empty the **Recycle bin**.

The ***Export*** and ***Import*** buttons allow you to easily export or import your wizard settings to/from a *.3ml file.

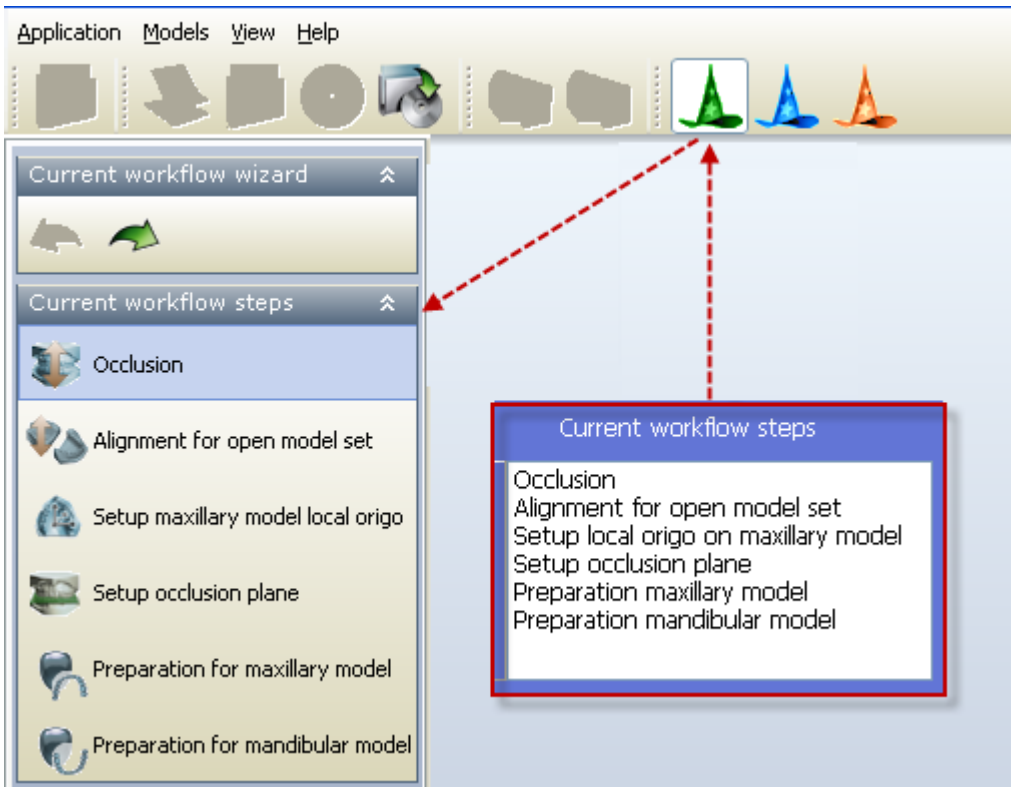

Preparation


VirtualSetup


Analyzer

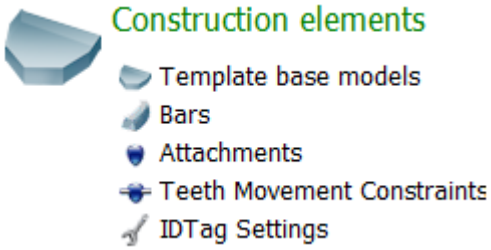
The supplied Ortho software installs 3 pre-made customized workflow wizards by default as examples. As shown in the table to the left, the wizards are represented by the hat icons of varying color and are located in the Main toolbar of OrthoAnalyzer.

Only the sequence of steps defined for the wizard in the Ortho Control Panel appears in the OrthoAnalyzer interface on the wizard icon selection. The following image shows the operational steps of the default **Preparation** wizard in the Ortho Control Panel and OrthoAnalyzer interfaces:


Application
Models
View
Help
Current workflow wizard
Current workflow steps
Occlusion
Alignment for open model set
Setup maxillary model local origo
Setup occlusion plane
Preparation for maxillary model
Preparation for mandibular model
Current workflow steps
Occlusion
Alignment for open model set
Setup local origo on maxillary model
Setup occlusion plane
Preparation maxillary model
Preparation mandibular model

3 Construction Elements

3 Construction Elements



The **Construction elements** section contains the templates and settings for the

- Template base models
- Bars
- Attachments
- Teeth Movement Constraints
- ID Tag Settings

Click at the appropriate icons will take to these sections.

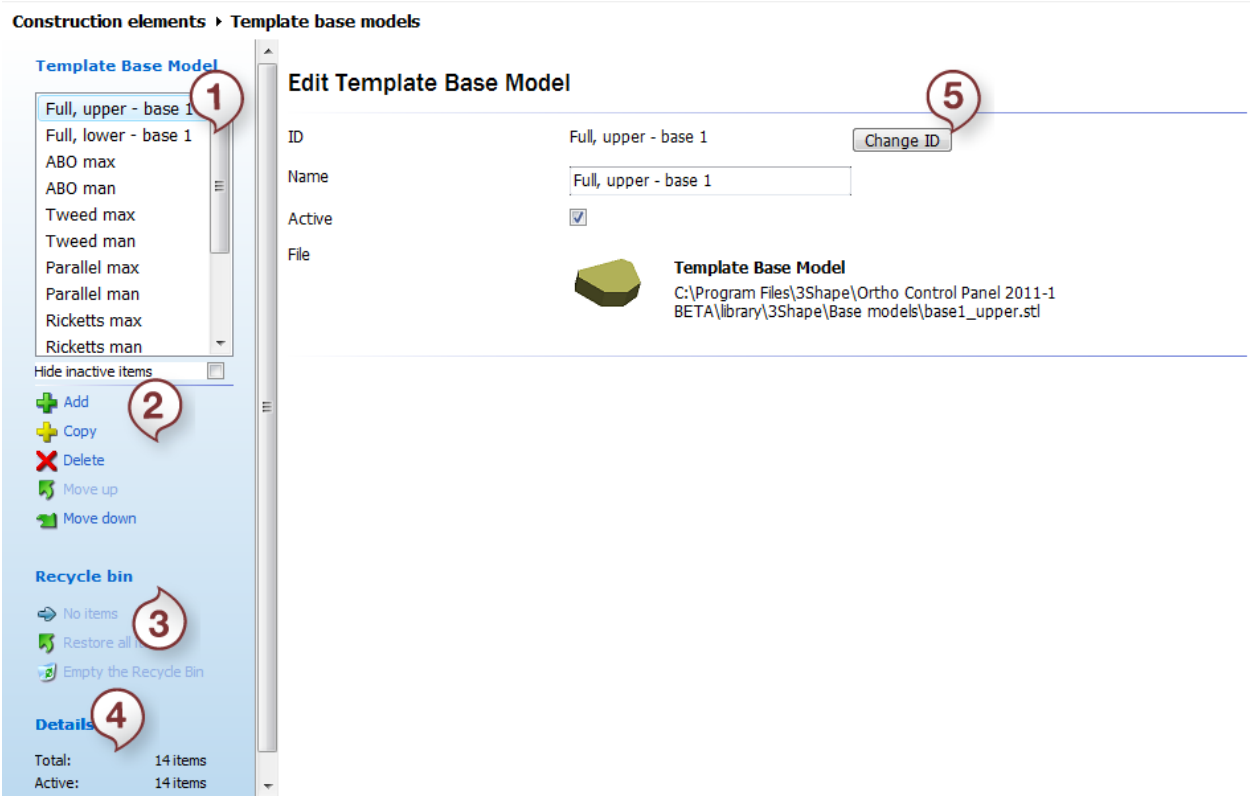
3.1 Template Base Models

Template base model – Enlists entries for the template base models.

Manipulation field (**Add**/**Copy**/**Delete**/**Move up**/**Move down**) - enlists the actions you may apply to the template base models.

Recycle bin - Navigates the deletion and restoration process regarding the template base models entries.

Details - Show the quantity of all the template base models (total) and the only active ones (active).



1. *Template base models library*
2. *Manipulation field*
3. *Recycle bin*
4. *Details*
5. *Edit template base model section*
6. *Template base model*

1. Template base models library – Enlists entries for the template base models.

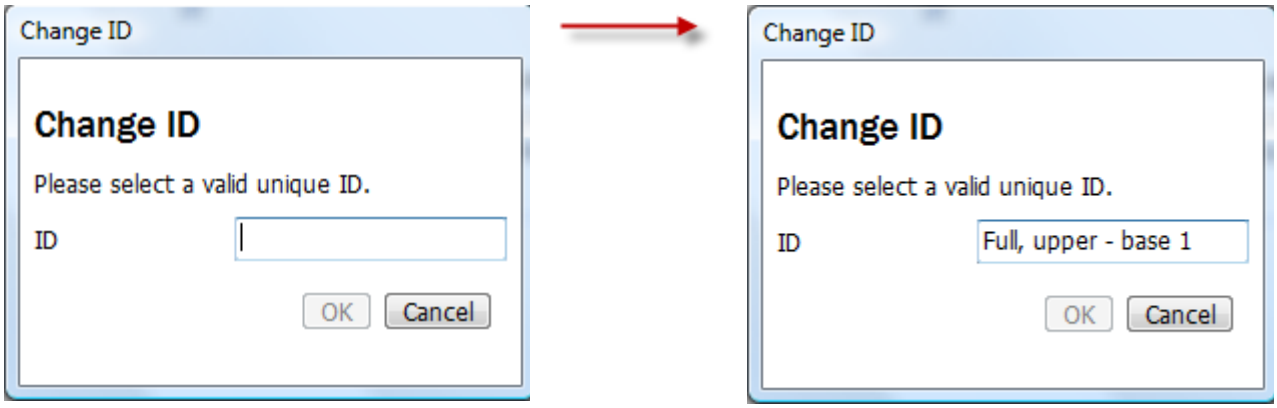
2. Manipulation field (Add/Copy/Delete/Move up/Move down) - enlists the actions you may apply to the template base models.

3. Recycle bin - Navigates the deletion and restoration process regarding the template base models entries.

4. Details section - Shows the quantity of all the template base models (total) and the only active ones (active).

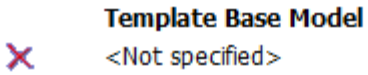
To add a new template base model, click ***Add***. The *Selection of ID* box appears, asking you to insert a valid unique ID for the new template base model, which can involve any alphanumeric combination, except for the ones already present in the list.

5. As soon as ID is specified, the main window transfers to the *Edit Template Base Model* (see image above).



The system automatically identifies the model ID with its name. Click the ***Change ID*** button to change the ID specified before.

The upper-base 1model is marked as **Active**, together with 11 other items on the list, which is reflected in the **Details** tab.



6. The path for the current base model entry is not specified at first. To specify it, move the cursor to the **Template Base Model <Not specified field>** (the white box will circle it to make it active) and click the field. The *Open* window will appear asking for the file name for the base.

The default path for the base templates is specified opposite to the schematic image of the model selected (see image above). The templates are located in the *Base models* folder in the 3Shape OrthoAnalyzer library.

As soon as one of the templates is specified (in our case, the upper model), go on to add the second template for the virtual cast, if necessary. Start with the ***Add*** operation, as before.

Note that the template base models are shown in different colors for you to associate between the upper and the lower basses easily.

Select the **Hide inactive items** checkbox to see only the active templates in the template base list.

To copy a template base model, select the model to be copied and click ***Copy.***

To delete a template base model, select it and click ***Delete***.

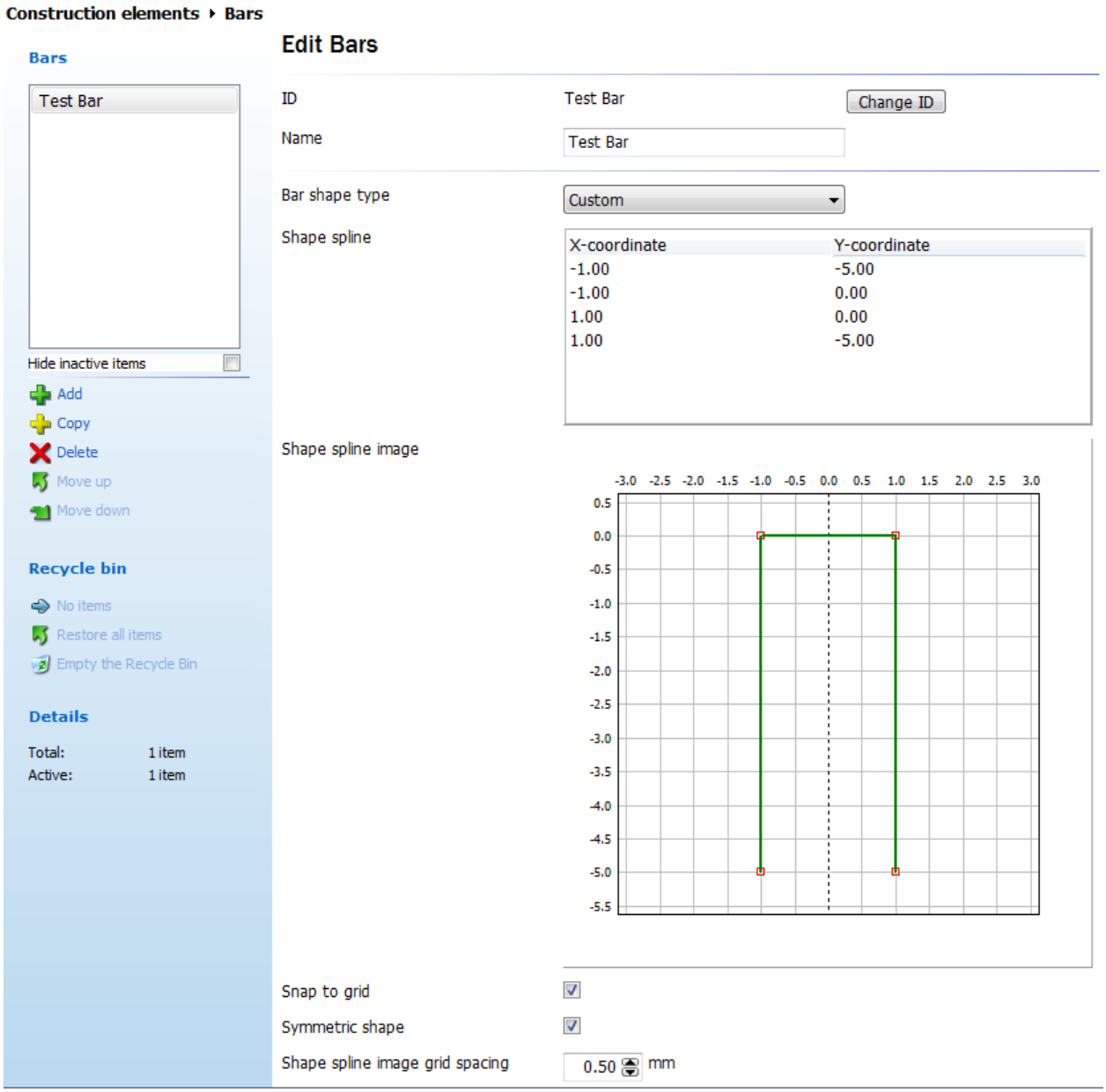
To move a template base model up in the list, select it and click ***Move up***.

To move a template base model down in the list, select it and click ***Move down***.

Follow the scheme below to navigate the various options in the **Recycle bin**:

3.2 Bars

Bars are 3D construction components based on a predefined 2D profiles which can be used to create appliances in Appliance Designer. Follow the instructions to arrange settings for bars.



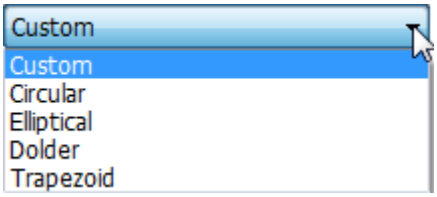
Bar settings

1. Create a bar

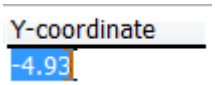
Click the ***Add*** button and enter the ID of the item. The **Edit Bars** section is activated. It is possible to change the **ID** of the created item and the **Name** (for more information see the section Template Base models).

2. Customize the item settings

Select the **Bar shape type** from the drop-down menu:

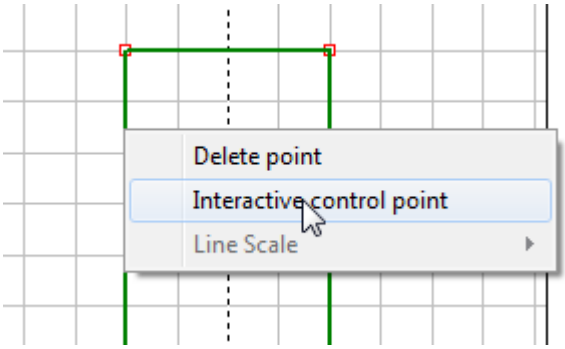


Each type has specific further settings. For instance, **Custom** type allows to edit the parameters of the **Shape spline** coordinates manually.



Click at the coordinates and type the desired numbers. In either case you can scroll the wheel on your mouse to change the parameters.

Customize the scale of the spline in the **Scale** editbox. It is possible to observe the results of editing on the grid in the **Shape spline image** section.

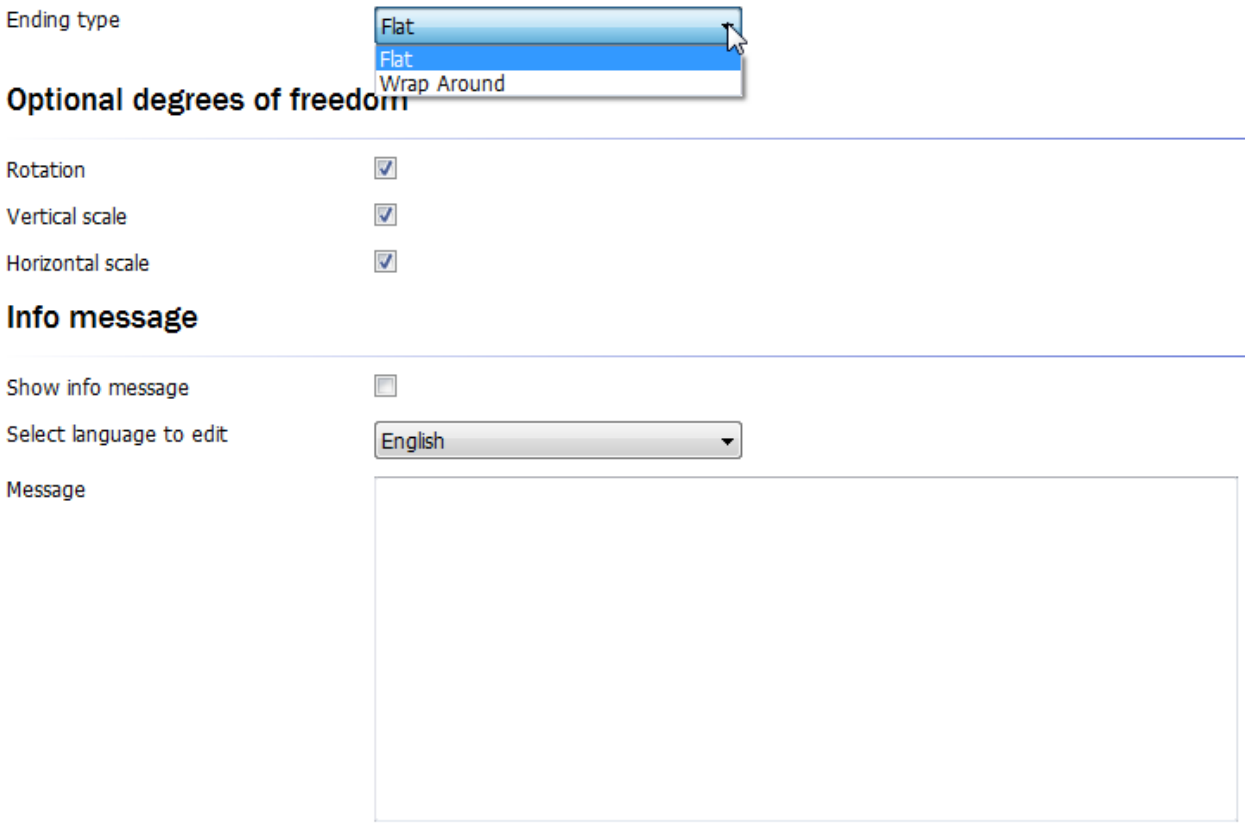


It is possible to create a spline of any shape you like. Add extra points by double-clicking at the grid. You can move the red point to any position you like by holding the left button of the mouse. Right-click the point to open the popup menu and remove a point. Select **Interactive control point** to be able to operate with the selected point in the Appliance Designer.

Snap to grid - allows to fixate the points on the grid.

Mark the **Symmetric shape** checkbox to keep the spline automatically symmetric.

Customize the look of the spline grid by setting the parameters in the **Shape spline image grid spacing** editbox.



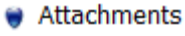
Select the **Ending type** from the drop-down menu:

- **Flat** - creates flat ends on the bar
- **Wrap Around -** creates rounded ends with the shape wrapped around the vertical axis.

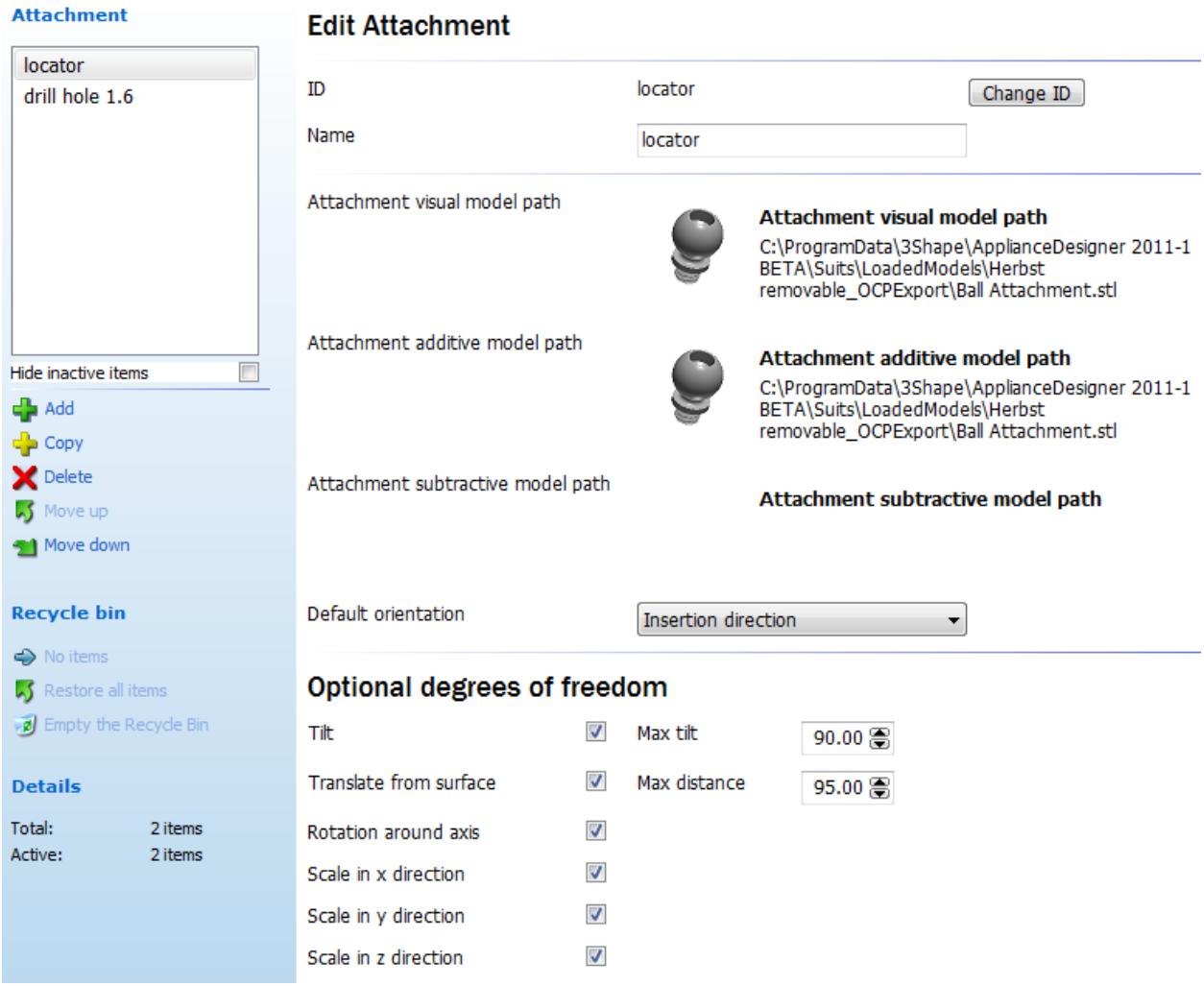
Optional degrees of freedom section - enables the indicated bar transformations in ApplianceDesigner during editing.

Save your settings by clicking the ***Save***  button in the Main menu.

3.3 Attachments



Attachments section allows you to set the parameters for the attachments in **OrthoAnalyzer**. Click the corresponding icon on the Home page to open the **Attachments** page.



Attachment settings

1. Create an attachment

Click the ***Add*** button to create an attachment. Enter the ID of the item and click ***OK*** in the popup window. Now you can set the parameters for the new item. Choose the type of attachment from the following options:

Visual model - an attachment setup as visual model will be displayed on the screen but will have no impact on the underlying geometry, unless one of the two following options is chosen:

- **Additive models**: when this option is chosen, the attachment geometry will be added to the underlying model's geometry (Boolean operation)

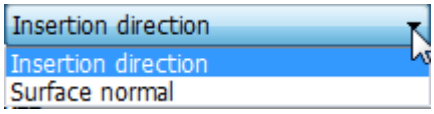
OR

- **Subtractive models**: when this option is chosen, the attachment geometry will be subtracted from the underlying model's geometry (Boolean operation)

2 . Customize the attachment settings

It is possible to **change the ID** and **Name** of the item (for more information see the section Template base models).
Indicate the path of the model in the **Attachment visual model path**, **Attachment additive model path** and **Attachment subtractive model path** that will be displayed together with the preview of the attachment. Once you click at the desired section the Open window appears, where you select the CAD file (.stl, .dcm, .wrl).

Select the **Default orientation** of the attachment from the drop-down menu:

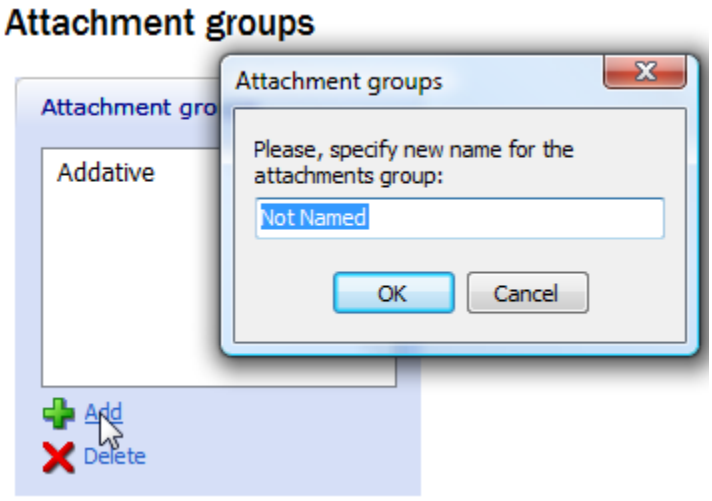


Mark the **Tilt** checkbox to set the parameters for the inclination of the attachment axis in the **Max tilt** editbox.

Translate from surface option, if checked, allows to set the **Max distance** of the attachment movements in the corresponding editbox.
Mark **Rotation around axis** checkbox to perform rotation of the attachment around its axis.
The **Scale in x (y, z) direction** checkbox, if checked, allows stretching of the attachment along the corresponding axis.

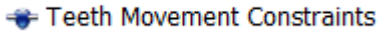
Note: All attachments need to be part of a Group to be available in OrthoAnalyzer or Appliance Designer.

To make attachments available in the OrthoAnalyzer or Appliance Designer applications, it is necessary to include them in **Attachment Groups**. Click the ***Add*** button to create a new group:



Type the name of the new group and click ***OK***. The new group window can be filled with the attachments. To add the attachment to the group select it with a single click from the **Attachment** tab and click the ***Add current attachment*** button.

3.4 Teeth Movement Constraints



The ***Teeth Movement Constraints*** option allows you to set the parameters for the teeth movements you perform in OrthoAnalyzer. Constraints can be associated with biomechanical values for given tooth groups, or for example to specific appliances or treatment methods.

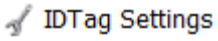
The settings for the Teeth Movement Constraints tab are the same as in the Bars and Attachments section.

It is possible to set the parameters for the group of teeth. Follow the instructions in the right column and use the appropriate buttons to ***Create a new group***, ***Select a group***, ***Change a group***. Mark **Use symmetry** checkbox to select opposing group of teeth. The teeth will be highlighted by different colors. After selecting the group you can set the parameters of the movement constraints for the whole group.

Tooth	Inclination(grad)	Angulation(grad)	Rotation(grad)
1	30	180	180
2	180	180	180
3	180	180	180
4	180	180	180
5	180	180	180
6	180	180	180

Double click the numbers in the **Teeth Movements Constraints** table to edit the parameters for each type of movement of every tooth.

3.5 ID Tag Settings

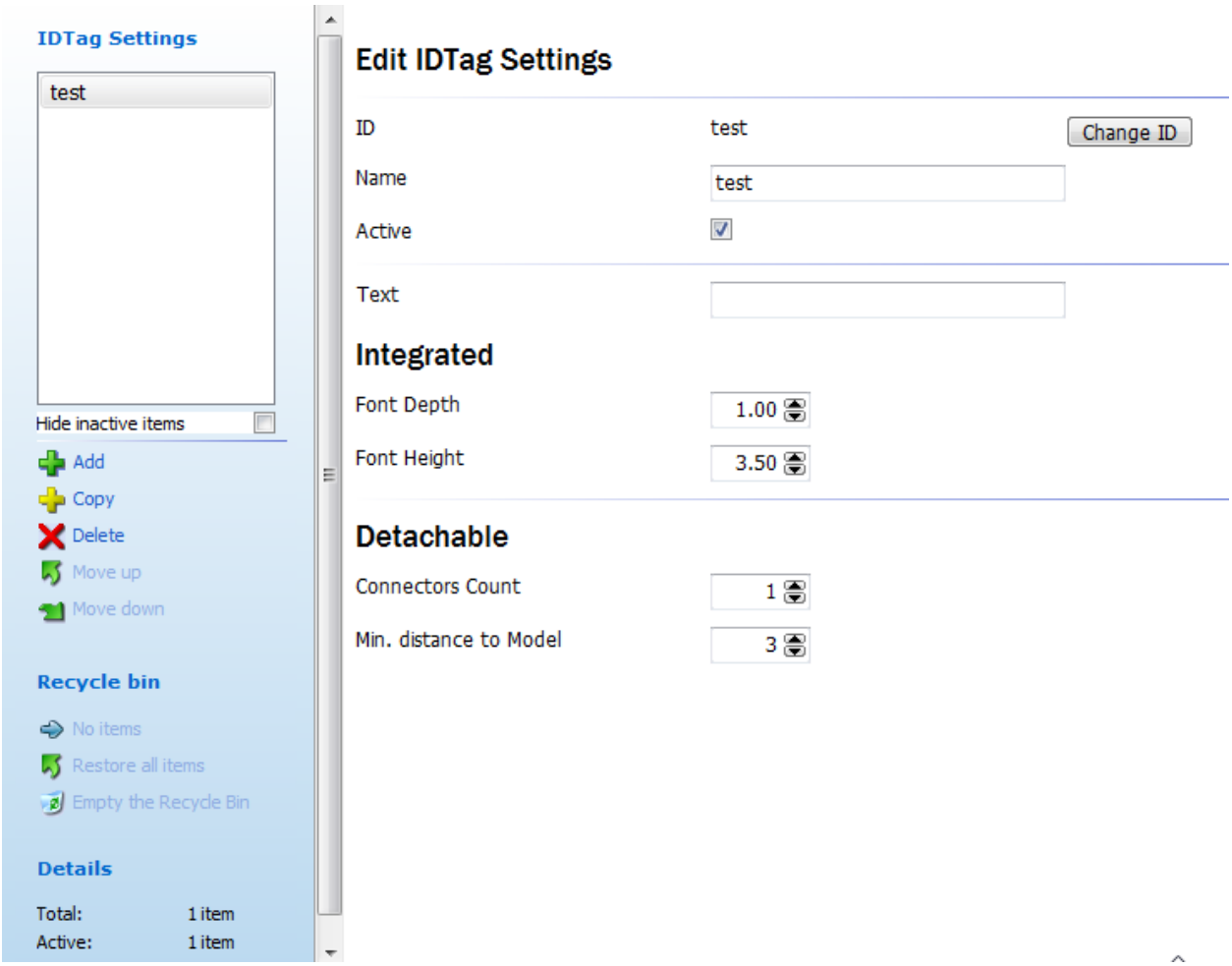


The **ID Tag Settings** section allows you to set the parameters for the ID tags that can be placed on 3D models in Appliance Designer.

An ID tag can either be:

	positive	negative
integrated in the model's surface		

or it can be **detachable**	



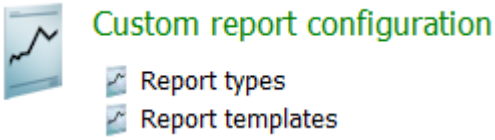
1. Create a new ID tag

Use the ***Add*** button to create the new ID tag. You can change its **ID** and **Name** in the **Edit ID Tag Settings** section.
Indicate the **Text** that will appear on the ID tag.

2. Set the parameters for each type of ID tag
Indicate the **Font Depth** and **Font Height** of the Integrated or Detachable types of ID tags in the corresponding edit boxes.

4 Custom Report Configuration

4 Custom Report Configuration



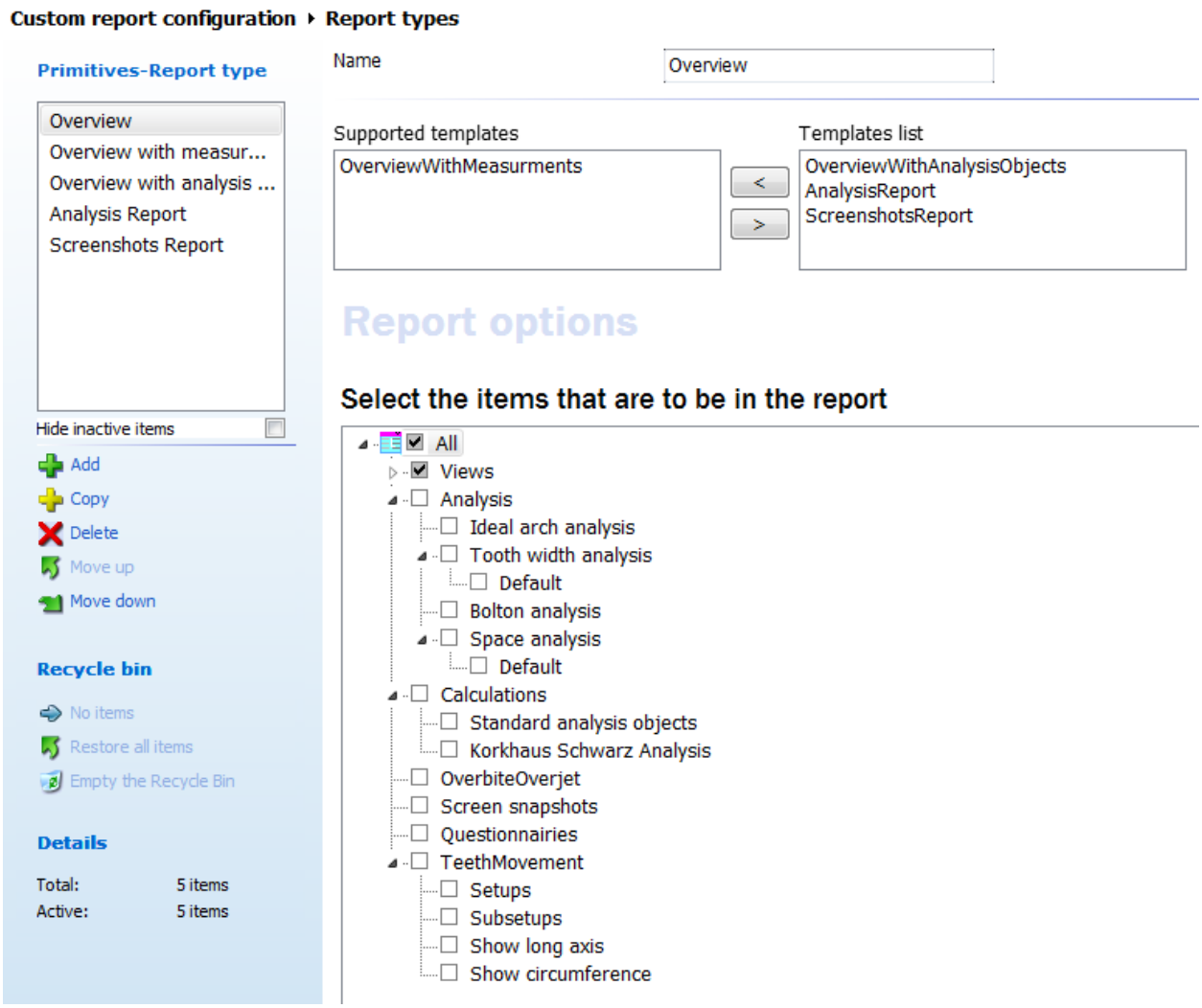
The **Custom report configuration** section contains two subsections:

- Report types: defines the content of the report, chosen from a list of features and analysis items
- Report templates: defines which framework is used to display the elements chosen under the type.

Click at any subsection to open it.

4.1 Report Types

Select the **Report types** tab to create/edit the type for your customized report:



Report settings

1. Select the type of the report

Choose the type of the report from the **Primitives-Report type** tab to the left. It is possible to **Change the ID** and the **Name** of the report type (for more information see the chapter Template Base Models).

In either case you can create your own type by clicking the ***Add*** button.

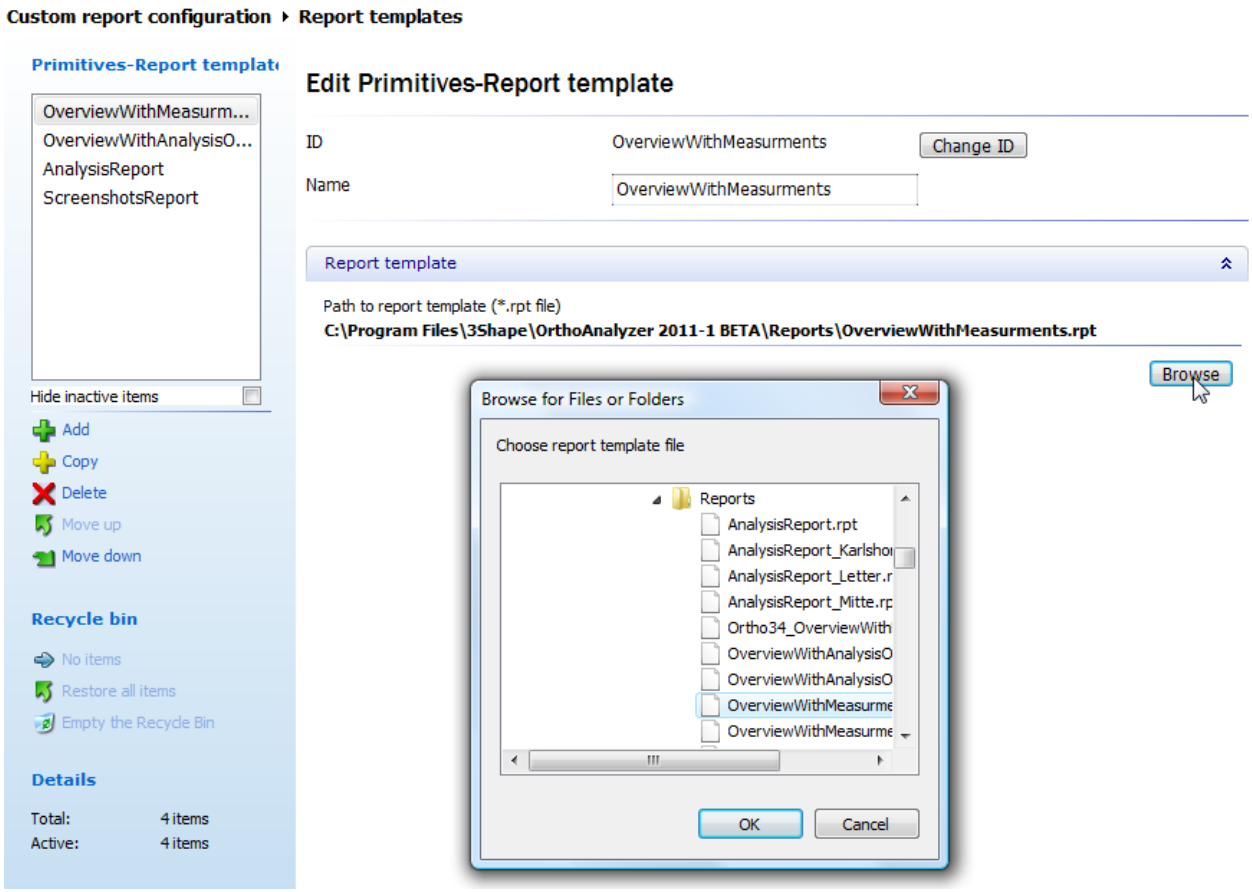
2. Customize your report

Select the **Default template** from the drop down menu (the templates are created in the **Report templates** tab descried in the Report templates section). Choose the items that are to be in the report from the tree by marking the checkboxes with the mouse. Scroll down to view the entire tree.

Note: choose the **Model Image** option from the list for each view in order to show the study models.

4.2 Report Templates

You can create a report template in the **Report templates** section. Click the appropriate icon in the **Custom report configuration** section to open the following window:

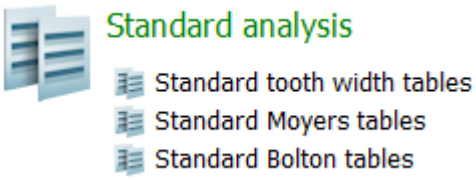


Report templates settings

Click the ***Browse*** button to select the path to the report template from the Browse for *Files or Folders* window that appears on the screen.

Other sections and options of the window are described in details in chapter Construction Elements.

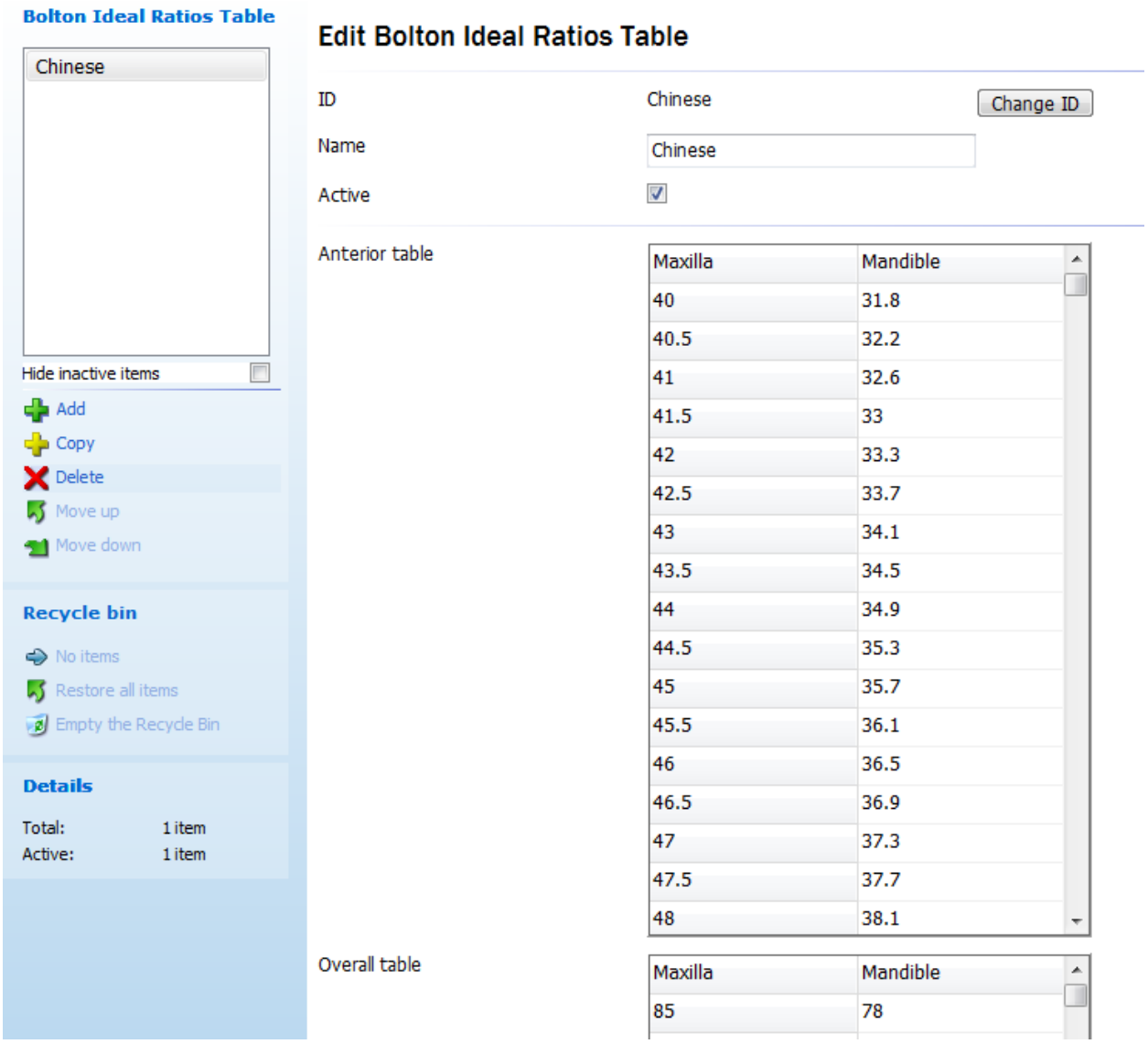
5 Analysis set up



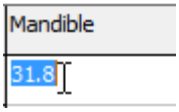
The **Analysis set up** tab deals with the setup of the following standard analysis tables which are used as references in some analysis workflows:

- **Standard tooth width tables**
- **Standard Moyers tables**
- **Standard Bolton tables**

Click on any of the icons to begin editing. The image below illustrates the editing of the **Standard Bolton tables**. The **Standard tooth width tables** and the **Standard Moyers tables** are edited in the same way.



Edit Bolton table window

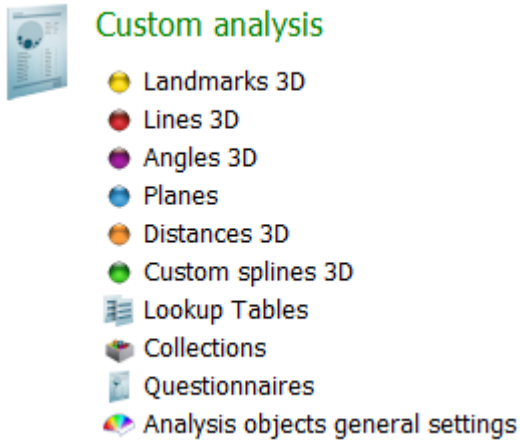


To edit the data in the table, left-click on the cell and insert the necessary numbers. You can also scroll the mouse wheel to move from cell to cell.

Other sections and options of the window are described in details in the chapter Template Base Models.

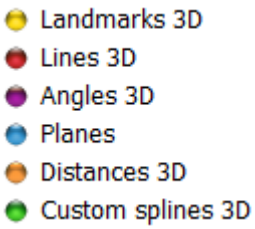
6 Custom Analysis

6 Custom Report Configuration



The **Custom Report configuration** tab presents the tools required to fully customize analyses, questionnaires, and reports.

6.1 Custom Objects and Primitives



Custom objects and Primitives

For your customized analyses and report you can setup **Landmarks**, **Lines**, **Angles**, **Planes**, **Distances** and **Custom splines**. Click on any of the colored icons to open an editing window. The image below illustrates the editing of lines.

You can add a line by clicking the ***Add*** button and give a name to you new line. Name your line as desired and select two landmarks (or points) for it (**Landmark 0** and **Landmark 1**).

Select the **Use 2D projection** checkbox to use a projection plane on which to take measures, rather than directly on the 3d model. You can select the type of plane in the **Projection plane** drop-down menu.

Other sections and options of the window are described in details in chapter Construction Elements.

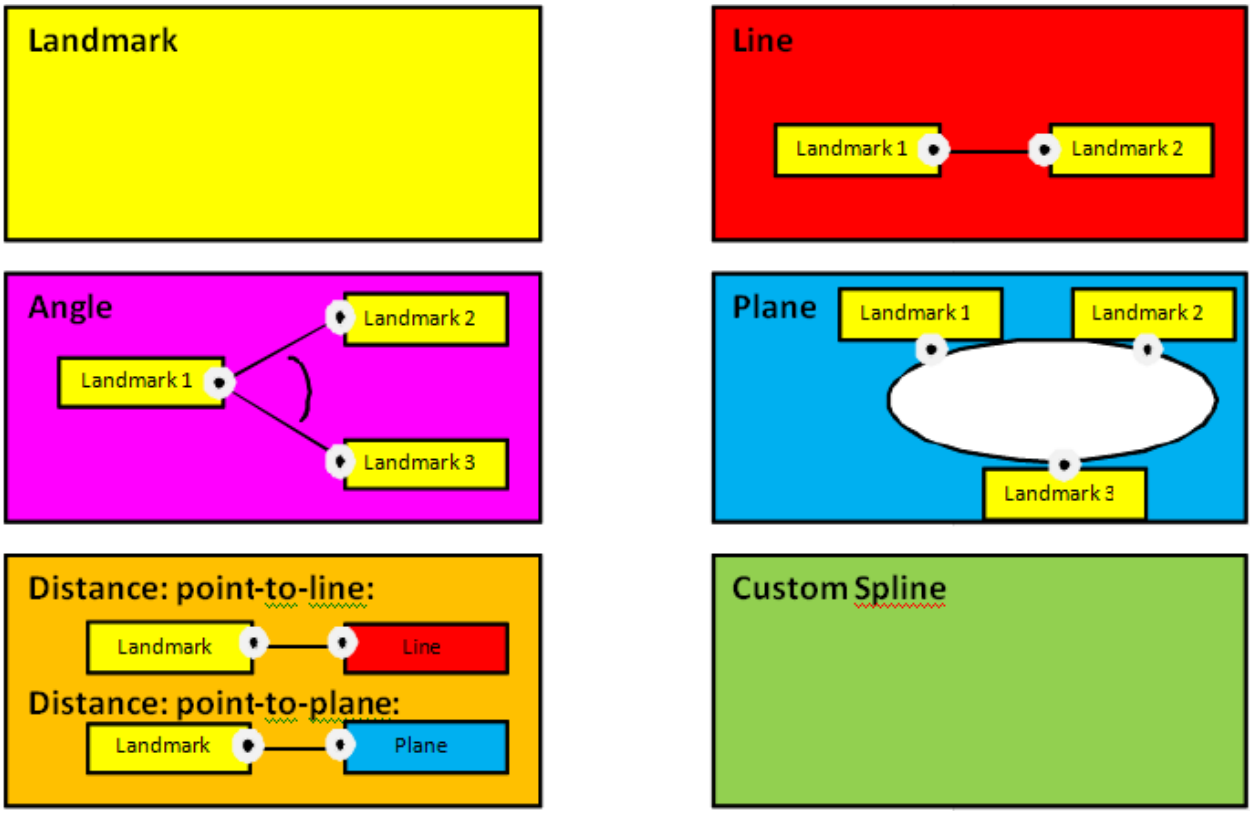
The editing of **Landmarks**, **Angles**, **Planes**, **Distances** and **Custom splines** follows the same principal.

When editing **Distances**, keep in mind that there is a **point-to**

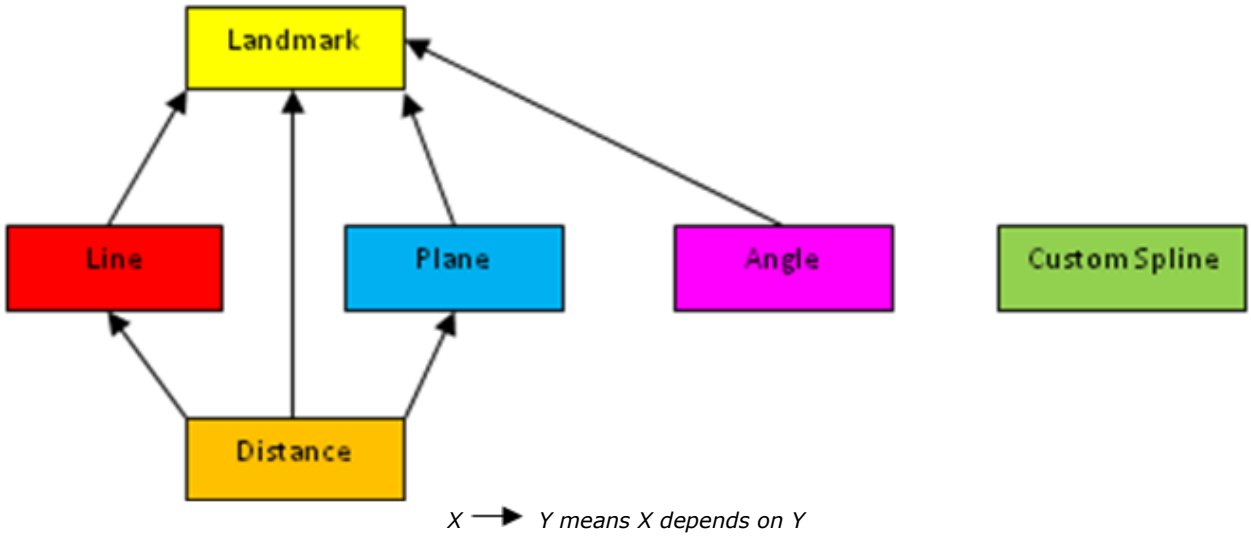
line distance and a **point-to-plane** distance that you can choose from the drop-down menu.

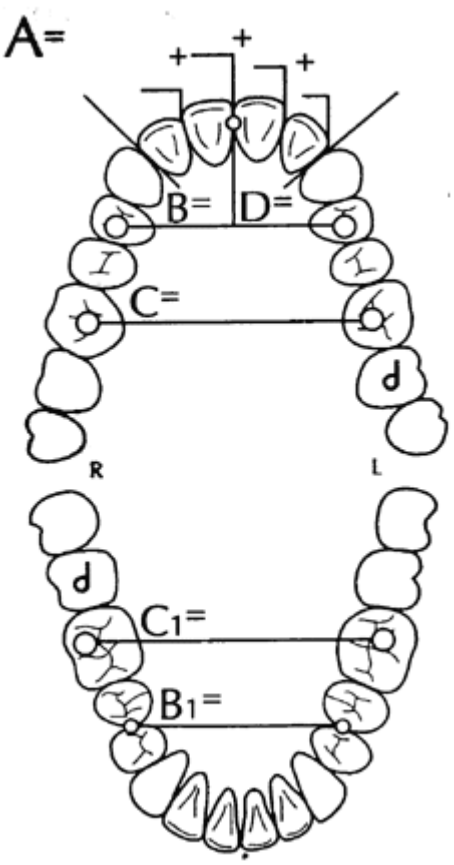
Primitives

The following illustration shows the primitives, i.e. the conceptual relationships between the defined objects:



The dependencies between the primitives are summarized in the following picture:

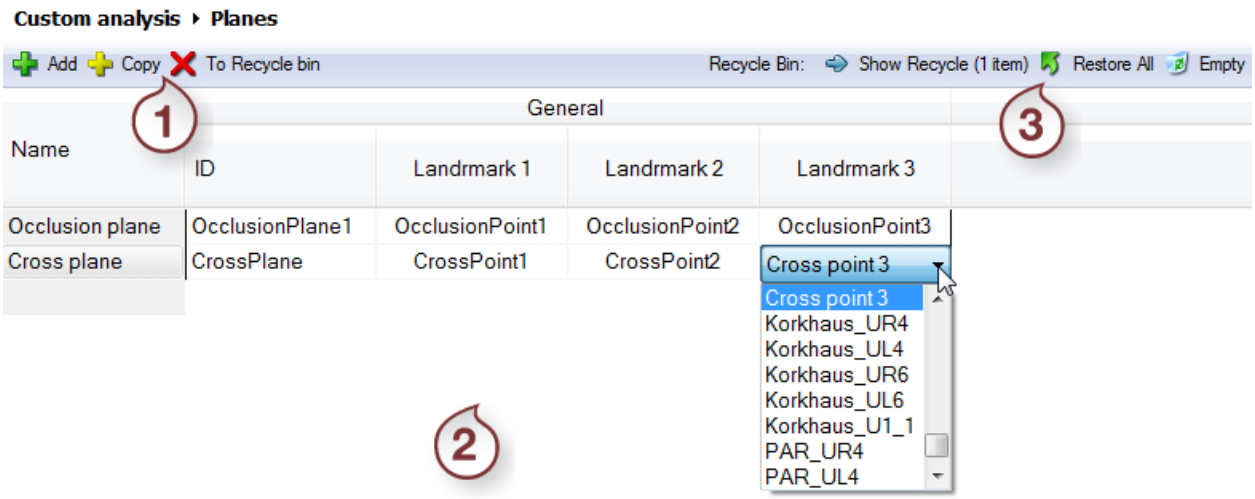




Example: Korkhaus-Schwartz Analysis: a custom analysis has been created in your installed system and we will use it as a working example of the concepts applied to the custom objects and analyses (image to the left).

Landmarks, Angles, Distances and **Custom splines** sections have almost the same settings as

- **planes:**

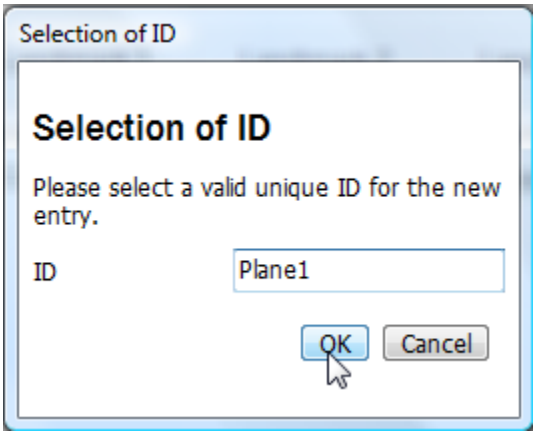


Landrmark 3

1. *Operation buttons*
2. *List of planes*
3. *Recycle Bin*

1. Customize the available planes

Click ***Add*** to create the new plane and enter the ID for it:



Otherwise, click ***Copy*** to duplicate the existing plane. It is possible to give a new name to the copy.
Select ***To Recycle bin*** to delete the plane from the list.

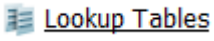
2. Edit the List of planes

Double click the **Name** or **ID** of the plane to edit the appropriate field. Double click the **Landmark 1(2,3)** section to select the landmark type from the drop-down menu (see the image above).

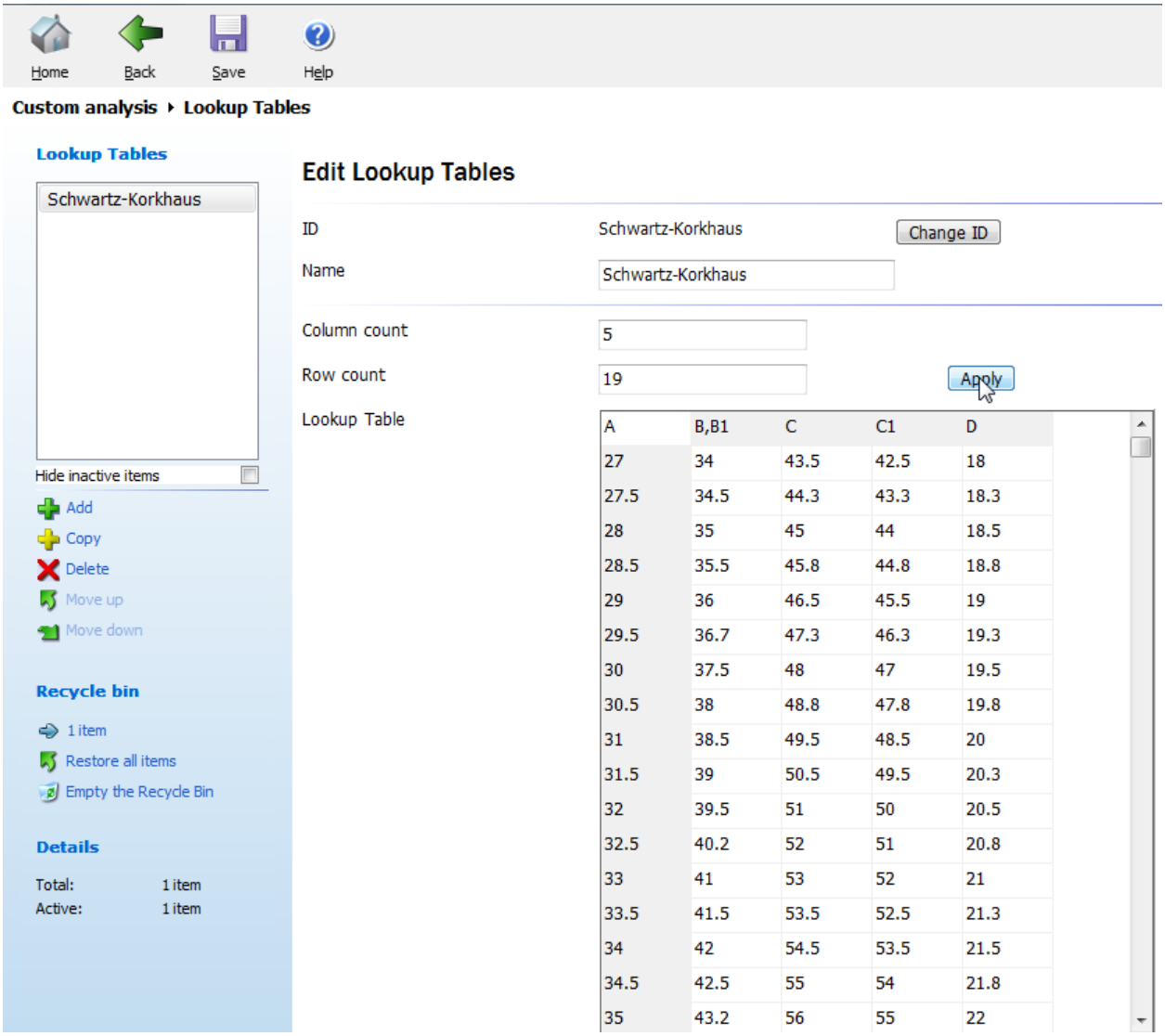
3. Work in the Recycle bin

After clicking the Show Recycle (1 item) button you open the list of the items in the Recycle bin. It is possible to select to Restore the particular item or to Restore All. Otherwise ***Delete*** it or ***Empty*** the Recycle bin.
Click Back to List to exit the Recycle bin.
All the options are available in the pop-up menu after right-clicking the list.

6.2 Lookup Tables



To create a reference lookup table for your analysis workflow, go to the **Lookup Tables** tab to open an editing window (see the image below).



A Lookup Table with 5 columns and 19 rows was defined with values from the following website: http://www.johnsdental.com/articles/ortho/Scwzkork1.htm

To create a new table, click the ***Add*** button and name your table as desired (e.g. Schwarz-Korkhaus). Enter the necessary amount of columns and rows in the corresponding fields, choose the amount of columns and click ***Apply***. After the table has been created, you can modify it by left-clicking on the columns and entering the respective values.

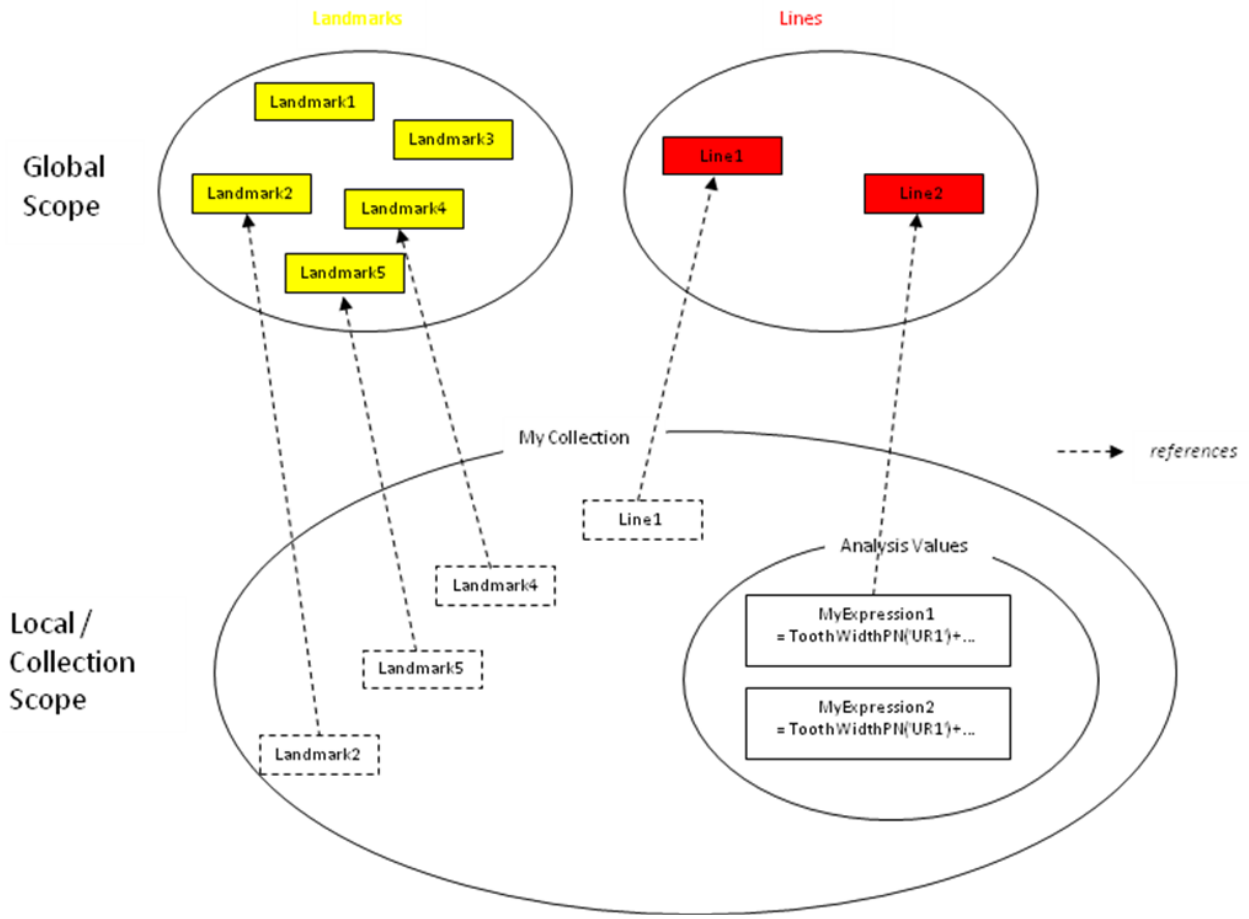
Other sections and options of the window are described in details in chapter Construction Elements.

6.3 Collections

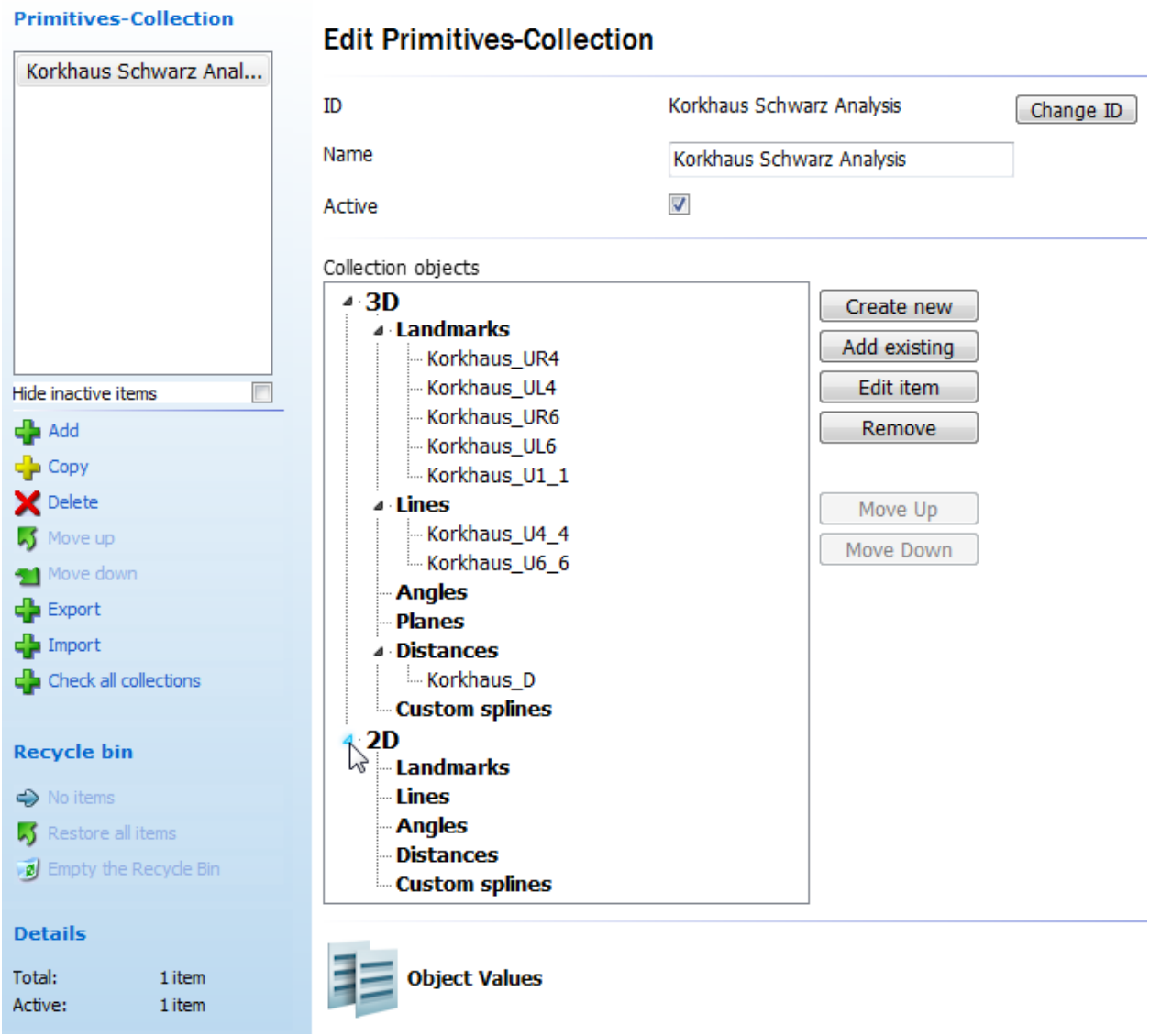
Collections

In the **Collections** tab you can create a group of different primitives – landmarks, lines, angles, planes, distances, splines and object values, which will typically correspond to the full analysis protocol you want to create.

The following image illustrates collections and how **Primitives** can be applied to separate **Collections**:



Click the corresponding button in the **Custom analysis** section on **Home page** to open the **Collections** tab:



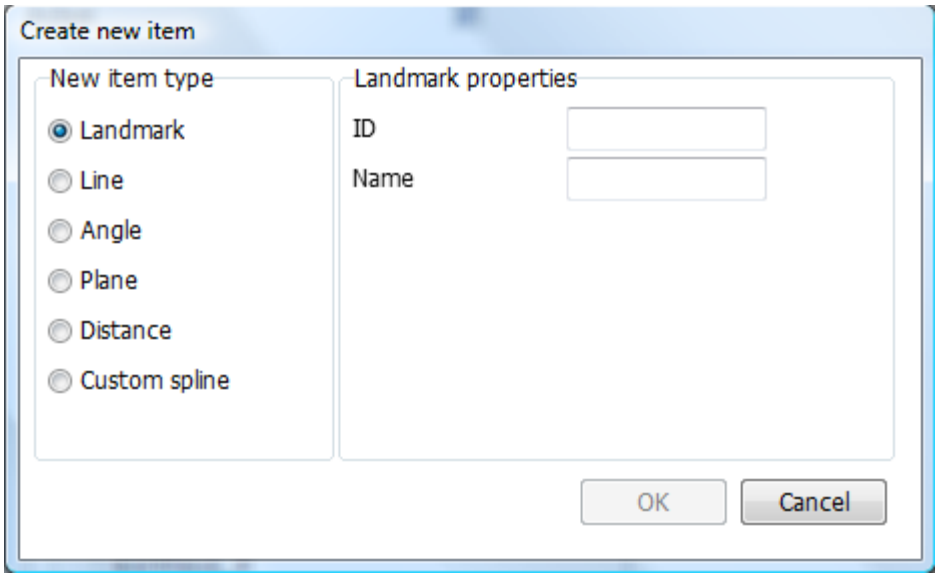
To customize the collections follow the steps described below.

Step 1: Create a collection

To create a collection, click the ***Add*** button and name your collection as desired. Select different elements from the drop down menus and click Add to add them to your collection. Click Remove to delete an element from the collection. You can ***Export*** and ***Import*** the collection with the help of the corresponding buttons (see the image above). It is possible to edit the ID and Name of the selected collection (for more information see the section Template base models).

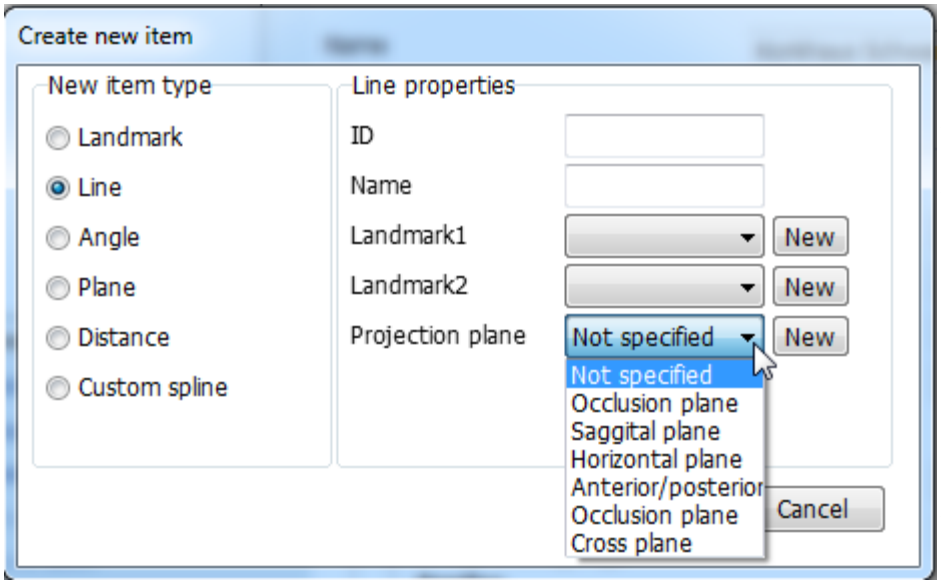
Step 2: Customize the collection

You can observe the elements forming the selected collection in the **Collection objects** tab. It is possible to fold/unfold the groups by clicking the triangle in front of the name of the group.
Use the operation buttons to the right to customize the collection or right click the selected object in the collection elements tree.



Click the New item button to add a new element to the collection. This will open the *Create new item* window. Select the **New item type** and fill the settings for each type in the right part of the window.
Each item has its specific properties. The general settings will be the **ID** and **Name** of the object (as in the **Landmark** settings).
Click ***OK*** to save the settings.

- **Line**

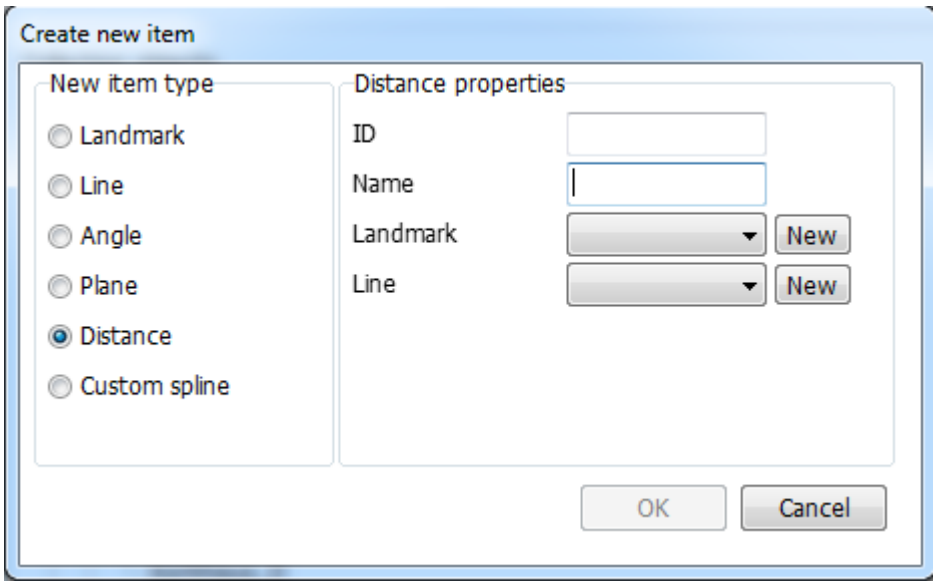


It is possible to set the **Landmark1** and **2** from the drop-down menu for the new line from the existing ones. Click the ***New*** button to create the new landmark. The *Create new item* window for landmark appears (see the previous image). You can set the **Projection plane** for the line you create.

- **Angle** and **Plane**

Have the same settings as the **Line** but for the **Projection plane**.

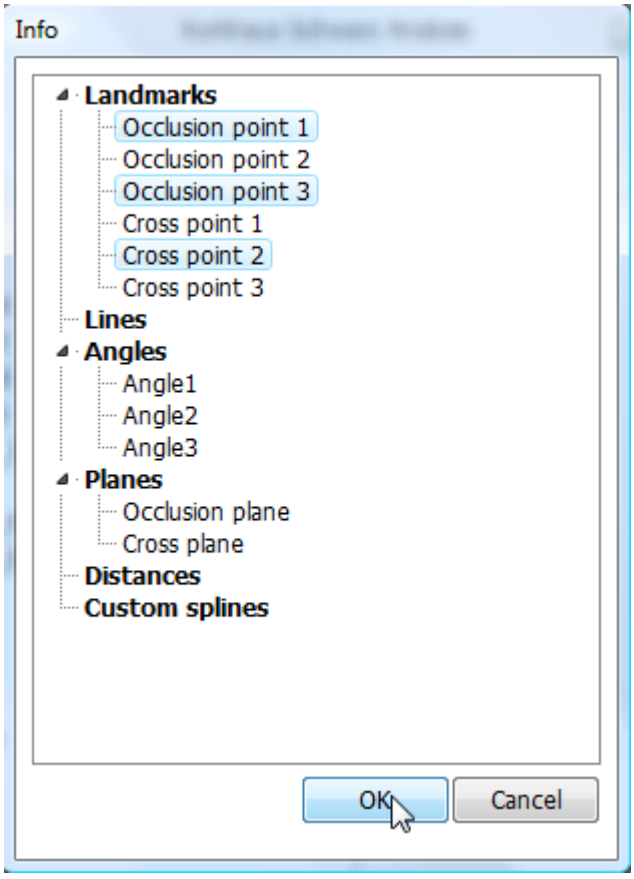
- **Distance**



Set the properties for the **Landmark** and **Line** as in the appropriate sections.

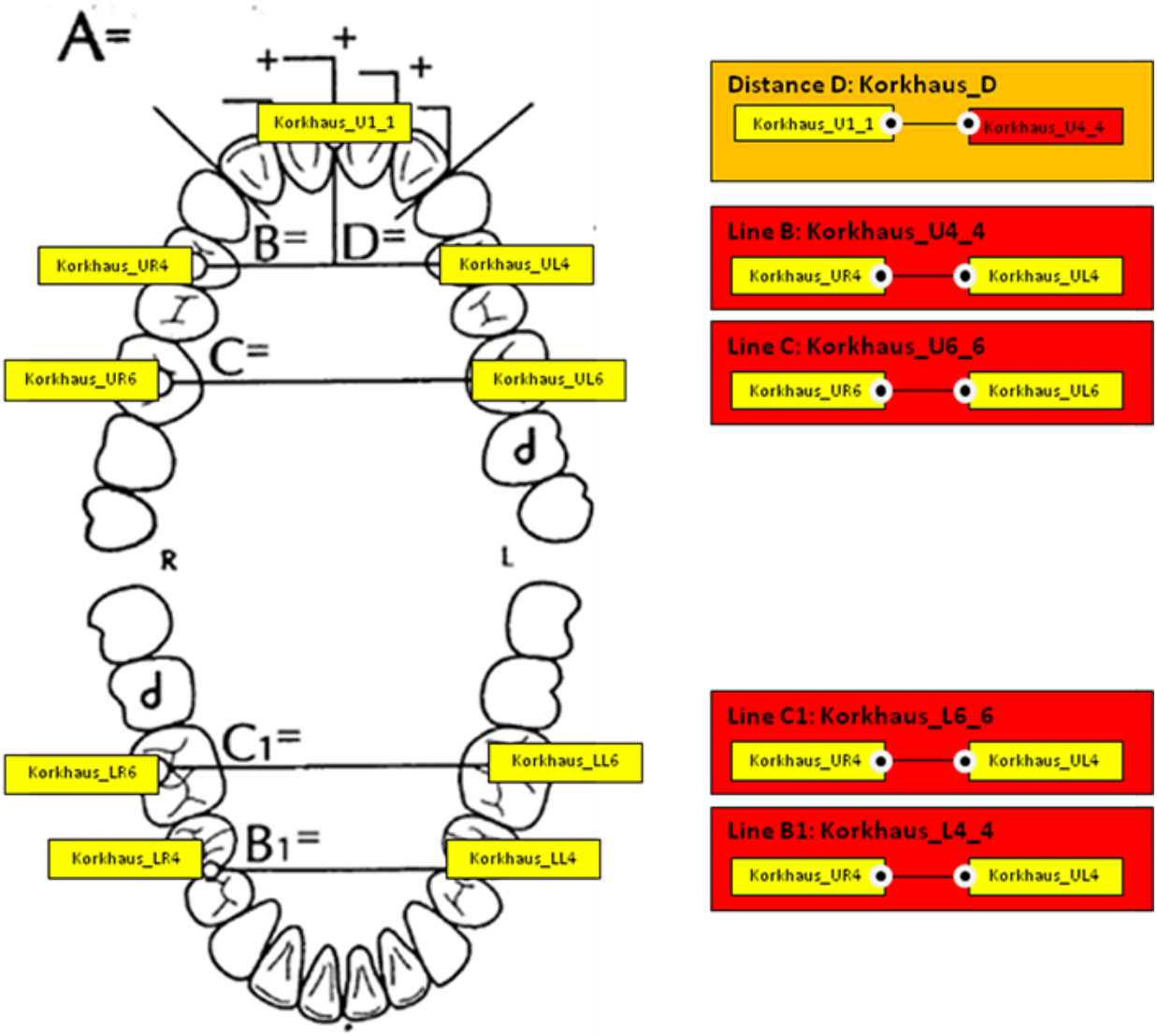
- **Custom splines**

Have the same list of settings the Line but for the Landmarks.



It is possible to add new element to the collection by clicking the ***Add existing*** button.
The *Info* window appears with the list of the elements available. Select the element from the collection tree by single click or holding the Ctrl button for multiple choice. Click ***OK*** to add the items to the list.

The Korkhaus Schwartz analysis Collection thus includes the following **Primitives**:

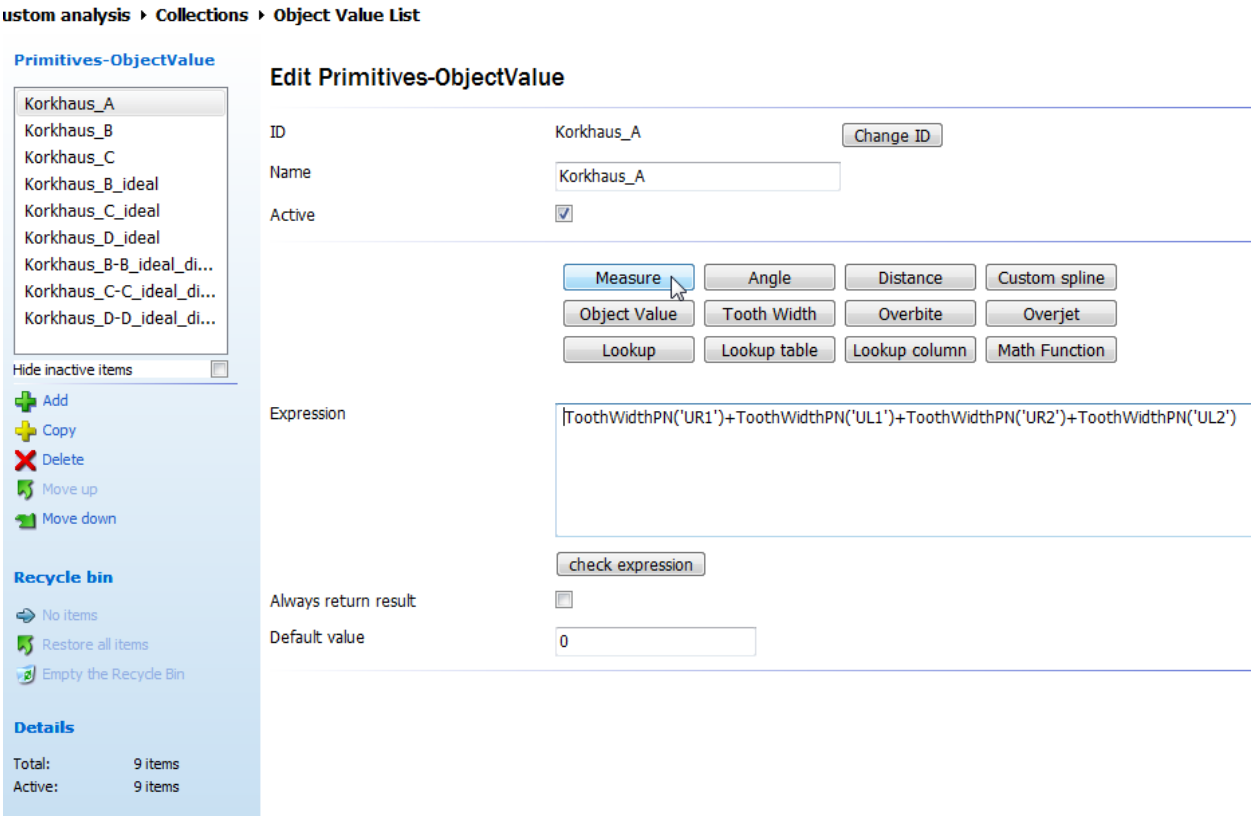


*A set of **7 landmarks** set by the user on the specific teeth (e.g. Korkhaus_UR4, Korkhaus_U1_1...)*

4 lines: Korkhaus B, defined Korkhaus_U4_4, joining the landmarks Korkhaus_UR4 and Korkhaus_UL4 etc.; and **1 Distance:** Korkhaus_D, which joins the Korkhaus_B line and the landmark Korkhaus_U1_1.

Please note that a primitive can be applied in several Collections or analyses.

At the bottom of the window there is an ***Object Values*** button where you can create some fixed values or associate some calculations to the **Primitives** you have defined in your **Collection**. The image below illustrates the *Edit Object Values* window that contains the items of the expression and the white field of the expression itself.



To create a new expression, click the ***Add*** button and name your collection as desired. Click on the necessary buttons in the table to select the desired items for your expression in the drop-down menu (see image above).

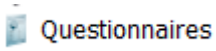
To check if the expression was created correctly, click the ***Check expression*** button. A small information window will appear informing you whether the expression was created correctly or there was an error. Check the **Always return result** checkbox to return to the default value in case of the expression failure (the **Default value** can be entered below.

Other sections and options of the window are described in details in chapter Construction Elements.

Specifically, the object values defined for the **Korkhaus-Schwartz** analysis are listed below:

- Korkhaus_A: Expression: ToothWidthPN('UR1')+ToothWidthPN('UL1')+ToothWidthPN('UR2')+ToothWidthPN('UL2')
- Korkhaus_B: Line: Korkhaus_U4_4
- Korkhaus_C: Line: Korkhaus_U6_6
- Korkhaus_B_ideal: Lookup('Schwartz-Korkhaus','B,B1',Korkhaus_A)
- Korkhaus_C_ideal: Lookup('Schwartz-Korkhaus','C',Korkhaus_A)
- Korkhaus_D_ideal: Lookup('Schwartz-Korkhaus','D',Korkhaus_D)
- Korkhaus_B-B_ideal_discrepency: Expression: Korkhaus_B-Korkhaus_B_ideal
- Korkhaus_C-C_ideal_discrepency: Expression: Korkhaus_C-Korkhaus_C_ideal
- Korkhaus_D-D_ideal_discrepency: Expression: Korkhaus_D-Korkhaus_D_ideal

6.4 Questionnaires



The Questionnaires are used for a better presentation of the customized analysis and the implementation of the scoring systems.

The Questionnaire is a powerful feature that allows you to present your customized analyses in a user-friendly manner by arranging them in a logical sequence of **Steps.**

Each step can contain the following items:

- Imported pictures to illustrate e.g. a measurement
- The written instructions
- A question with multiple choices, each answer having its own individual score
- Analysis objects (including any custom analysis object available)
- A screen capture button
- Notes to be filled by the user

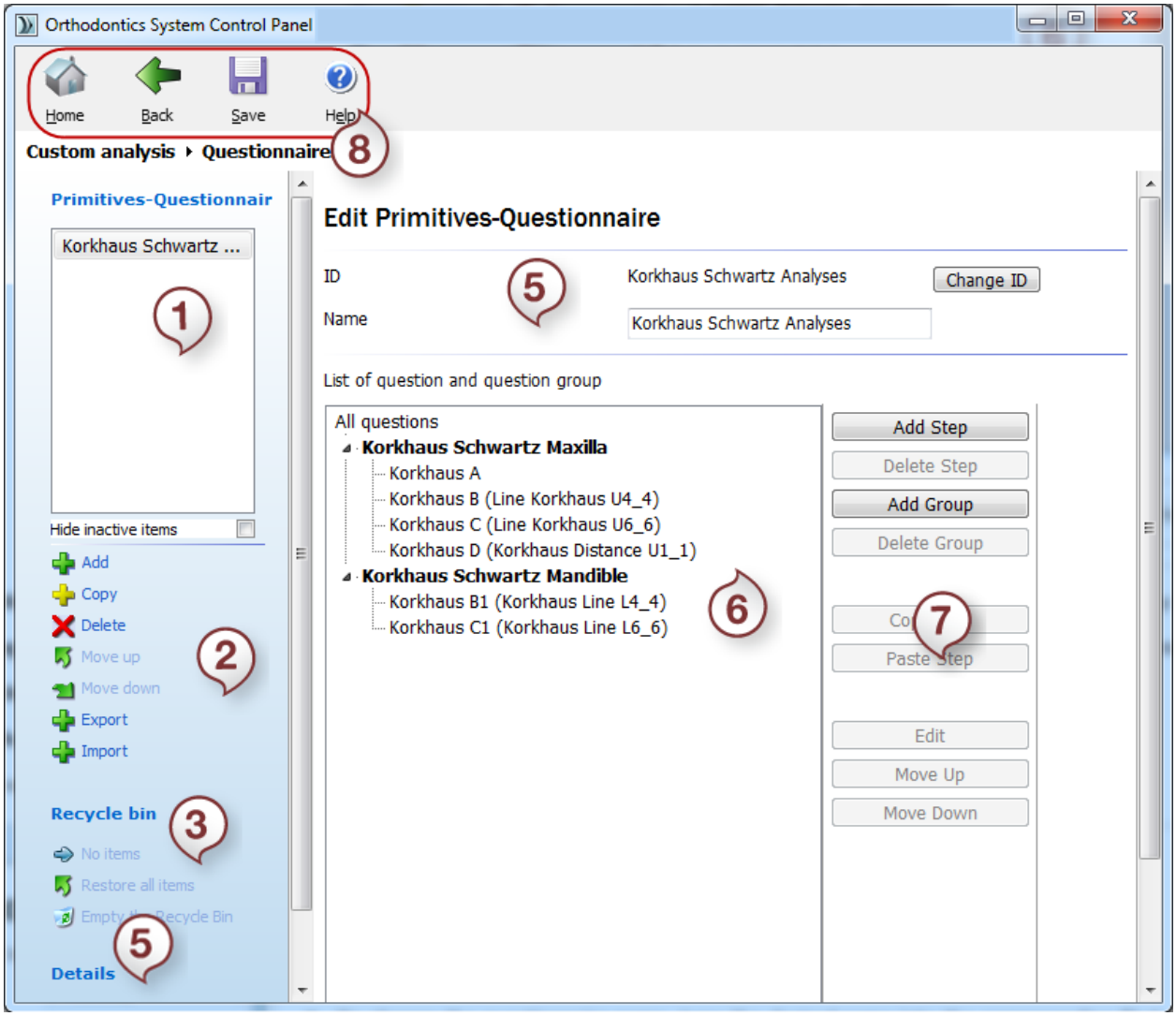
The default model and state of the patient model can also be preset for each step.

Steps can be organized freely into **Groups**.

Finally, it is possible to enter weights and scores for the individual steps and groups, thereby making it easy to compute indexes e.g. the PAR Index.

The *Edit Primitives-Questionnaire* window allows you to customize the already existing questionnaire or create a new one. In this section, we go through the settings of the PAR Index scoring system included as an example.

Image below illustrates the main sections and toolbars of the window:



1. The Questionnaire list
2. Editing Toolbar
3. Recycle bin
4. Details
5. Name and ID section
6. List of Questions and Question Groups
7. Operation Toolbar
8. Main menu

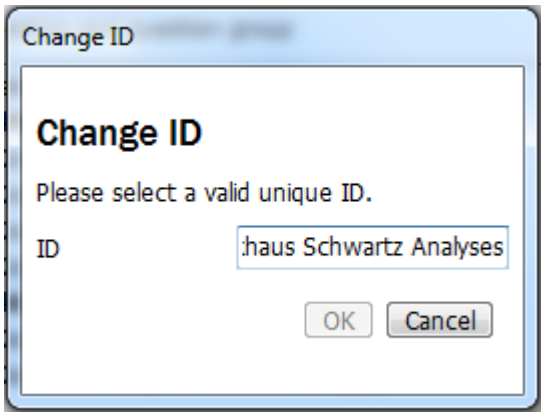
1. The Questionnaire list presents the list of the questionnaires available for viewing/editing. You can hide inactive items in the list by ticking the appropriate option under this window.

2. The Editing Toolbar allows you to add new questionnaires, copy and delete them, move questionnaires up/down in the list above and export or import questionnaires.

3. The Recycle bin shows the number of the items removed and allows to restore the items or empty the bin altogether.

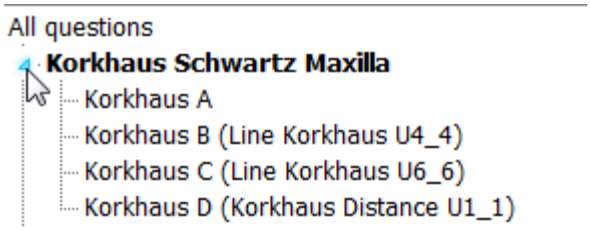
4. The Details section presents the information about the total number of items loaded and the number of active items.

5. The Name and ID section presents the name of the questionnaire and its ID.



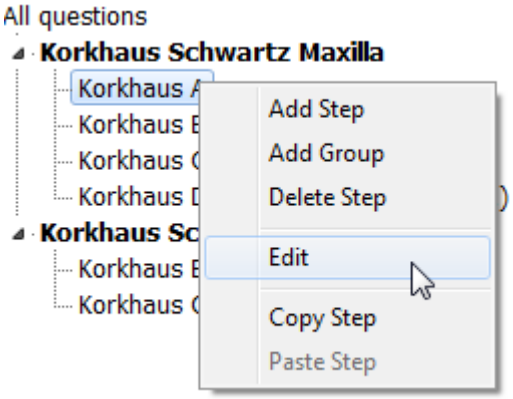
- You can change the ID by selecting the Change ID button.
- Type the new ID into the **ID** field and click ***OK***.
- To change the questionnaire name, type the desired name into the corresponding filed.

6. The List of Questions and Question Group presents the list of Groups and Steps.

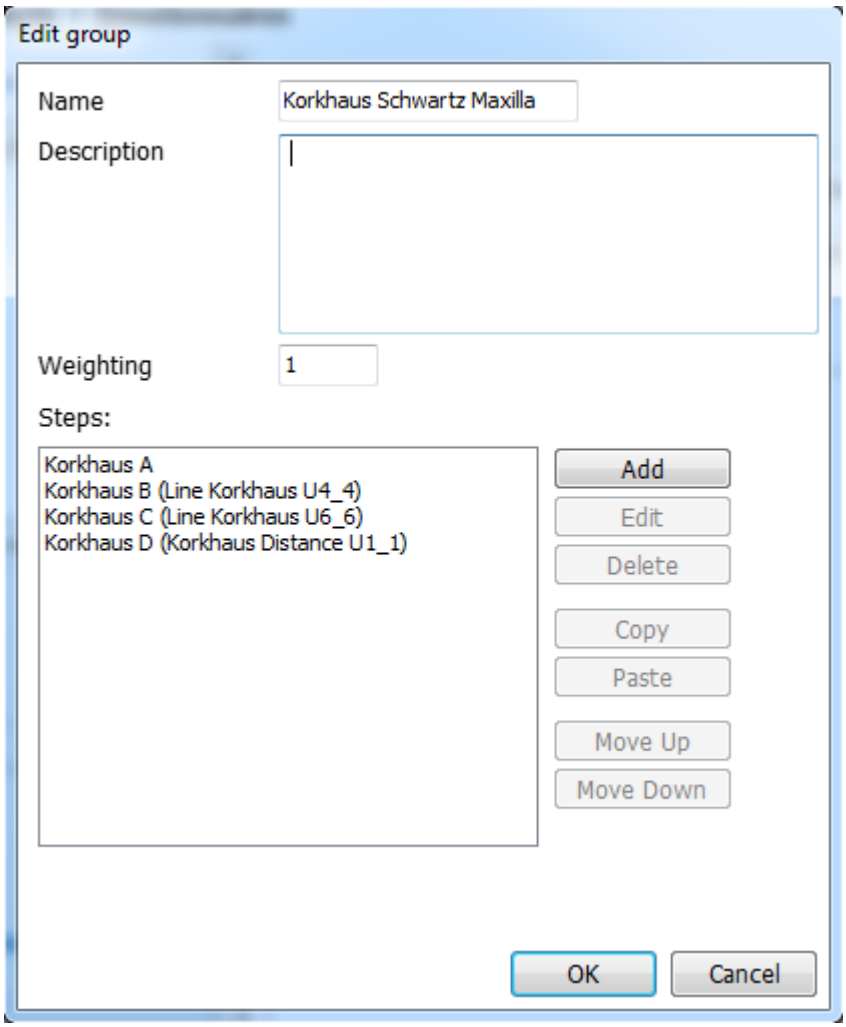


You can fold/unfold each group by clicking at the arrow in front of the group name.

To edit a step or the whole group, perform one of the following actions:



- Right click on the step/group and select ***Edit*** from the appeared menu.
- Double click on the name of a step/group to open the *Edit Step/Edit Group* forms respectively.
- Select a desired step/group and choose the ***Edit*** button from the Operation toolbar to open the **Edit Step/Edit Group** forms respectively.



While editing groups in the Edit Group window, you can enter the **Name** of the Group as well as type in the information about the group in the **Description** field.

The **Weighting** option indicates the importance of the Group in the scoring system.

The **Steps** window presents the sequence and the list of all steps in the group.

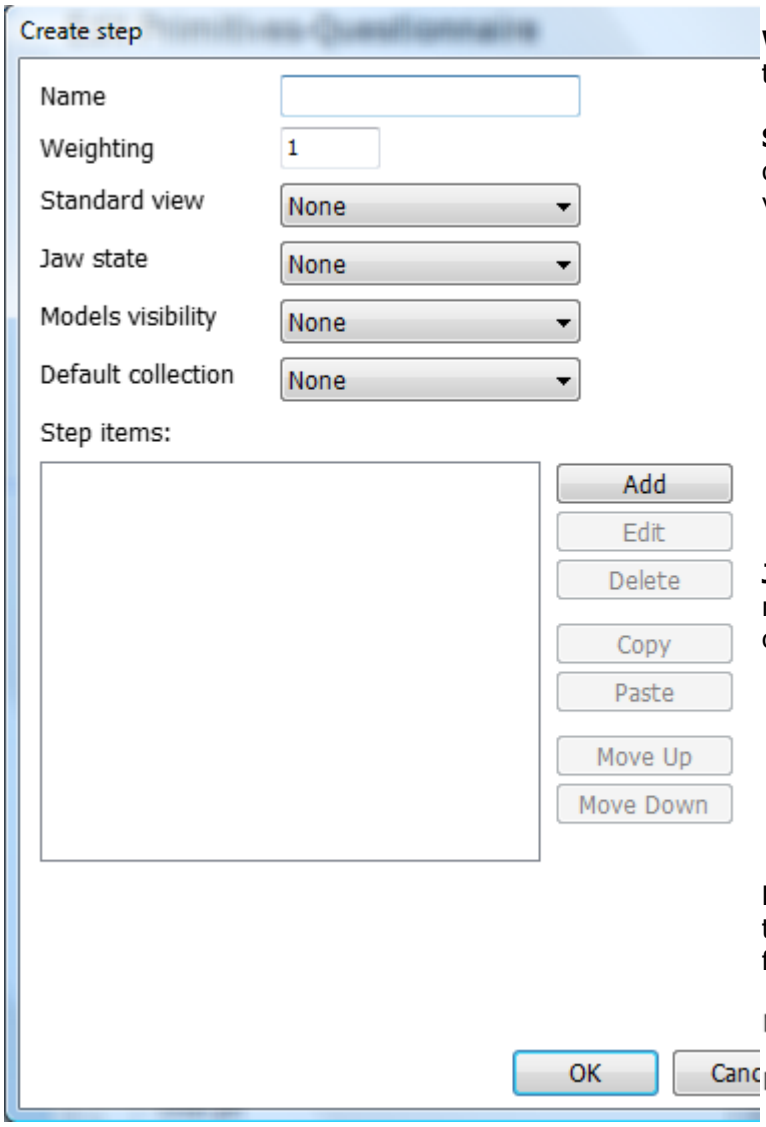
You can edit a step and the list itself by selecting the appropriate buttons in the Operation toolbar to the right.

See the information below about the Operation toolbar.

Press ***OK*** to save the changes.

The Operation panel includes such options:

- **Add**



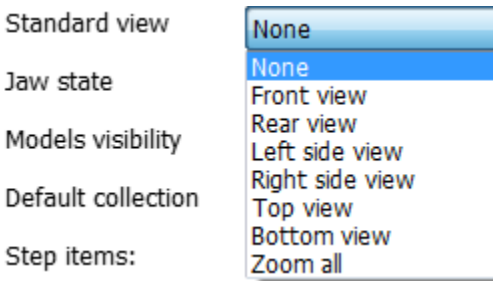
To create a step, select the ***Add*** button on the Operation toolbar.

The *Create step* window includes:

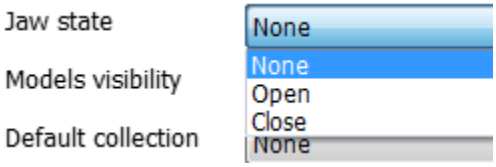
Name - insert the desired name for the step.

Weighting - insert a number for the scoring weight for the step.

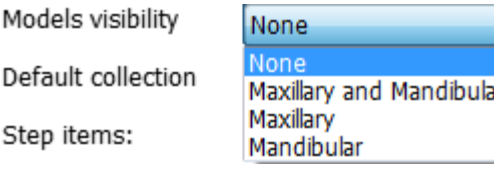
Standard view - contains the drop down menu with the model visualization options:



Jaw state - contains the drop down menu with the jaw visualization options:



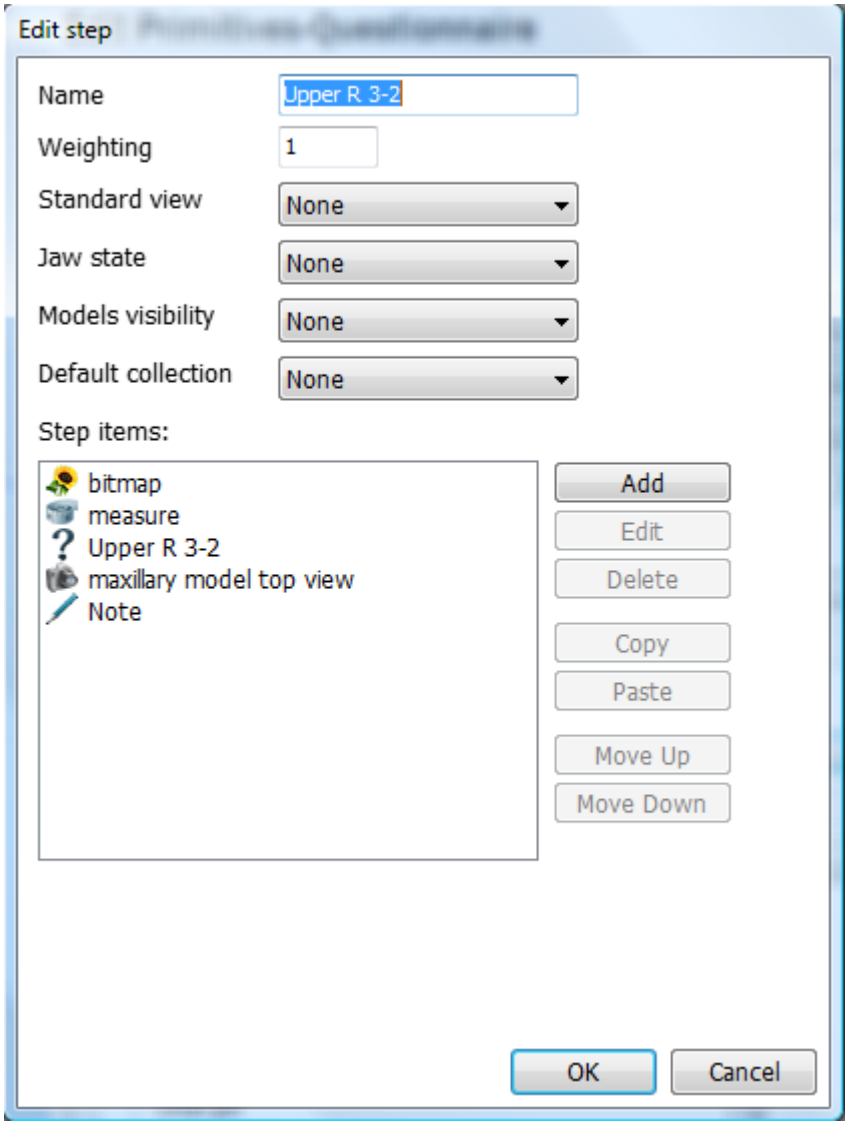
Models visibility - lets you choose the upper/lower or both models from the drop down menu:



Default collection - allows you to select the appropriate collection. For further information see the OrthoAnalyzer™ 2010 user manual (section *Analysis Objects*).

- **Edit** allows making some changes to the step you have created.
- **Delete** removes the steps.

- **Copy** creates a copy of the selected step.
- **Paste** inserts the copied item.
- **Move up** - moves the selected item up the list.
- **Move down** - moves the selected item down the list.



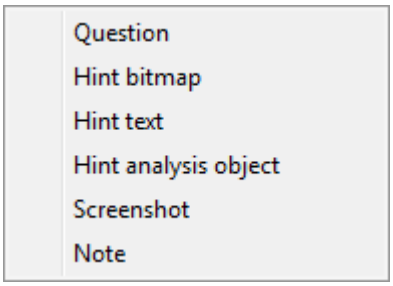
After selecting the **Edit** option for the step you will open the *Edit step* window.

Name – enter the desired name for the step.

Weighting - indicates the importance level of a question.

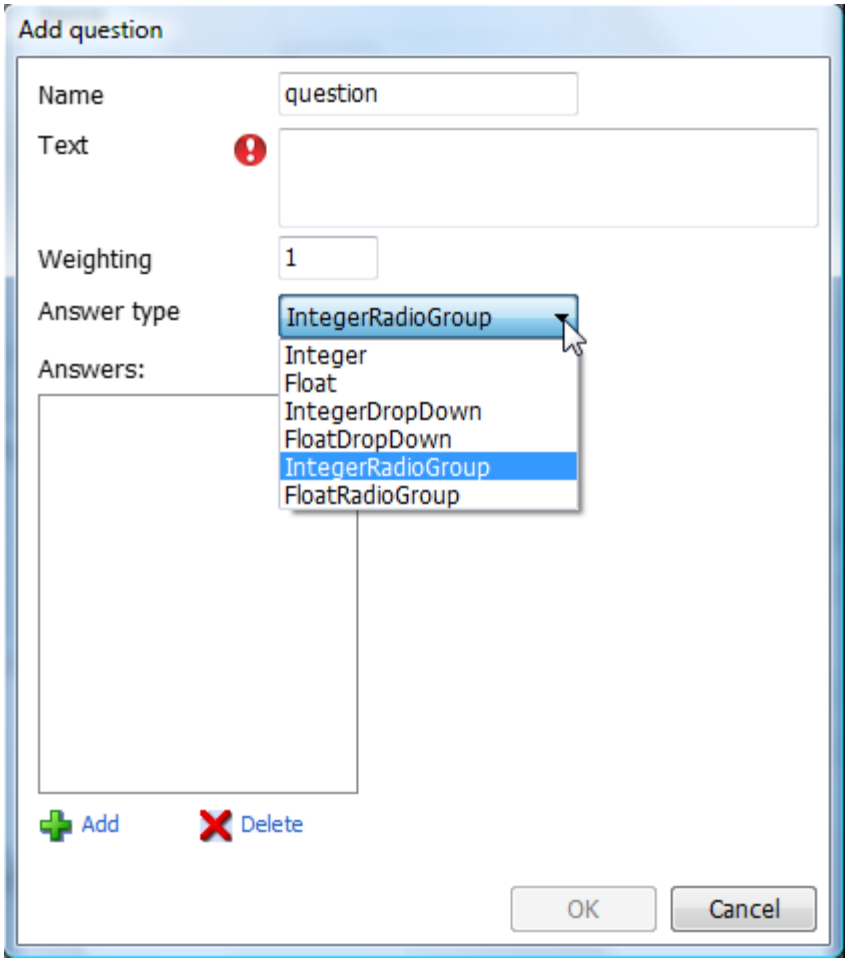
The Standard view, Jaw state, Models visibility and Default collection sections are the same as sections in the *Create step* window.

Steps items section includes the number of features that make up each step. There can be:



The number of items may vary. You can add as many items as you like, still there should be not more than one **Question.**

- **Question** - is the text with the variants of answers that allows to specify a certain problem.



Name - is the section for naming the certain question.

Text - is the space where you can type the question itself. The exclamation mark will be displayed near the **Text** field as long as it empty.

Weighting - shows the importance of the question that will be summed at the end.

Answer type - allows you to select the type in which the variants of an answer will be presented either as a list, a drop-down menu or ratio buttons.

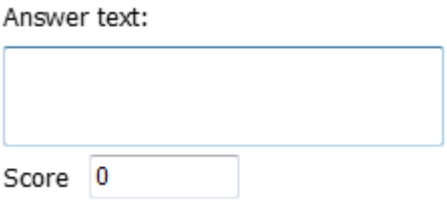
Select the appropriate type from the drop down menu.

Integer - stands for unified numerals.

Float - stands for non-integral numerals.

Answers section - shows the list of the answers.

Use the ***Add*** button to create a new variant or the ***Delete*** button to remove it.



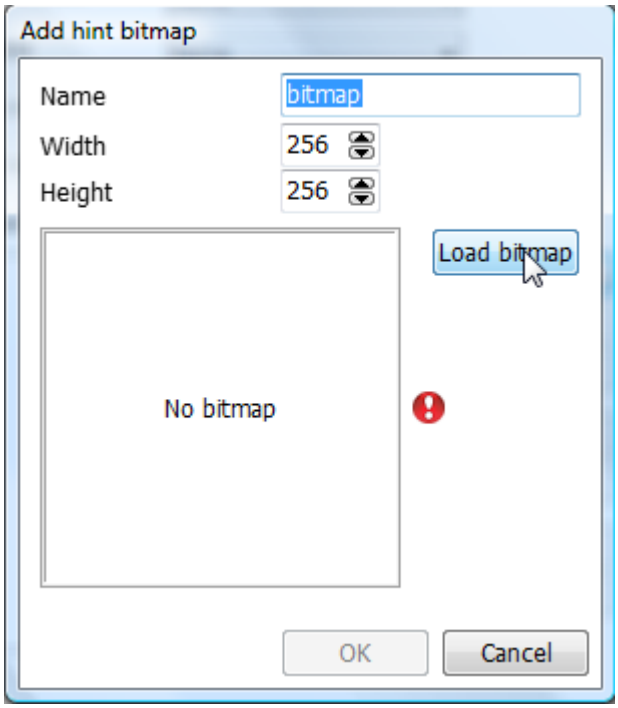
After adding the answer you can edit its content.

Answer text - is the information given as the answer.

Score - indicates the numeral value of the answer.

- **Hint bitmap** - allows you to select and display a picture to illustrate the actions required at the current setup of the questionnaire.

If you select the **Edit** or **Add** button you will open the *Add hint bitmap* window:



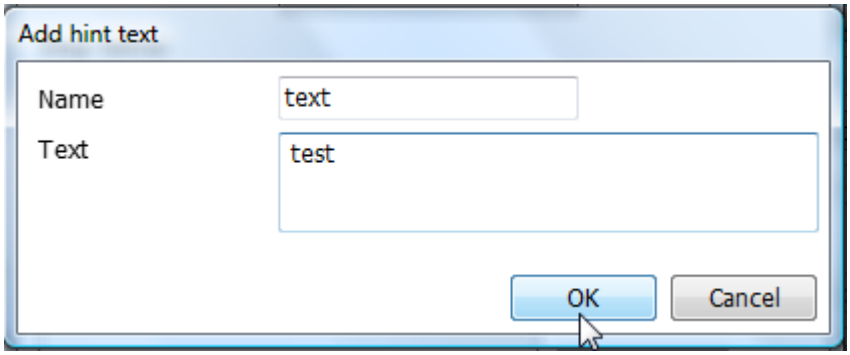
Name - enter the name of the hinting bitmap.

The **width** and **height** of the bitmap can be changed by clicking on the up/down arrows in the editing window.

To load the bitmap, press the ***Load bitmap*** button and select the picture you want to upload. The supported formats are .jpg, .bmp, .png. If the bitmap is not loaded you will see the exclamation mark near the editing window.

The picture will be displayed in the **Bitmap preview** to the left.

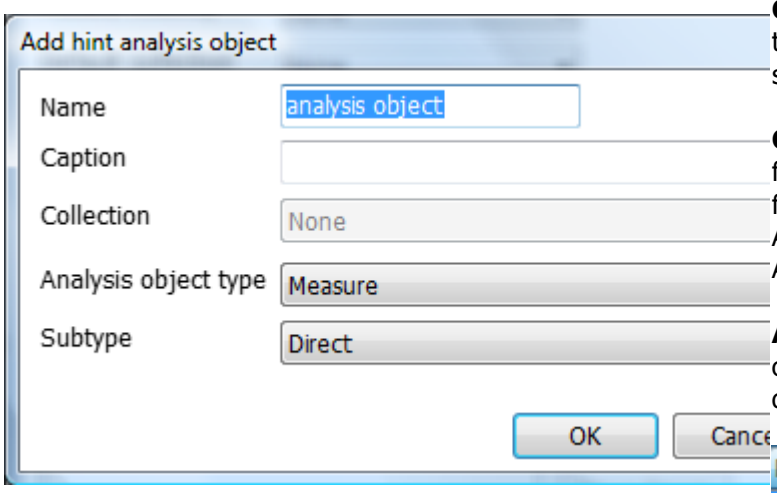
- **Hint text**



You can type the **name** of the hinting text in the appropriate section.

It is possible to add a **description**.

- **Hint analysis object**

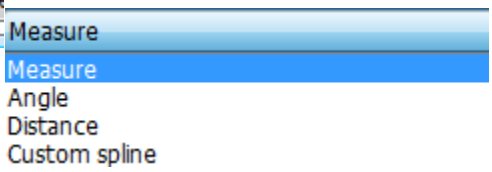


Name - enter the name of the analysis object.

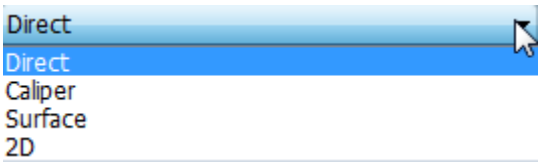
Caption - edit the description of the caption that will appear on screen for the analysis object.

Collection - select the collection from the drop-down menu (for further information see section Analysis objects in the Ortho Analyzer manual).

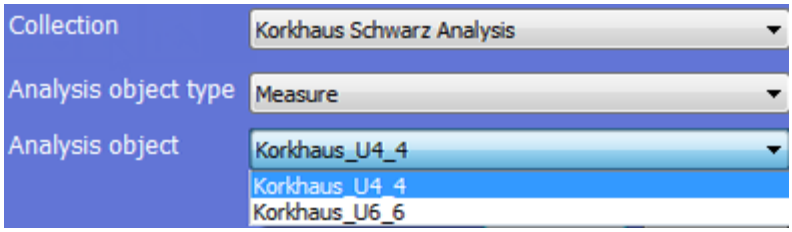
Analysis object type - select the object type for analysis from the drop down menu:



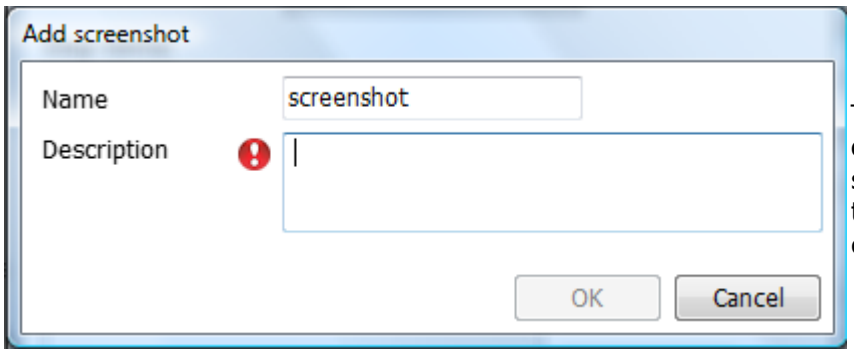
Subtype - choose the object subtype from the drop down menu:



Note: For the predefined Collections, the drop-down menu shows the available analysis objects:

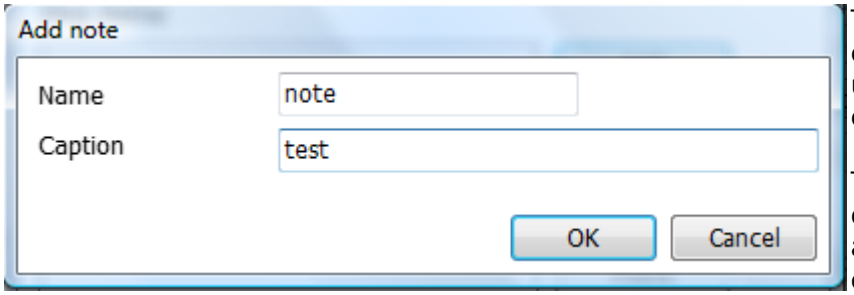


- **Screenshot**



Type in the **name** and the **description** of the screenshot to be taken by the user and click ***OK*** to save changes.

- **Note**



This field allows you to create a space in which the user can write notes in the current step of the analysis.

Type in the **name** and the description of the **caption** and click ***OK*** to save changes.

You can also **edit** the already existing items of a step. The form is the same as in adding items.

7. The Operation toolbar allows to manage the Groups and Steps:

Add step adds steps to the selected group.

Delete step removes the selected group or step.

Add group allows you to add a new group.

Delete group removes a selected group.

Copy step creates a copy of a selected step.

Paste step allows to insert a copied step.

Edit opens the editing window.

Move up moves the selected group or step up the list.

Move down moves the selected group or step down the list.

8. The Main menu allows you to save the changes in the questionnaire file. Select the ***Save*** button in the main menu.

After setting the questionnaire in the Control Panel and saving the changes, you can now open it in Ortho Analyzer™ .

Note: Restart Ortho Analyzer™ if it was opened at the moment of editing the Questionnaire in the Control Panel for the changes to take effect.

6.5 Analysis Objects General Settings

Analysis objects general settings

Allows you to select the color for the enlisted objects by clicking the appropriate square section and choosing the desired color from the popping up palette. Click the ***Reset to default*** button to undo the selection: