

simodont

A NISSIN BRAND



Teacher Manual

Simodont Courseware Release v4.8.1



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Nissin Dental Products Europe B.V.

P.O. Box 187

2150 AD Nieuw-Vennep

The Netherlands

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GENERAL INFORMATION

Tips and Notifications



Tip!: Identifies an important recommendation.



Note!: Identifies an important note or an instruction that must always be observed.

Abbreviations and naming used in this manual

Procedures:

CAR	Cariology/Operative
CRW	Crown
END	Endodontics
MAN	Manual Dexterity
OA	Objective Assessment
PS	Patient Specific / Intra Oral Scan

Software Components

Simodont Courseware	The whole Simodont software package, Dental Trainer Application and Course Manager Application together.
CM	Course Manager Application running on the Teacher Station desktop
DT	Dental Trainer Application running on the Simodont
Intra Oral Scan Editor	Previously called the Cropper Tool. A tool used to isolate the region of interest from an STL/ intra oral scan, or to be used as STL viewer.

Supported procedures

Currently, the supported procedures are:

- Manual dexterity
- Cariology / operative
- Crown
- Intra Oral Patient Scan / Patient Specific treatment (STL import)
- Access Cavity Preparation (Endodontics)
- Pedodontics

For more information about the specifics per procedure, please refer also to the Content Catalog.

Other important documents

In this Teacher manual we may refer to other documents that are important:

- What is new in.... (software release highlights explained)
- Release Notes (overview of all features and bug fixes for a software release)
- Content Catalog (overview of available models, cases and instruments)

Service and support

For information about issues related to preparation, transport, storage, installation, operation, maintenance and repair that are beyond the scope of this document, please contact the nearest NISSIN facility. See the back cover of this document, or consult:

Company name	Nissin Dental Products Europe B.V.
Address	Pesetaweg 51
Postal code	2153 PJ
City	Nieuw-Vennep
Country	The Netherlands
Email address	support@nissin-dental.nl
Telephone number	+31 252 462 025

SYSTEM SETUP

1.1. SERVER

Starting the Simodont Server



Dell PowerEdge T320 / T330 / T340

The server should be best left running at all times. In case you need to start the server then press the power button  on the front of the server (this button could be hidden behind the front panel).

Login/logout

Please, contact NISSIN for the login credentials for the server. The login credentials are not shared in this manual for security reasons.

Database backup and restore

A backup of all data is created at 11 pm local time each day. These backups are stored on the server for in the folder "C:\backup".

It is highly recommended to discuss and setup a backup procedure that copies the data to a secure environment within your institute. Please contact your IT department for information (policies and procedures) regarding data storage.

Please contact NISSIN in case a database restore is required.

System Setup - Institute specific settings



Note! Do NOT change any system settings without consulting a NISSIN engineer first! There is a risk of leaving the system in non-operable state.

1.2. TEACHER STATION

Starting the Teacher Station

The Teacher Station (TS) is a computer which is mainly used by staff, but in theory could be used by students as well. The TS gives access to the CM application, which is used to plan courses, design new cases, and evaluate student attempts.

Please, contact NISSIN for the login credentials of the TS. The login credentials are not shared in this manual for security reasons.

Starting the Simodont Courseware on the Teacher Station

Double click the Google Chrome shortcut on your desktop that links to the “Simodont Courseware - Course Manager”.



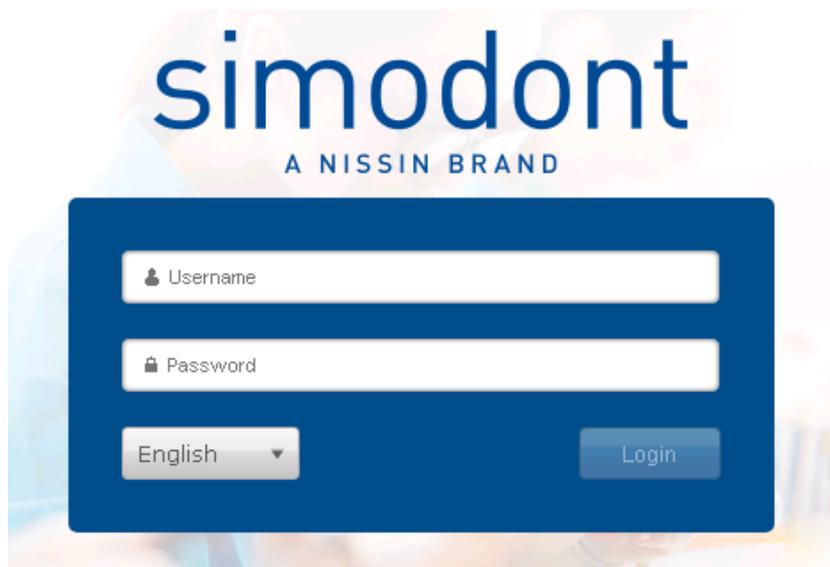
Login/logout

One or more user accounts are created for your staff members when the system is installed at your institute. In addition to that, one generic administrator account is always available.

The login credentials are not shared in this manual for security reasons. Passwords are provided during the introduction training. In case needed, please contact NISSIN Dental Products Europe B.V. for the login credentials of the administrator account and other staff members.

In order to login:

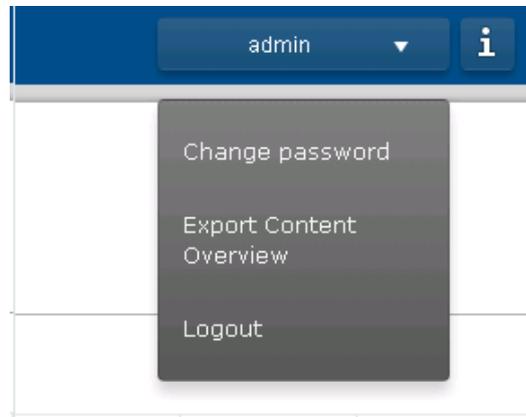
1. Enter your username
2. Enter your password
3. Press the login button



Course Manager login screen

In order to logout:

1. Go to the right upper corner, and click on your username
2. Click 'Logout'



Logout in upper right menu

Automatic logout

Since the v4.8 release, users are automatically logged out from the Simodont Courseware Teacher Station application after 30 minutes (staff members) and 15 minutes (students), in case no activity is being registered. This is a safety measure to minimize the chance of access by unauthorized users when the system is left unattended.

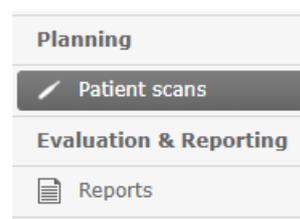
COURSE MANAGER

The CM allows the administrator, teachers and student assistants to plan courses, design new cases, and evaluate student attempts.

The CM allows students to upload intra oral scans (STLs) to their own users and download reports for preparations on intra oral scans.

The CM's main menu is found on the left side of the screen. The menu shows three sections, each containing a number of pages:

Planning	Curriculum	Planning of courses
	Groups	Management of groups of users
	Users	Management of users
Case Creation	Cases	Creation and management of cases
	Instruments	Creation of instrument sets, and management of instruments
	Models	Creation and management of models
Evaluation and Reporting	Remote viewer	Remote real-time monitoring of student activity
	Evaluation	Evaluation of submitted work
	Reports	Creation of reports



CM staff options versus CM student options

1. FIRST AQUAINTANCE

If this is the first time you start working with the Simodont system, you might want to follow the instructions in this chapter. This is a short 'getting started' -introduction that will help you to find your way with the Simodont courseware.

We start with explaining the terminology used in this manual and in the courseware. After that we give you some step by step tasks that will walk you through the basic features of the software. Each task will refer you to a certain chapter in this manual, with specific instructions regarding the topic in concern.

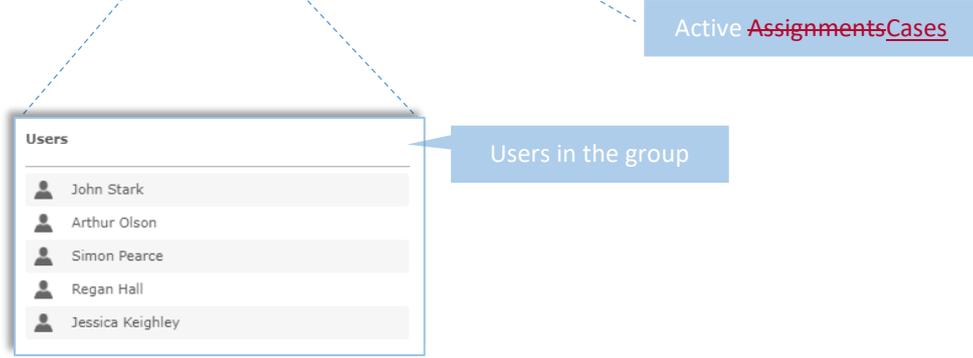
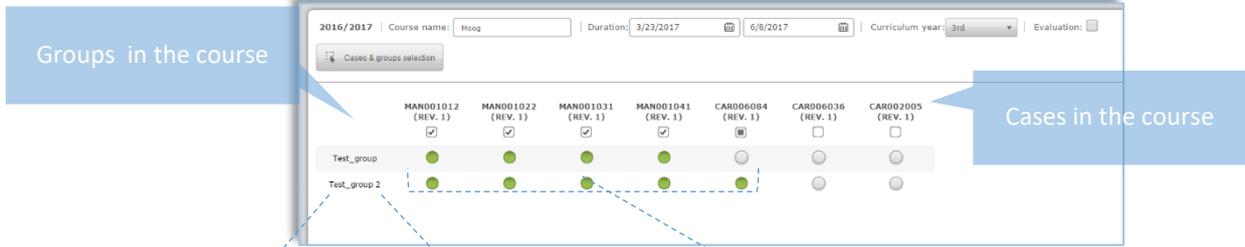
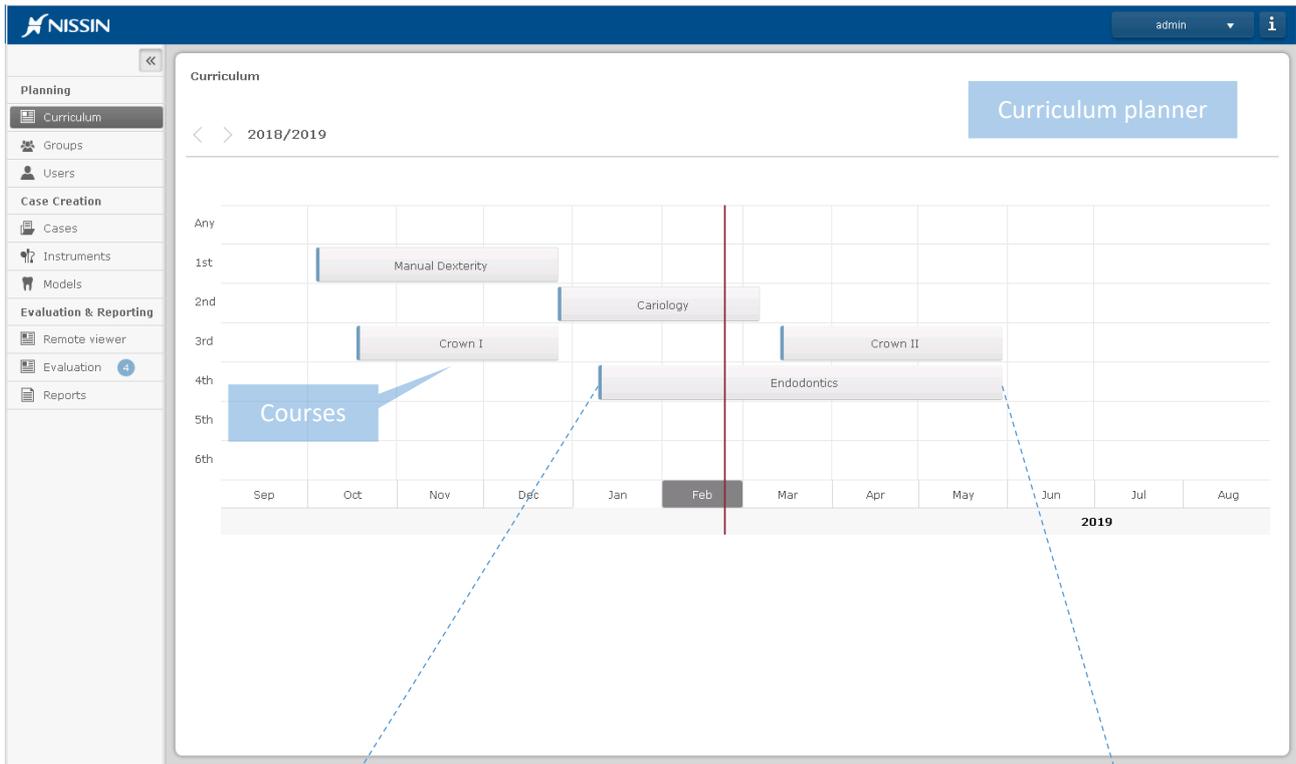
Terminology

The Simodont courseware uses the following terminology.

Curriculum	The Curriculum page is where you plan the Simodont courses for your students. The Curriculum page shows a calendar with the different courses for each academic year.
Courses	Courses are planned in the curriculum page. A course consist of at least one group and typically multiple cases.
Users	Users are all the individuals that interact with the Simodont system. Typically these are the students, student-assistants, teachers, administrators. Different users types have a different level of interaction with the system, and thereby also have different privileges.
Groups	With a group we mean a group of users. Groups are needed to be able to plan a course.
Cases	Cases are the assignments within a course. A case is composed based on the user's preferences using different optional components; like an introduction, a virtual patient, a treatment plan, a virtual model, virtual instruments, and assessment methods.
Models	With a model we mean the virtual visual model that represents a tooth or multiple teeth in a jaw, with or without a certain pathology.
Instruments	The instruments are the virtual instruments that represent the real rotary and hand instruments used to treat the patient/tooth.

The schematic overview on the next page will show how the above mentioned items relate to each other.

Schematic overview of relationship between curriculum planner, courses, groups, users and cases



Basic steps in the Simodont courseware

In order to get familiar with the Simodont courseware you can use the following steps as a guideline:

In the Course Manager:

Step 1:	Adding a new user.	Add two new users.	Follow the instructions in chapter 2.2 Users - Creating and importing users – method A adding a single user.
Step 2:	Adding the users to a new group	Add the two new users to a new group.	Follow the instructions in chapter 2.2 Users – Adding users to a group - Method B: Adding multiple users to a group.
Step 3:	Creating a course	Create a course with one manual dexterity case, one cariology case and one crown case. Make sure to select the group you just created in step 2. Make sure the course is active today (start day in the past and end date in the future) Make sure to set the “Evaluate result” option to “Yes”.	Follow the instructions in chapter 2.1 Curriculum (Course planner) – Creating a new course.

On the Simodont:

Step 4:	Login on the Simodont	Login with the user credentials of one of the users you just created.	
Step 5	Trying cases and submitting attempts	Select a case and walk through the pages of the case. Notice the different options within each case. For the cariology case, make sure to prep the tooth and submit your work.	

In the Course Manager:

Step 6	Remote Viewer	While leaving the Simodont(s) on, go to the Remote Viewer page. Play with the different settings of this page.	Read the instruction in chapter 3.3 Reporting.
Step 7	Evaluation of submitted work	Go to the Evaluation page and find your submitted work. Open the attempt and review your work.	Read the instructions in chapter 3.2 Evaluation.
Step 8	Reporting	Make a group report.	Follow the instruction in 3.3 Reporting – Creating a group report.

Customizing the instrument sets

In the Course Manager:

Step 9	Customizing the instrument sets	Customize the predefined instrument sets according to your preferences.	Follow the instruction in chapter 4.3 Instruments and instrument sets – Customizing the predefined instrument sets.
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On the Simodont:

Step 10	Trying cases	Go back to the Simodont, and see the effect of your changes.	
---------	--------------	--	--

Creating your own case

After you became comfortable with the basic steps it is time to create your own case.

In the Course Manager:

Step 11	Creating a new case	Create a new case based on your own preferences. When you are done make sure to save and publish	Read the instructions in chapter 4.1 Cases
Step 12	Add your case to the course	Edit the course you created in step 3, and add the new case to it. Make sure to enable the assignment (green dot).	Read the instructions in chapter 2.1 Curriculum (Course planner) – Editing an existing course.

On the Simodont:

Step 13	Trying cases	Go back to the Simodont, and see the effect of your changes	
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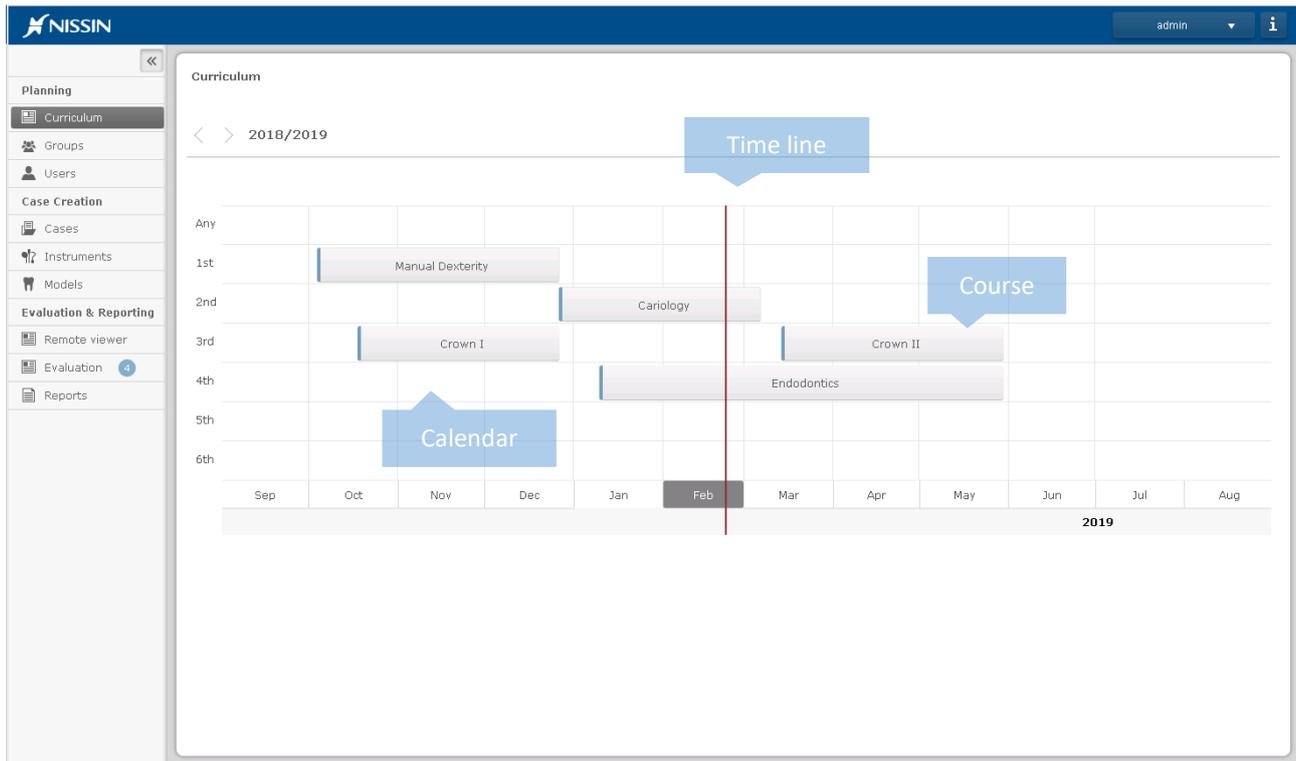
2. COURSE PLANNING

2.1. Curriculum (Course planner)

Simodont Courses are planned using the Course planner. The course planner has three pages.

The curriculum calendar

The curriculum calendar gives an overview off all courses. This is also the place to create new courses.



The curriculum calendar

The assignment matrix

When double clicking on a course you will see the assignment matrix. In the assignment matrix you are able to enable /disable case assignments per group.

The screenshot shows the NISSIN interface for the 2018/2019 course 'Cariology'. The interface includes a sidebar with navigation options like 'Curriculum', 'Groups', 'Users', 'Case Creation', 'Instruments', 'Models', 'Evaluation & Reporting', 'Remote viewer', 'Evaluation', and 'Reports'. The main content area displays the assignment matrix with the following details:

- Course name: Cariology
- Duration: March 7, 2019 1:00 AM to May 23, 2019 2:00 AM
- Curriculum year: 2nd
- Evaluate result: No
- Load snapshots with teacher approval:

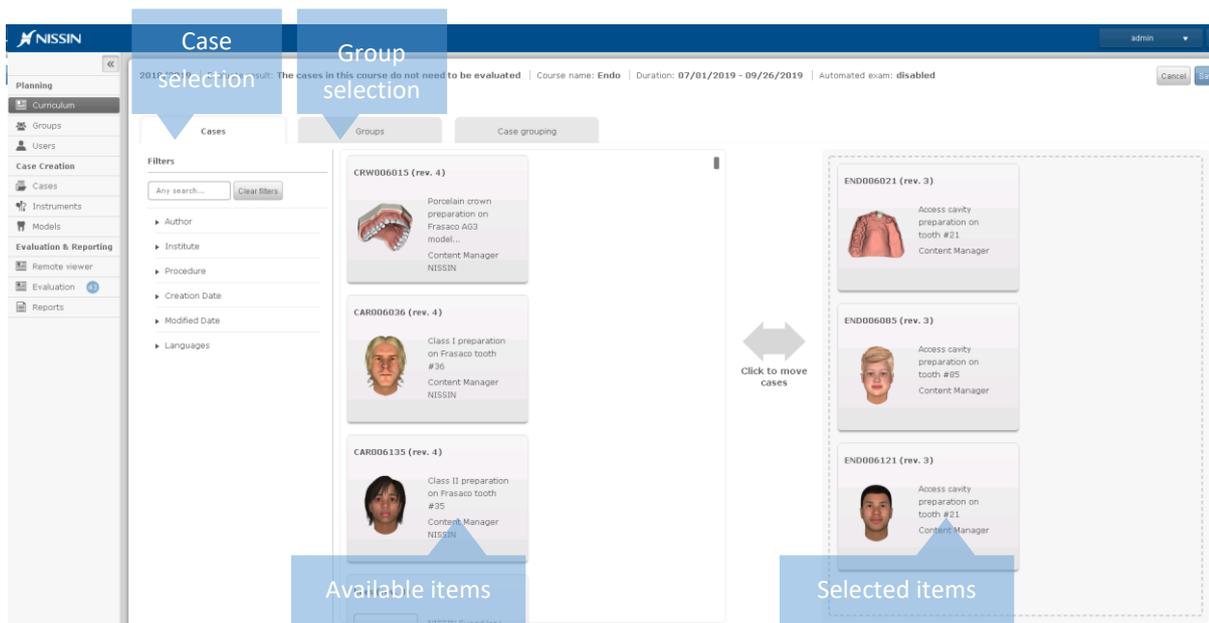
	CAR002001 (REV. 2)	CAR002002 (REV. 1)	CAR002003 (REV. 1)	CAR002004 (REV. 4)	CAR002005 (REV. 1)	CAR002006 (REV. 1)	CAR003001 (REV. 2)
Group A	<input checked="" type="checkbox"/>						
Group B	<input type="checkbox"/>						

Annotations in the image include a blue callout box labeled 'Cases' pointing to the case headers and another labeled 'Groups' pointing to the group rows.

Assignment matrix

The Groups and cases selector

The groups and cases selector is accessible via the assignment matrix page (via the Cases & groups selection button) and is used to compose a course. The selected items (both the groups and cases) are shown in the assignment matrix.



Groups and cases selector

Case grouping

Cases can be grouped together such that on the Simodont the student sees one tile containing a number of cases.

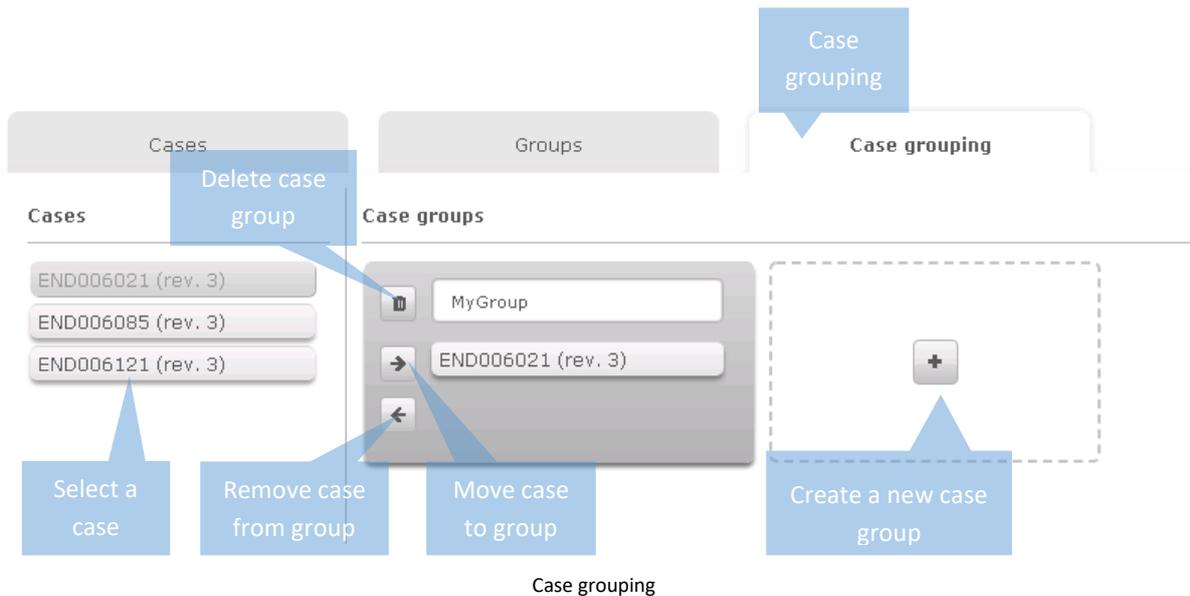
1. Add a new case group by clicking the + button
2. Enter a name for the case group
3. Select a case
4. Move it to the group by clicking the -> arrow

To remove a case from a group:

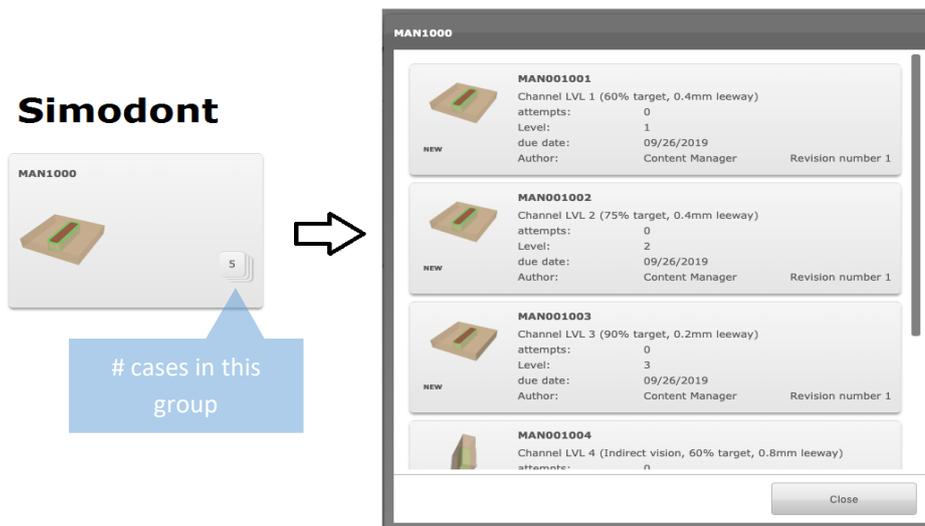
1. Select the case in the case group
2. Remove it from the group by clicking the <- arrow

To remove a case group:

1. Select the case in the case group
2. Remove it from the group by clicking the recycle bin left of the group name



Case grouping



Grouped cases on the Simodont

Creating a new course

5. Go to Curriculum page.
6. Double click somewhere in the calendar on an empty spot, to create a new course. The course creator/editor opens up.
7. Fill in the course details.
8. Go to [Cases & groups selection].
9. First select the cases you want to use in the course.
10. Then click on the Groups tab and select the groups of users participating in this course.
11. In the assignment matrix, enable/disable the cases as preferred.
12. Click Save.

Double click to create a new course

Course details

Course name:	Name of the course. This name is shown in the calendar.
Duration:	This is where you select the start and end date and time of the courses. Courses are only visible on the Simodont between the start and end date.
Curriculum year: 1 st – 6 th	This selection solely determines how the course appears on the calendar. For example, if you select 2 nd here, then the course will appear in the row for the second year. It does NOT link to the year of users or groups.
Evaluate result:	Enable this setting if you want to be able to assess all individual attempts from this course in the Evaluation environment. Please be aware that results are captured at all times, regardless of the state of this checkbox. It is possible to enable/disable this option while the course is running as it is only resulting in showing or hiding the results in the Evaluation environment.
Load snapshot with teacher approval:	Enable this option if you want to allow students to reload snapshots of previous work, but only with teacher approval. This could be valuable during exam courses. When this option is enabled, the teacher will have to present his RFID card or swipe card at the Simodont in order to release the snapshot selected by the student. Note: In order for this to work, the usage for RFID /swipe cards must be enabled on the system, and the “load snapshot” option at case level must be enabled as well!
Automated exam:	Enable this option if an automatic exam must be taken after a specific amount of passed attempts. This option is only allowed for manual dexterity cases that have treatment and segment statistics enabled. The automatic scoring is used to determine if the student has failed or passed the exam. If the student has failed the exam, he/she again needs to first pass the given amount of attempt before being able to take another exam. If the student has passed the exam he/she is not able to start the case again. Note: On the Simodont a score is shown of how many attempts the student has failed or passed. This number is including the exams taken.
Exam:	By enabling the exam option into the course, the student is prevented to close the attempt by clicking Stop case or Logout. This way it is made sure that students submit their work. This option also enables auto snapshots every 5 minutes.
Cases and groups selection:	This opens the case and course selector. This is where you select which cases and which groups participate in this course. Multiple groups and cases can participate in the same course.

Assignment matrix:

The assignment matrix is where you activate/deactivate assignments per case and per group. Disabled assignments for this course will not be shown to the student on the Simodont, even if the course is running.

Editing an existing course

1. Go to Curriculum page.
2. Double click on an existing course in the calendar. The course creator/editor opens up.
3. Change the course details. When adding new cases to the course, make sure to enable the assignments for these cases in the assignments overview.
4. Click Save.

Deleting a course

Please be aware that it is only possible to delete courses that do not have any active attempts on any of the assignments yet.

1. Go to Curriculum page
2. Click once on an existing course in the calendar.
3. Press the X in the right upper corner of the course tile.



delete course by pressing X



Note! It is not possible to delete a course that already has attempts.



Tip! In case the course only has assignments, but no attempts, then deactivate the assignments in the assignment matrix before deleting the course.

If a course already has attempts, you could set back the end date of the course in order to “disable” the course.

Removing a case assignment for a single user

Removing assignments for a single user is done by removing the user from a group. This means that all case assignments made for this group are removed for this user. Removing a single case assignment for a single user is not possible.

1. Go to the Groups page
2. Select the group that the user is part of
3. In the details pane, look for the user that you want to remove from the group.
4. Click the recycle bin

Deleting a user from a group can only be done under the condition that this user does not have any case attempts for any of the cases.

Removing assignments for multiple users

Removing assignments for multiple users is done by removing a group from a course. This means that all case assignments for users within this group for a particular course will be removed.

1. Go to the Curriculum page
2. Double click the course tile in the calendar
3. Go to Cases and groups selection
4. Go to the Groups tab
5. In the right section, click the group to remove it from the course.

2.2. Users

The Simodont software distinguishes four different types of users (user roles):

- Students
- Student assistants
- Teachers
- Administrators

All these users are managed on the Users page of the CM.

The following picture shows an example of the users page and its sections.

The screenshot displays the 'Users' management page in the NISSIN software. The interface includes a sidebar with navigation options like 'Planning', 'Curriculum', 'Groups', 'Users', 'Case Creation', 'Cases', 'Instruments', 'Models', 'Evaluation & Reporting', 'Remote viewer', 'Evaluation', and 'Reports'. The main area shows a table of users with columns: Statu..., First nam..., Last nam..., Usenam..., Student number..., Start of study, Group..., Course..., Curriculum year, and Last login. A search and filter bar is positioned above the table. On the right, the 'User details' panel for 'Jessica Keighley' is visible, containing fields for First name, Last name, Username, Email, Student number, User role, Handedness, Start of study, Curriculum year, Last login, and Languages. There are also buttons for 'Reset password' and 'Reset RFID card'. At the bottom right, there are 'Delete', 'Cancel', and 'Save' buttons. Blue callout boxes highlight 'Active filter', 'Search & filter', 'User list', and 'User details'.

Users list:

This is a list with all users.

User details:

This section shows the details of the selected user. Such as user role, email address, but also information about groups and courses the user is participating in.

Search & filter:

This is where you can search for specific users

Active filter:

This is where you can filter the users based on their active state.

Add & import users:

This is where new users are added by manual addition of a single user or batch import using a CSV file.

User role and rights

Each user type has its own set of privileges.

When a user logs in to the CM or SA, it will automatically see only those application functionalities that are applicable to that particular user role.

The privileges per user role are explained in this table:

User Role	Teacher Station				Simodont	
	Course Planning, Assessment and Reporting	Case Creation	Case Publication and Sharing	Intra oral scan upload and personal reporting	Case Execution	System Calibration Tool
Administrator	V	V	V	V	V	V
Teacher	V	V		V	V	
Student Assistant		V		V	V	
Student				V	V	

Creating and importing users

Method A: adding a single user

1. Go to the Users page.
2. Click '+ New user'.
3. Enter the new user's information. Mandatory fields are marked with an asterisk.
4. After filling in at least all the mandatory fields, Click 'Add'.
5. After this, you can login at the Simodont or Course Manager with the user if the correct role has been chosen.

The screenshot shows a 'New user' dialog box with the following fields and options:

- First name: Text input field with placeholder 'Type here...'
- Last name: Text input field with placeholder 'Type here...'
- Username *: Text input field with placeholder 'Type here...'
- Student number *: Text input field with placeholder '0'
- Email: Text input field with placeholder 'Type here...'
- Password *: Text input field with placeholder 'Type here...'
- Description / note: Text area with placeholder 'Type here...'
- Start of study: Dropdown menu with '2016/2017' selected.
- Curriculum year: Dropdown menu with '1st' selected.
- Active: Checkmark icon.
- User role *: Dropdown menu with 'Super User' selected.
- Copyrights *: Dropdown menu with 'Moog Inc.' selected.

Buttons at the bottom right: 'Cancel' and 'Add'.

For more information on the user details please refer to Edit user paragraph.

Method B: Batch import users

1. Go to the Users page.

2. Click 'Import users'.
3. Download the example file.
4. Fill the example file with your users, remove the example users, and save the file as CSV.
5. Go back to the CM, 'Import users'
6. Click 'Choose File'.
7. In Windows Explorer, select your CSV users file.
8. Click 'Open'.
9. Click 'Import'.
10. In the preview, check for possible errors. Errors are indicated in red.
11. Click 'Import' again to proceed importing users or choose 'Cancel'.
12. After the import, an import summary is given to show which users were imported successfully. You can close this window or you could directly add them to a group > Add to group.



Tip! Download the example file to see how to setup your user import file (CSV).

Go to 'Import users' and click 'example file' to download the file.



User import file preparation

In order to batch import users you will need to prepare a Comma Separated Values File. This CSV file can be created using MS Excel, OpenOffice or Notepad. The imported file must contain a header and needs to be structured as shown in the image below.

	A	B	C	D	E	F	G	H
1	firstname	lastname	username	role	studentNumber	password	startOfStudy	year
2	John	Stark	jstark	Student	abc123	VerySecret1!	2017	1
3	Jessica	Keighley	jkeighley	Student	cde234	VerySecret2!	2016	2
4	Regan	Hall	rhall	Assistant	def345	VerySecret3!	2015	3
5	Arthur	Olson	aolson	Teacher	efg456	VerySecret4!		0
6	Simon	Pearce	jpearce	Administrator	fgh567	VerySecret5!		0

Example of an import file opened in MS Excel

```
example-users (1).csv
1  firstname, lastname, username, role, studentNumber, password, startOfStudy, year
2  John, Stark, jstark, Student, abc123, VerySecret1!, 2017, 1
3  Jessica, Keighley, jkeighley, Student, cde234, VerySecret2!, 2016, 2
4  Regan, Hall, rhall, Assistant, def345, VerySecret3!, 2015, 3
5  Arthur, Olson, aolson, Teacher, efg456, VerySecret4!, , 0
6  Simon, Pearce, jpearce, Administrator, fgh567, VerySecret5!, , 0
```

Same example import file in CSV format opened in Notepad++

In case you are using a text editing program, columns need to be separated with a comma and do not use any white spaces between the commas and the content of the cells.

If you are using characters sets other than ASCII (ANSI / Windows-1252), please make sure to use the UTF-8 file format! For example if you want to use east-Asian character sets. Please be aware that you are not able to use non-ASCII characters for the username or password because the virtual keyboard on the Simodont does not support these characters.

Possibilities for importing and updating user data

Header item	Description	Mandatory at first import	Mandatory when updating users	Possible to change through update
firstname	First name of the user.	No	No	Yes
lastname	Last name of the user.	No	No	Yes
username	The 'username' needs to be unique. The username is used as base reference when updating user data through user import. Therefore usernames cannot be updated afterwards!	Yes	Yes	No
role	This is the user's role. Accepted inputs are: Student, Assistant, and Teacher.	Yes		Yes
studentNumber	The student number is required at first import, but only for users with the role 'student'. The student number needs to be unique. It is allowed to leave this field empty for users with the role 'teacher', 'admin' or 'assistant'.	Yes	No	Yes
password	This is user's initial temporary password. After the first login attempt on the Simodont, the user is forced to change this password.	Yes	No	No
startOfStudy	This is the year the user started the study. When a year is chosen, the system	No	No	Yes

automatically converts this to the school year.
'2014' becomes 2014-2015

year	Current curriculum year. Possible options are '1' to '6', or '0' in case year is not applicable.	No	No	Yes
active	This is the state of the user. Possible options are 'true' or 'false'. By default the state of a user is active.	No	No	Yes

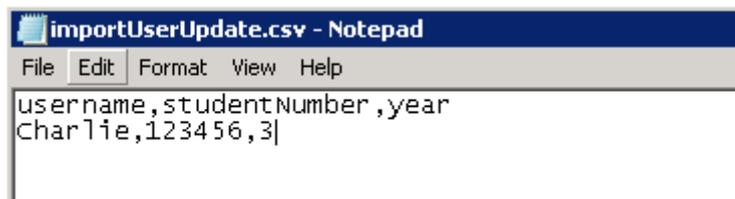
Updating user information

It is possible to update user information manually by editing a single user, or by uploading a file with existing users.

When updating user information via uploading a new CSV file you do not have to include all columns in the file. Only the username is always required. For example, if you solely want to update the 'year' for several students, you only have to include the username and the year in the file and upload this via the 'Import users'. Or keep the columns that do not need to be changed empty, these will then be ignored.

	A	B	C	D	E	F	G	H
1	firstname	lastname	username	role	studentNumber	password	startOfStudy	year
2			jstark					2
3			jkeighley					3
4			rhall					4
5			aolson					0
6			jpearce					0

Example of an update file opened in MS Excel.
Some columns are left empty, since these do not to be updated.



Example of an update file in CSV format opened in a Notepad.
Only the required data (username + updated data) is included in the file.
Columns are separated by a comma, and no spaces are used.

To update user information:

1. Go to the Users page.
2. Click 'Import users' and click 'Choose File'.

3. Select your CSV with updated user information and click 'Import'.
4. A message is shown "The file contains users that are already in the database,..." If you wish to update the users, make sure to check this box. Fields that will be updated are highlighted in green.
5. Click Import.
6. After the import an import summary is given to show which users were imported successfully. You can close this window or you could directly add them to a group > Add to group.

First name ...	Last name ...	Username	User role	Student nu...	Password	Start of stu...	Curriculum ...
John	Stark	jstark	Student	abc123	VerySecret1!	2018/2019	1st
Jessica	Keighley	jkeighley	Student	cde234	VerySecret2!	2016/2017	2nd
Regan	Hall	rhall	Student Assi...	def345	VerySecret3!	2015/2016	3rd
Arthur	Olson	aolson	Teacher	efg456	VerySecret4!		Any
Simon	Pearce	jpearce	Administrator	fgh567	VerySecret5!		Any

The file contains users that are already registered in the database. Checking this option allows you to update the user info for existing users with information from the uploaded file. Please note that this action cannot be undone. Passwords will not be updated.

Cancel Import

Information that will be updated is highlighted in green



Note! For safety reasons user names and passwords cannot be updated via the import of a user file.

Errors in the import file

Errors in the import file are indicated in red in the import preview. In case errors appear, it is recommended to cancel the import, and first correct these errors in the source file.

Possible errors could be:

- Missing data
- Incorrect data type
- Unknown characters

Editing a user

1. In the users menu, click on a user.
2. On the right side of the screen, you can see the user details where you can edit all information of the user (depending on your role and rights).

User details

First name:	The first name of the user.
Last name:	The last name of the user.
Username *:	The username you want to assign to the user. This field is mandatory and must be unique.
Student number *:	The student number of the user. This field is mandatory and must be unique.
Email:	The email address of the user.
Password *:	The password of a user. The user will always need a password to be able to login on the Simodont or the Course Manager.
Start of study:	This is the year the student started the study. Not applicable for users other than students. In this case any selection will do. This setting is solely used to be able to filter users based on their start year.
Curriculum year:	The current year of the curriculum of the user. Possible options are 1 st – 6 th and 'Any'. For users other than students, select 'Any'. This setting is solely used to be able to filter users based on their year.
Active:	This is the state of the user: Active  or Inactive  . By default "Active" enabled. Users that are not active will not be able login to the SA.
User role *:	This is role of the user. Students are indicated with  , where student assistants, teachers, administrators are indicated with  . The role of the user determines his access rights to the CM and SA. See the user role matrix for more information.
Copyrights *:	The copyrights are by default set to the name of your own institute. Copyrights are used to keep track of content which is created or edited by your institute.
Description / note:	This is where you can add notes or a description for the selected user.
Last logon:	This is the date of the latest login in to the SA.
Language:	This is the preferred language selected by the user in the SA user profile.
Handedness:	This is the handedness (left or right) selected by the user in the SA user profile. Models could appear differently in the simulator for left handed or right handed users.
Depth factor:	This is the 3D depth factor selected by the user in the SA user profile. The depth factor is a correction factor for the separation of the left and right image in order to have a sharp 3D perception in the simulator. This factor may differ per user. Factor of '0' = no 3D perception (aka 2D).
Groups in the overview:	This is the number of groups this user is participating in.

Groups in the details pane:	This shows a list of all groups this user is participating in.
Courses in the overview:	This is the number of courses this user is participating in.
Courses in the details pane:	This shows a list of all courses this user is participating in.
Patient scans:	Uploading of intra oral scans to the selected user. Please see chapter 5 Intra oral scan workflows for more information.

* = mandatory

Search, sort and filter users

Search and filter users

Use the search fields on top of each column to search for user specifics. Use the Groups and Course columns to filter the list based on the Groups and Courses.

Sort users

Click on the header of a column in the users list, to sort the user depending on the information in the selected column. Sorting is done alphabetically or numerical.

Filter on active / inactive users

With this dropdown menu you can filter users based on their activity status.

Selecting users

Method A: single select a user

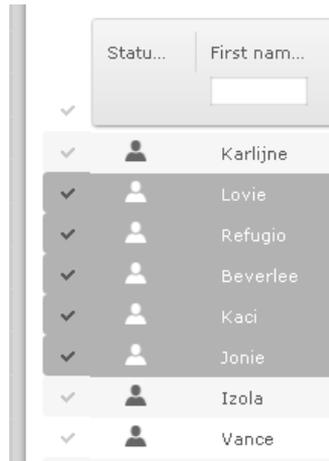
1. Go to the Users page.
2. Click on a user from the list of users.

Method B: multi select users

1. Go to the Users page.
2. Click on the check mark in front of the user
3. Repeat this for other users



Tip! Quick select multiple users: **Hold Ctrl** and click individual users, in order to select multiple users. Or **Hold Shift** and click first and last user, in order to select all users in between including first and last



Method C: Select all users from the current view

1. Go to the Users page.
2. Click on the check mark in the header (left from the search and filter options)

Total Items: 15 (Showing Items: 14) (Selected Items: 9)



Tip! The left bottom part of the Users page shows you the total number of users (total items), the number of users currently shown and the number of users that are currently selected.

Adding users to a group

Method A: Adding a single user to a group

1. Go to the Users page.
2. Select a user.
3. On the right side of the screen, more information about this user is given.
4. Scroll down to the Groups section.
5. Click the [+] button to select a group to which you want to add the selected user.
6. Click Save.

Method B: Adding multiple users to a group

1. Go to the Users page.
2. Select multiple users.
3. On the right side of the screen, multi select options are given.
4. Choose "Add to group" to add the selected users to an existing group, or "[+] New group" to create a new group for the selected users.
5. Click Save.

Method C: Adding users to a group via file import

1. Go to the Groups page and make a group
2. Prepare a CSV file containing the usernames and student numbers of the selection of users you want to add to this group.
3. Go to the Users page.
4. Click 'Import users'.
5. Select your CSV file
6. Click Import
7. In the Import Summary, click 'Add to group'
8. Select a group from the list and click 'Add'

The users from the file are added to the selected group.



Tip! Select multiple users by holding the Shift-key.

Assigning users to a course

Users must be first assigned to a group before they can be assigned to a course.

Groups are assigned to courses in the Course Planner. Please refer to paragraph 'Creating a new course' for more information.

Reset or change user password

Method A: Password is lost / Reset password

When a user lost his password he needs to go to the teacher to request a new temporary password.

1. In the CM, go to the users page
2. Select a user from the users list
3. In the user details section on the right, click 'Reset password'
4. Enter a new temporary password.
5. Click Enter.
6. Ask the user to login in the SA with the new temporary password. Once logged in to the SA, the user is asked to change the password immediately.

Reset password

Please create a new temporary password for user John Stark.

Temporary password

Reset

Teacher enters a new temporary password

Method B: Changing a password

Changing the password is possible at all times and is done in the SA.

1. Login to the SA
2. Click on your user name in the right upper corner
3. Go to Change Password
4. Enter your old password
5. Enter your new password twice
6. Click 'Save'
7. Your new password is saved.

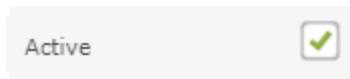
Deleting a user

Please know that, at this moment it is not possible to delete users that already have assignments or attempts. An alternative for deleting a user, is to make the user inactive. In a future version of the Course Manager deleting users will be made possible.

1. In the CM, go to the users page
2. Select a user from the list.
3. Click the recycle bin icon on the right.
4. Click 'Yes' to confirm deletion of the user.

User Active / Inactive state

When a user is created it gets by default the state 'Active'.



When a user is active he is able to login on the Simodont and participate in courses. When a user is inactive he is not able to login on the Simodont and cannot participate in any course.

Method A: Manually change the state per user

1. In the CM, go to the users page
2. Select a user from the list.
3. In the user details section on the right, find the 'Active' checkbox
4. Check or uncheck the box
5. Click 'Save'
6. The status is updated

Method B: Updating the state of multiple users

1. In the CM, go to the users page
2. Find and select the users that need a status update
3. Once all users are selected, find the 'Active' check box in the user details section on the right

-
4. Check or uncheck the box
 5. Click 'Save'
 6. The status of the selected users is updated

Method C: Update user state via file import

To update the status of multiple users it is also possible to use the file import option. Please read the paragraph about 'Updating user information'.

RFID user login (optional)

User identification via an RFID card is possible only when the Simodont is equipped with the right hardware, and the RFID login is configured in the software.

When RFID login is available on your system, a user is able to login to the Simodont using his RFID card. In this case a password is not needed. The user is directly logged on when his card is presented to the RFID reader.

When the RFID card is presented, the card code is checked against the database. If the code exists in the database, access is allowed. If the code does not exist in the database, access is not allowed and a warning is shown.

Manual login (username and password) will stay possible on the Simodont at all times, even when RFID login is enabled. This could be useful for staff and is required for NISSIN maintenance specialists.

Enabling the RFID option

Please contact NISSIN Support to enable the RFID option on your system.

New RFID card registration

Registration of new RFID cards does not require any actions from the school staff. The registration is automatically done the first time a new card is presented to the RFID card reader at login in the Simodont.

1. In the CM, make sure the users are created according to paragraph 'Creating and importing users'
2. On the Simodont, the user logs in with its credentials.
3. After login the user is asked to hold its RFID card in front of the RFID reader in order to register the card. From this moment on, the card is registered and the user is able to login using its RFID card.

Reset RFID card (re-registration of RFID card)

Once an RFID card is assigned to a specific user, the user cannot register another card. In case a user needs to register a new card, because for example his card was lost or defect, the user must ask the teacher to reset the RFID card.

To reset RFID card for a user:

1. In the CM, go the Users page.
2. Find the user in concern and select it.
3. Click the 'Reset RFID card' option in user details pane.

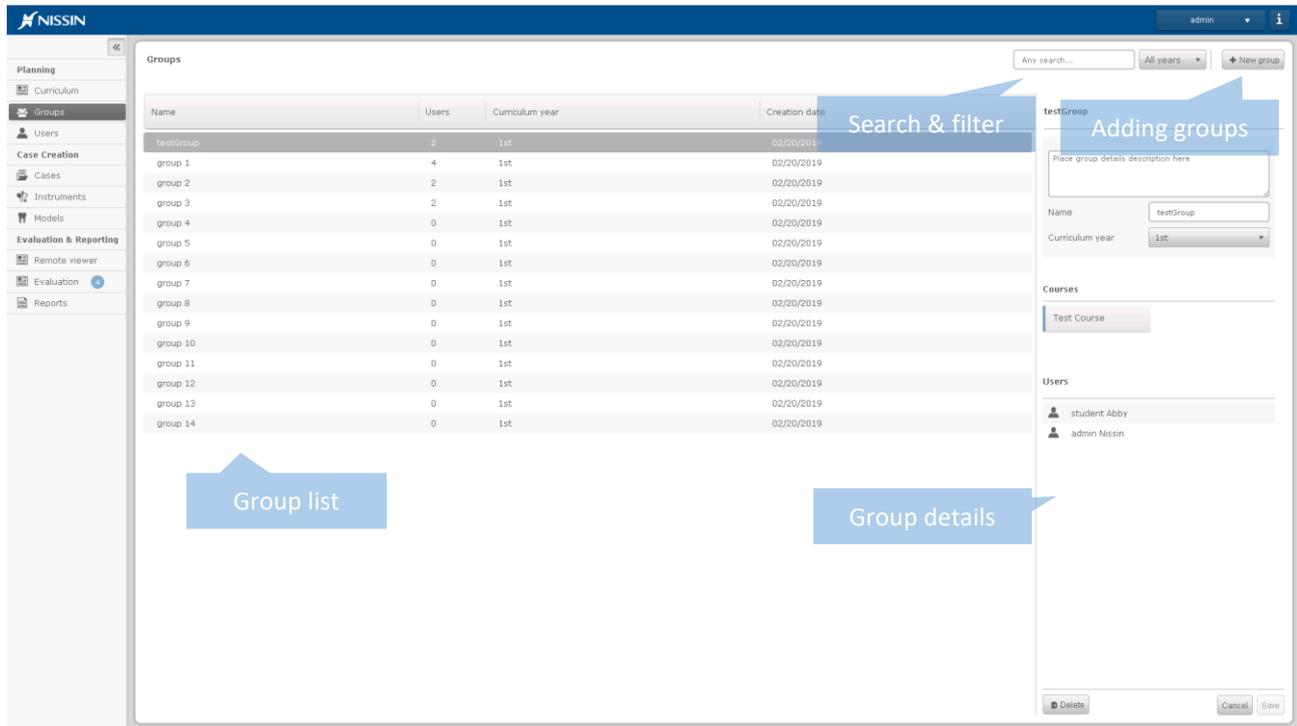
From now on the user can register a new RFID card via the Simodont.

2.3. Groups

A group is a collection of users. Groups are needed to be able to plan courses, which are planned in the in the Curriculum page.

All groups are managed on the Users page of the CM.

The following picture shows an example of the users page and its sections.



Groups list: This is a list with all users.

Group details: This section shows the details of the selected user. Such as user role, email address, but also information about groups and courses the user is participating in.

Search & filter: This is where you can search for specific groups and filter the groups based on their year or state (active/inactive).

Add: This is where new groups are added.

Group details

Name: The name of the group.

Curriculum year: The curriculum year of the group. This is only used as a label to be able to filter groups based on their curriculum year.

Description field: Here is where you can add some details about the group. These details are only shown in the CM.

Courses:	This shows a list of the courses the selected group is participating in.
Users in the overview:	The number of users within this group
Users in the details pane:	This shows a list of all users within this group.
Creation date:	This is the date the group was first created.

Creating a new group

Method A: Adding a new group

1. Go to the Groups page
2. In the right upper corner choose [New group]
3. Enter the details for the new group
4. Choose [Add]

Method B: Adding multiple users to a new group in one go

1. Go to Users page
2. Select multiple users (right mouse click + Shift)
3. On the right, in the user details pane, choose [New group]
4. Enter the details for the new group
5. Choose [Add]

For all group details please refer to the group details table.

Search and filter groups

Search any

On the upper right side of the Groups page, there is an 'Any search' field. Here you can type a part or the complete name of a group.

Sort groups

When clicking on the title of one of the columns in the groups list, you can sort this list based on the column. Depending on the information in the selected column, the sorting is done alphabetically or numerical.

Filter on curriculum year

On the right side of the search field, there is a dropdown menu where you can filter groups based on the curriculum year.

Filter on year groups

On the right side of the search field, there is a dropdown menu where you can filter groups based on their curriculum year.

Editing a group

1. Go to the Groups page
2. Select a group from the list
3. In the right pane, edit the group's details.
4. Click Save

Assigning a group to a course

Groups are assigned to courses in the Course Planner. Please refer to paragraph 'Creating a new course' for more information.

Remove users from a group

1. Go to the Groups page
2. Select a group from the list
3. In the group details pane, look for the user you want to delete from the group.
4. Click the recycle bin
5. Click Save

Deleting a group

1. Go to the Groups page
2. Select a group from the list.
3. Click the recycle bin icon on the right.
4. Click 'Yes' to confirm deletion of the group.



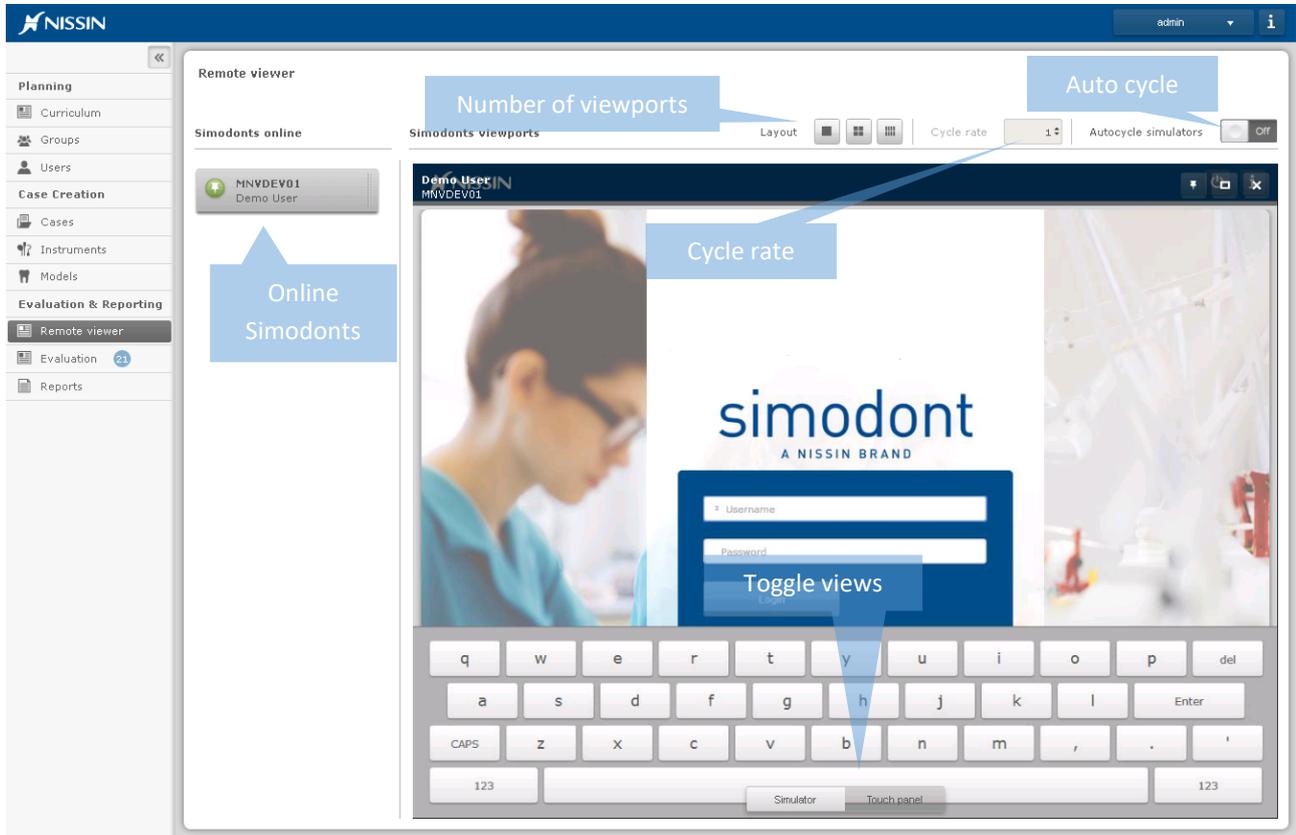
Note! It is not possible to delete groups that are planned in a course, also if this course was in the past. If the group is no longer active, than change the status of the group to 'inactive'.



Tip! If the planned course is in the future, and therefor has no attempts yet, you could remove the assignments for the group in the course planner and delete the group after that.

3. MONITORING, EVALUATION AND REPORTING

3.1. Remote viewer



In the “Remote viewer”, you are able to see a live stream of the screens of all active Simodents connected to the server.

On the list of “Simodents online” you can see a list of all the Simodents which are currently switched on and connected to the server. This list updates automatically whenever Simodents are switched on or off. When using this functionality, you will notice that Simodents are often shown with a different color.

Simodont states

- | | |
|---------------|--|
| Grey | The Simodont is switched on, but no user is logged in |
| Yellow | The Simodont is switched on and a user is logged in, but no treatment execution is taking place at the moment |
| Green | The Simodont is switched on, a user is logged in and treatment execution is taking place. This also means that you can switch from the panel pc view to the simulator view |



Tip! When a user is logged in, you can see the first and last name of that user in the “Simodents online” menu underneath of the name of the Simodont. Also you can see the first and last name of the logged in user on the screen, above the name of the Simodont.

Viewport options

You can click on any of the Simodonts listed in “Simodonts online”. A live stream (viewport) of the current screen of the Simodont will then be provided. Whenever a Simodont is in the step “treatment execution”, you can choose between two different views on the bottom middle part of the screen.

Simulator This view shows the simulator view as shown in the Simodont’s simulator. This is useful when you are particularly interested in monitoring the actual treatment of the tooth model / drilling skills of a user.

Panel PC This view shows the panel pc view of the Simodont. Using this view you can see all the actions of a user, so also instrument selection, the filling in of a treatment plan, etc.

When selecting multiple Simodonts, multiple viewports are opened. The CM automatically changes the layout of the “Simodont viewports” screen depending on the number of Simodonts you selected. It is possible to monitor up to 8 different Simodonts simultaneously.



At the top part of the screen, multiple view options are provided:

Layout You can choose between one, four or eight viewports, with a layout as shown on the symbols

Cycle rate Here you can choose the interval by which you want to perform auto cycle. The rate is in seconds. For instance, if you choose a value of 1 here, the auto cycle will automatically be processed every second

Auto cycle The auto cycle option is a valuable tool for monitoring a large number of Simodonts. When you turn auto cycle on, the viewports will be changed after every interval period. You can toggle auto cycle off and on.



On the top right of every viewport, three options are provided:

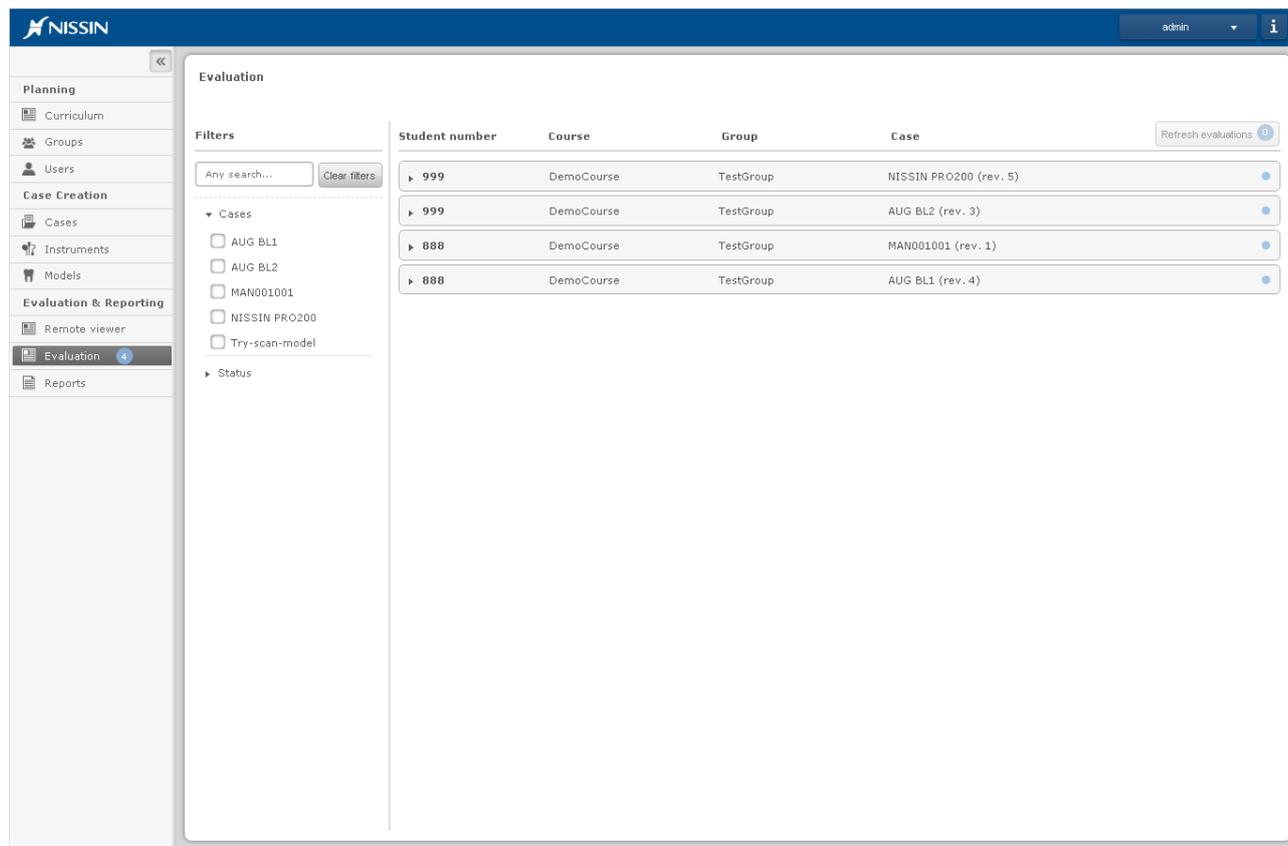
Pin viewport This options pins the viewport to the overview, which means that it will remain at its location and is not affected by auto cycle

Full screen pop out This provides a full screen popup of the particular viewport

Close This closes the viewport

3.2. Evaluation

In the Evaluation environment, the teacher can assess and grade attempts of students.



Student number	Course	Group	Case	
▶ 999	DemoCourse	TestGroup	NISSIN PRO200 (rev. 5)	●
▶ 999	DemoCourse	TestGroup	AUG BL2 (rev. 3)	●
▶ 888	DemoCourse	TestGroup	MAN001001 (rev. 1)	●
▶ 888	DemoCourse	TestGroup	AUG BL1 (rev. 4)	●



Note! In order to make it possible to use the evaluation environment, there should be at least one course where evaluation is active. (Check the option 'Evaluate result' inside the Course of the Curriculum Planner) And students in a group enrolled in that course should have done attempts in order for the evaluations to show up in the evaluation environment.

Attempt overview

In the main screen of the evaluation environment, there is a list of attempts which can be evaluated. If there are multiple attempts for one "student/course/group/case"-combination, then these are combined.

To see the individual attempts, click on a row to unfold.

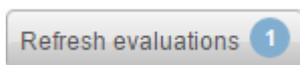
Attempt states

An attempt can have one of the following states: 'New' ●, 'In progress' ⌚ or 'Done'.

Refresh list

It can happen that while working on the evaluation page, new attempts are submitted by students. The Course Manager notifies you by the "new number of attempts" symbol on the Refresh Evaluations button. The list is not updated automatically when you are working on this page.

To manually update the list of submitted attempt, press the Refresh button.



Filtering and searching attempts

Filtering

Filtering of attempts is done based on course, group, case or state.

Search any

On left side of the attempts list, there is an 'any search' field. Here you can type a part of a case, course or group.

Evaluation of an attempt

1. Look for the attempt you want to evaluate from the list of attempts
2. Click on the attempt row to open the attempt
3. Review the work, enter feedback if needed and grade the attempt.
4. Press Save in case you need to continue the evaluation some other time, or press submit if you want to submit the evaluation of the attempt.

End result

This section shows a 3D model of the end result of the treatment. Regardless of what type of case, model or assessments types where selected, the 3D view is a fixed part of the evaluation.

The teacher can pivot and move the model using the mouse to inspect the student's preparation.

Please note that the 3D model only shows the main tooth for models with multiple teeth.

Analysis

This section shows up to four assessment pages. Which pages are actually shown depends on which assessment types were enabled during the development of the case. These assessment pages are exactly similar to what the student sees in the SA.

The four optional assessment pages are:

- Treatment statistics
- Treatment plan
- Rubric assessment
- Evaluation against treatment plan

The 'Treatment statistics', 'Treatment plan' and 'Evaluation against treatment plan' pages are static representations of the pages shown to the student on the SA Results page.

The rubric assessment on the other hand provides the possibility to fill in the teacher's scoring next to the student's scoring.

Please note that the rubric scoring does NOT automatically affect the end score of the attempt.

Reflection and grade

User reflection

I removed the caries infected dentin, but I am not fully sure if I left all affected dentin in tact.

***Feedback**

Add feedback here

Passed: Grade:

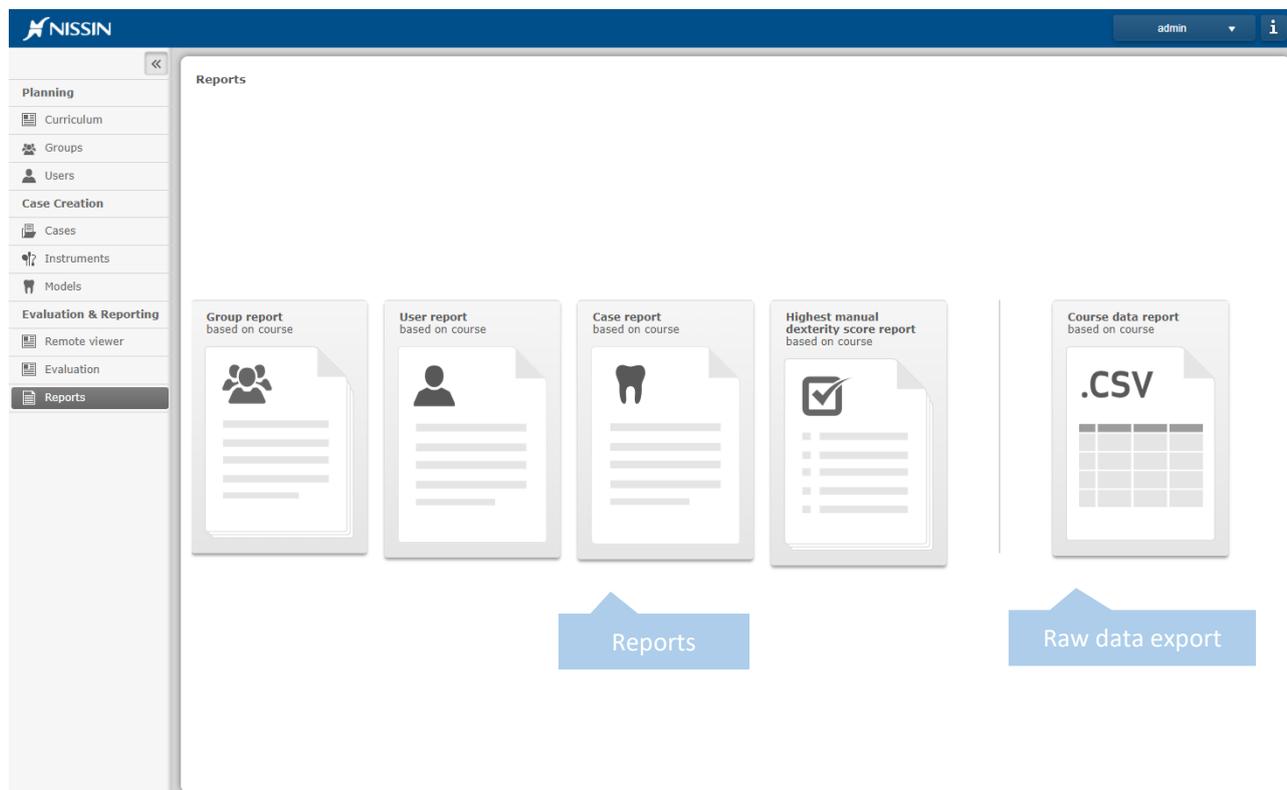
At the bottom part of the evaluation page, the student's own feedback is shown. The student is able to enter his feedback on the Results page in the SA just before submitting the case attempt.

The teacher can add his feedback in the 'Feedback' section. Entering feedback is optional.

Before you can submit your evaluation you will need to indicate if the student has passed  or failed  the case attempt, and a grade should be entered.

Supported grading systems are: 0-100 and A-F

3.3. Reporting



The reporting section supports a set of four predefined reports, and course data export to a CSV file.

Report type	Description	Data selection	Supported file formats
Group report	Predefined summary per student, per case, per attempt	Based on one course	PDF, CSV STL , Snapshot per attempt
Student report	Predefined summary for one student, per case, per attempt	Based on one course or patient scan	PDF, CSV STL + Snapshot per attempt
Case report	Predefined summary for one case, per student, per attempt	Based on one course	PDF, CSV STL + Snapshot per attempt
Score report	Simple score report (passed/failed + score) per case per student	Based on one course	PDF, CSV STL + Snapshot per attempt
Course data report	Export of all data for selected course	Based on one course or all courses	CSV

Creating a Group report

1. Go to the Reports page
2. Click the Group report icon
3. Select a course
4. Select a group
5. Click Generate in the right upper corner. A report is generated.
6. Choose to 'Export CSV' or 'Download' the PDF version of the report

Creating a User report

1. Go to the Reports page
2. Click the User report icon
3. Select a student
4. Select a course or a patient scan
5. Click Generate in the right upper corner. A report is generated.
6. Choose to 'Export CSV' or 'Download' the PDF version of the report

Creating a Case report

1. Go to the Reports page
2. Click the Case report icon
3. Select a course
4. Select a case
5. Click Generate in the right upper corner. A report is generated.
6. Choose to 'Export CSV' or 'Download' the PDF version of the report

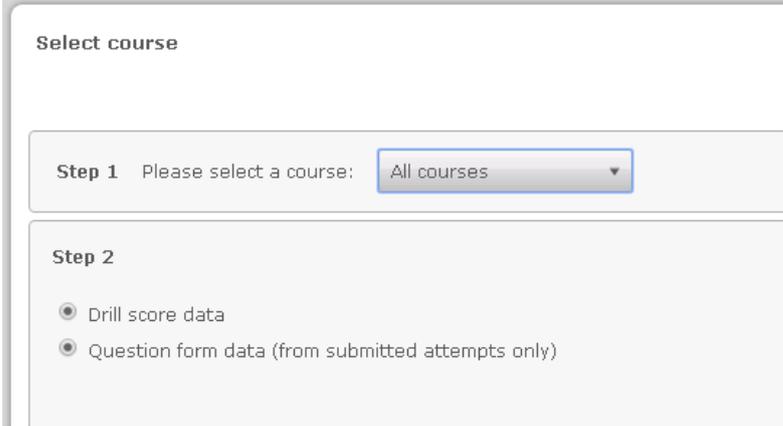
Creating a Score report

1. Go to the Reports page
2. Click the Score report icon
3. Select a course (only select manual dexterity courses here!)
4. Select a group
5. Click Generate in the right upper corner. A report is generated.
6. Choose to 'Export CSV' or 'Download' the PDF version of the report

Creating a Course data export

1. Go to the Reports page
2. Click the Course data report icon
3. Select a course or select 'All courses'

4. Check which types of data you would like to export to file. The export will generate separate files for the standard drill score data and the question form data (if question forms are present in the case), as the file formats are very different.
5. Click 'Export CSV'. A CSV file is downloaded. The CSV file can be opened in for example MS Excel.



The screenshot shows a 'Select course' dialog box with two steps. Step 1 is 'Please select a course:' with a dropdown menu showing 'All courses'. Step 2 has two radio button options: 'Drill score data' and 'Question form data (from submitted attempts only)'. The 'Question form data' option is selected.

Question form data (if included in a case attempt) is exported to a separate file.

Downloading an STL per attempt

From the predefined reports it is possible to download an STL file per attempt. Probably the easiest way to find the STL you are looking for is by using the Student Report as this gives the attempts for one specific user only.

1. Go to the Reports page.
2. Click the Students report icon.
3. Select a student.
4. Select a course or a patient scan.
5. Click 'Generate' in the right upper corner. A report is generated.
6. Look for the attempt in concern.
7. Click 'STL' under the final state image to download the file.

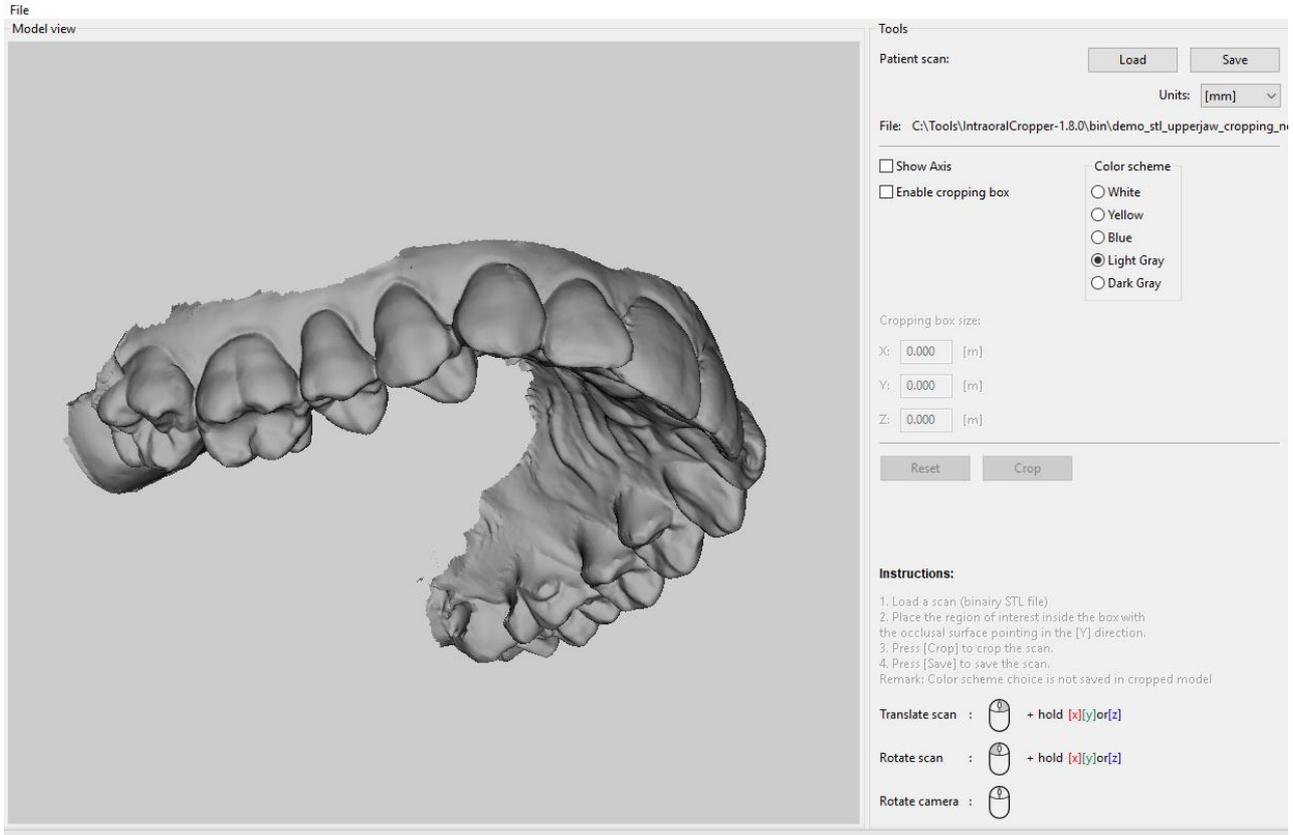


STL viewers

STL is a common 3D file format which is supported by many different 3D tools. This paragraph gives some examples of tools that can be used to view the downloaded STL files.

Intra Oral Scan Editor STL viewer mode

Intra Oral Scan Editor version 1.8 has an STL viewer mode. By turning off the cropping box and axis you have full vision to inspect the model. This is a very simple and ready to use STL viewer.



Intra Oral Scan Editor 1.8 – viewer mode

Online STL viewers:

- <https://www.viewstl.com/>
- <https://www.3dvieweronline.com/>
- <https://viewer.autodesk.com/>

There are many more free (online) STL viewers.

Freeware 3D models viewers:

Freeware STL viewers have the advantage that they usually can do a lot more than just viewing STLs, such as filtering and editing actions. However these tools can have a steep learning curve. Some freeware tools are:

- MeshLab <http://www.meshlab.net/>
- Mesh Mixer <http://www.meshmixer.com/>

4. CASE CREATION

4.1. Cases

The Cases page shows an overview of the case library. Recent case activities are shown at the top, the rest is categorized by case type.

The screenshot displays the NISSIN software interface for the 'Cases' page. The top navigation bar includes the NISSIN logo, a user dropdown menu showing 'admin', and an information icon. A sidebar on the left contains a menu with categories: 'Planning' (Curriculum, Groups, Users), 'Case Creation' (Cases, Instruments, Models), and 'Evaluation & Reporting' (Remote viewer, Evaluation, Reports). The 'Cases' page features a search bar with 'Any search...' and a 'Clear filters' button. Below the search bar, there are filter options for 'Procedure', 'Creation Date', and 'Modified Date'. The main content area is divided into two sections: 'Crown' and 'Cariology'. The 'Crown' section contains two case cards: 'CRW002001' (Crown preparation on tooth #46) and 'CRW006015' (Porcelain crown preparation on Frasco AG3 model tooth...). The 'Cariology' section contains six case cards: 'CAR002001' (Class II treatment on tooth #45), 'CAR002002' (Class I treatment on tooth #27), 'CAR002003' (Class II treatment on tooth #37), 'CAR002004' (Class II treatment on tooth #47), 'CAR002005' (Class II treatment on tooth #28), and 'CAR002006' (Class V treatment on tooth #43). Each card includes a patient photo, a treatment description, and the 'Content Manager NISSIN' name. Some cards also feature a green checkmark icon.

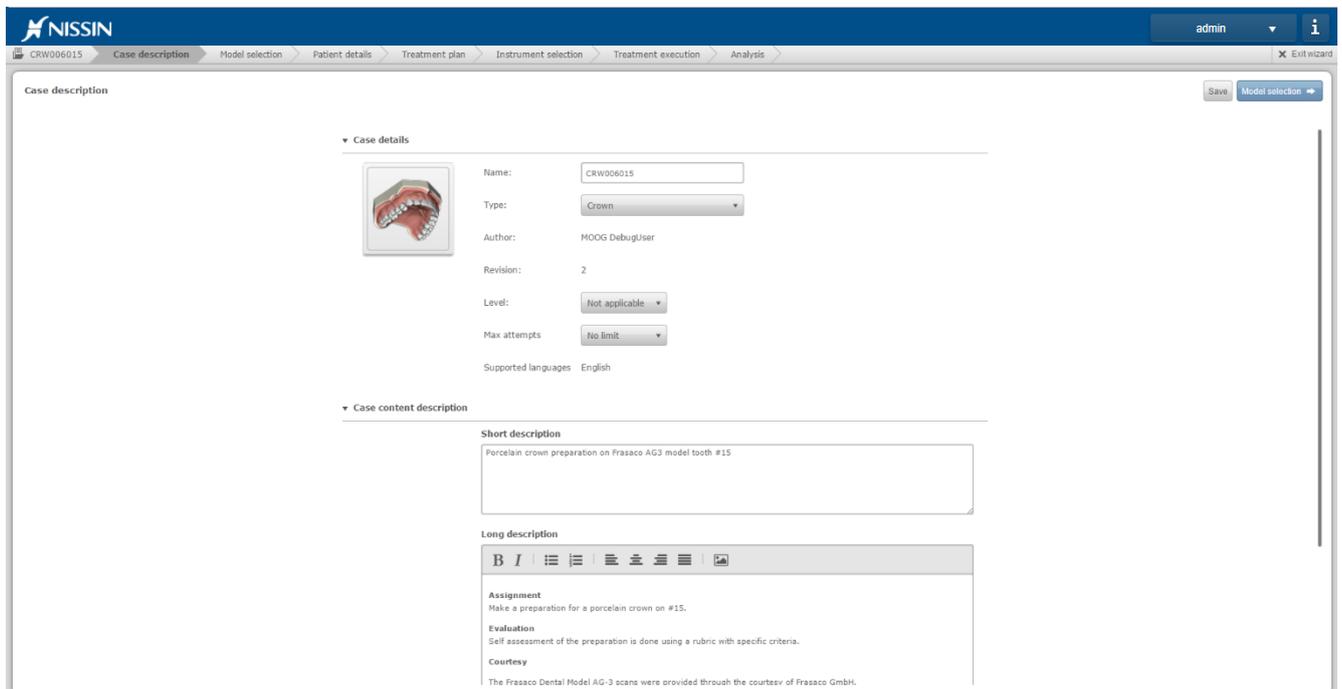
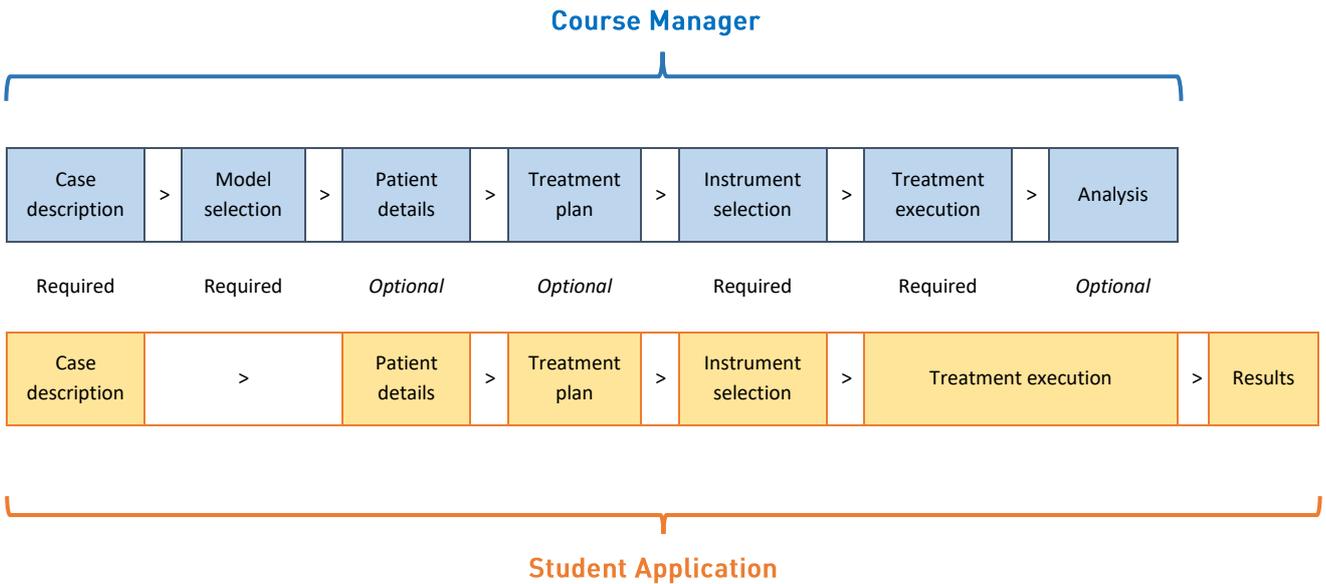
Available case actions are:

- New case
- Delete case
- Publish case
- Edit case
- Copy case
- Export case
- Import case

Creating a new case – [Case Wizard]

Creation of a new case is done by means of the so called ‘Case Wizard’. The case wizard is a tool that guides you through the process of case creation, making sure that all required ingredients are included. Not all of the ingredients (pages) are mandatory, some are optional. As a teacher you have the freedom to enable and disable pages and options according to your own preferences such that the result fits the needs of your program.

The case content and workflow shown in the CM is very similar to what is shown to the student on the Simodont. The following diagram shows the connection between the pages in the CM and the SA.



Case wizard

In order to create a new case

1. Go to the Cases page
2. Click  in the right upper corner. The Case Wizard is started. Follow the instructions on each page. Use the blue button in the right upper corner to proceed to the next page.
3. Fill in the details on the Case Description page
4. Select a model (and drillable teeth) on the model page
5. Fill in the details on the Patient Details page or disable if not needed by unchecking the checkmark at 'Active Patient details' at the top of the page
6. Fill in the details on the Treatment Plan page or disable if not needed by unchecking the checkmark at 'Active Treatment plan' at the top of the page
7. Select whether students should select their instruments or make an pre-filled instrument tray for them on the Instrument Selection page
8. Set your preferences for the simulator settings on the Treatment execution page
9. Select your preferred analysis method(s) on the Analysis page
10. Save and publish your case

The following paragraphs give a detailed explanation of the different settings per page.

Step 1: Case description - [mandatory]



This page is mandatory. The information entered in this page is shown to the student on the first page 'the Case Description' page.

Case details

Name: This is the name of the case. The case name must be unique.

Type: This is the type of the case. The options are:

- Manual dexterity
- Cariology / operative
- Crown
- Patient Scan
- Endo access prep

Cases are grouped per case type in the CM. In addition, the availability of some case options is related to the selected case type.

- The automatic score formula is only available for manual dexterity type cases.
- The antagonist view option is only available for non-manual dexterity cases.
- The 'Patient Scan' case type is a template to carry intra oral patient scans (STL) and can only be used to assign patient scans to a specific user. Therefore patient scan type cases cannot be planned in a course.

Author: The author is automatically assigned as being the user who started the creation of the case (revision).

Revision: This is the revision of the case. Each revision could have its own author, as long as they are from the same institute.

Level (optional): The level is just an indication of the difficulty of the case. The system will not sort cases based on the level automatically.

Max attempts: This is the maximum number of attempts the student will get. If the maximum has been reached, the student will not be able to perform an attempt for this case again. If you do not want to you a limit, select 'no limit'.

Supported languages: At this time only English case content is supported. It is anticipated that in the future that case creation in different languages is supported.

Case content description

Short description (optional): The short description is shown on the case tile and case details pop-up in the CM and SA. The short description is not shown in the case itself!

Long description (optional): The long description is shown on the case description page of the case. The text is shown to the student as shown in this text editor.

For images, jpg, jpeg, png and gif formats are supported.

Predefined stages of snapshots (optional):

With this option, you can ask the student to take snapshots of certain predefined stages during the treatment. This enables you as a teacher to review the stages and reflect on the process afterwards. The definition of the different stages is described here on the case description page, such that the student is prepared before the actual treatment is started.

Where/how do I see this feature back?

SA: Case Description page > The student sees a list of these stages (name + description) on the case description page in the SA. Make sure to instruct the student that he must create snapshots for each stage during the treatment phase, in the case's long description.

SA: Results page > In the end, the student will have to link the taken snapshots to the defined stages on the Results page, just before submitting the case.

CM: Evaluation page > The teacher will be able to see the different snapshots during the evaluation of the case attempt.

Stage name: Enter the name for each stage.

Description: Describe what you expect to see in the snapshot for this stage.

Step 2: Model selection - [mandatory]



This step in case creation is mandatory. The student will not see this page on the Simodont, however a model is a required ingredient of each case.

The CM offers a library of different models suitable for different types of cases. As teacher you are not able to create your own models using the CM, as this would require scan data and a special 3D model

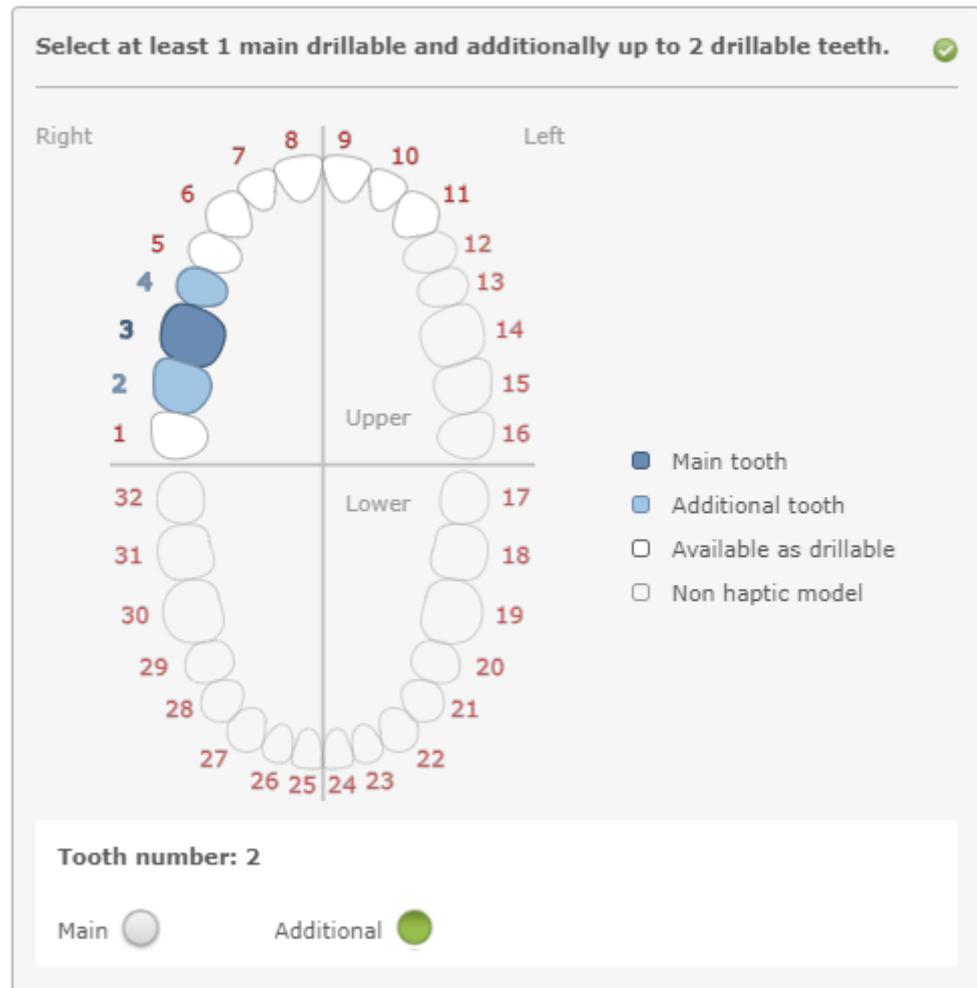
Filters: Use the filter or search field to find the models suitable for your case. Either filter on tooth number (ISO tooth numbering system), institute or search on model name using the search field.

Model selection: To select a model, simply click on one of the model tiles from the model overview.

For jaw models the tooth selector in the model details pane on the right shows you which teeth in the model are drillable (available as drillable). As some teeth are visually present but are not present as drillable models.

Select at least one tooth as main drillable. Additionally you can select up to two drillable teeth. If you want to select more than one drillable tooth, it is advised to select the adjacent as the additional drillable teeth.

Please note that assessment of the treatment is focusing only on the selected main tooth!



In the example above you see that the teeth 1 to 11 are available as drillable teeth (white). Tooth 3 is selected as main drillable tooth (dark blue). Meaning that the case focusses on the treatment and assessment of tooth 3. The adjacent teeth 2 and 4 are also enabled to be able to assess possible damage on these teeth (light blue).

Model description:

To see if the selected model is suitable for your case, you must read the model description in the right pane.

Select a tooth from the tooth selector and scroll down to see the details for the selected tooth.

The tooth details section shows you:

- Which segments (tissues) are present in the selected tooth
- The radiographs for the selected tooth
- The intra oral pictures for the selected tooth
- The ideal preparations of the selected tooth

Model details are editable in the Models page of the CM.

Step 3: Patient details - [optional]



Feel free to leave some sections from this page empty, as empty sections will not be shown in the case on the SA. The only required section when Patient details page is enabled, is the Patient Details section.

Activate Patient details: The Patient Details page is optional. If this page is disabled it is excluded from the case shown in the SA.

Enable this page if you want to include a virtual patient in the case.

Patient details: This is where you select a patient picture and fill in the patient's personal data such as name, age, gender, marital status and profession.

Reason for visit (optional): Explain why the patient is visiting the dentist.

Patient history (optional): Enter information about the patient's dental history.

Patient examinations (optional): Enter information and add pictures for the different patient examinations.

The intra oral images and radiographs are automatically added to this page based on the selected model. If you do not want to use these images, simply hover above the image and press the recycle bin icon.

Diagnosis (optional): Enter information about the diagnosis.

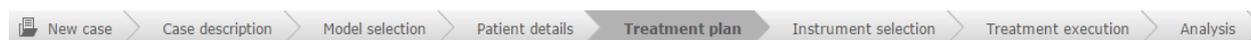
Question forms

The patient details page offers the option to add question forms per section. For more information on question forms in cases, please refer to Chapter 4.2 Assessment methods, paragraph Question forms



This icon indicates that you can add a question form to this section.

Step 4: Treatment plan - [optional]



Feel free to leave some sections from this page empty, as empty sections will not be shown in the case on the Simodont.

Activate Treatment plan: The Treatment plan page is optional. If this page is disabled it is excluded from the case shown in the Simodont.

Enable this page if you want students to write down their plan for treatment prior to the actual treatment.

Description (optional): The meaning of this section is twofold. As a teacher you can write instructions for the treatment plan. And by enabling the option “student must write a treatment plan description” a text edit field is presented to the student to write his own plan.

In case you do not want to use the description section, just leave both the text field and checkbox empty.

Drawings (optional): Here you can add intra oral pictures that students will use to draw the planned treatment.

Once a picture is added, you will have to give the picture a label of any choice and in addition you must select the type of view.

Chosen treatment: Select here if the student should be provided with several different options for a treatment plan from which he/she will need to select one when running the case on the Simodont. The chosen treatment will be saved and can be exported by the “course data report”.

Restoration material: Here you can select if the student should select a restoration material, or you can make this selection beforehand.

Pretreatment (optional): This section is solely used to have the option to add a question form right before the actual treatment is started.

Question forms

The treatment plan page offers the option to add question forms per section. For more information on question forms in cases, please refer to Chapter 4.2 Assessment methods, paragraph Question forms



This icon indicates that you can add a question form to this section.

Step 5: Instrument selection - [optional]



The instrument selection page looks quite similar to the normal Instruments page in the CM.

The instrument library contains 70+ rotary instruments and several hand instruments. For a detailed list of all instruments please refer to the Simodont Content Catalog.



Tip! Please read chapter 4.3 Instruments and instrument sets, to learn more about generic instrument sets and tips on how to use them.

Step 1

In the right upper corner you will find Step 1.

In this step you must select one of the following options:

1. Student must select correct instruments.

The student must pick the correct instruments for the treatment. The student has a maximum number of attempts (set by teacher) to make the correct selection. The SA will automatically make the correct selection, once the maximum number of attempts is reached.

2. Student gets prefilled tray.

The student will get a prefilled instrument tray, but if preferred the student is allowed to add extra instruments to the tray.

3. Student skips instrument selection.

The student will get a prefilled instrument tray. The instrument selection page is not presented to the student.

Step 2

Right under Step 1, you will find Step 2.

Here you have the option to either:

1. Choose a predefined instrument set.

Go to the "Set" tab and select a set. You can still make adjustments (add or remove instruments) at this point, but please know that this makes the instrument set 'case specific' and not generic.

2. Create a case specific instrument set.

From the "Burs" and "Hand instruments" tabs, drag and drop or click the instruments to the "mandatory", "optional" and "incorrect" sections.

Except for the "Student skips instrument selection"-mode, all instruments in one of the three sections are presented to the student on the instruments tray in the instrument selection step.

The student has to at least pick the instruments that were labeled "Mandatory" and additionally could pick instruments that were labeled "Optional".

If a student picks any instrument that was labeled "Incorrect" he will be notified that the selection is incorrect, as he will have to try again.

Step 6: Treatment execution - [mandatory]



Simulator View

The simulator view shows a preview of the situation in the simulator

Start

In the Start tab you are able to set the start position and orientation of the model. Use the “Rotate” and “Drag” buttons to change mode. Use the left mouse button to bring the model in position. Use the “Reset” button to reset to the original position and orientation of the model.

Use the Left-handed and Right-handed toggle buttons to set different start positions for left and right handed users.

Limitation

In the Limitation tab you are able to set the model’s motion limits. Notice that the translation (in m) and rotations (in degrees) are set per axis. Enabling the checkbox means that limitations are active. The axis’ are as follows: XYZ = RGB

X = Red axis Y = Green axis Z = Blue axis

Use the Left-handed and Right-handed toggle buttons to set different limitations for left and right handed users.

Zooming

In the Zooming tab you are able to set the minimum and maximum allowed zoom settings.

Simulator Settings

The Simulator settings give you the possibility to customize which options you have available during the treatment.

Mirror

Enable this option to show the mirror during the treatment.

Caries detector

Enable this option to have the caries detector available during treatment.

Restart attempt

Enable this option to show the restart treatment button in the SA during treatment.



Please be aware that restarting the treatment is not registered as a new attempt! Keep this in mind when you have set a maximum number of attempts for the case.

Irrigation

Enable this option to show the irrigation button in the SA during treatment. Students will press the Irrigation button to remove the red color from the pulp chamber in tooth models.

Semi-transparent tooth

Enable this option to show the semi-transparent tooth button in the SA during treatment. This allows students to make the main tooth model semi-transparent. In the semi-transparent state of the tooth, inner structures as the pulp chamber and caries become visible. This option could be useful for cariology or endodontic cases.

Save/Load snapshot

Enable this option to allow students to save and load snapshots during treatment.



Note! In case of an exam, it could be desired to allow loading of snapshots, but only with teacher approval. Teacher approval for loading of snapshots is controlled at course level. Please look for the ‘Teacher Authentication’ checkbox

when editing the course.

Max nr. of snapshots

This is where you set the maximum number of snapshots a student is allowed to make during treatment. Please note that these snapshots are temporarily stored on the Simodont during the session. Only the final state (snapshot) plus snapshots linked to predefined stages are stored on the server at case submit.

Auto snapshots

Enable this option in order to allow the Simodont to make snapshots automatically. The time between snapshots is set with the “Snapshot interval” setting.

Snapshot interval

This option is only available when Auto snapshots is enabled. Use this setting to set the time in minutes between snapshots that are automatically generated.

Real time Statistics

Enable the real time statistics option to be able to select model segments from the list of segment for real time statistics per segment during treatment. The segments you select will appear on the Analysis tab, such that you can set the treatment specifics per segment.

Step 7: Analysis



This page contains four different assessments.

- Treatment statistics
- Treatment Plan Assessment
- Objective Assessment
- Rubric Self-Assessment (select assessment sheet and assessment set)

The different assessment methods are complementary, making it possible to use them next to each other within one case. Refer to 4.2 - Assessment methods - for more information on each method.

Delete case

1. On the case overview, on the cases page, select a case tile
2. In the Case Details pop up, click 'Delete'.

Please note that case deletion is only allowed for cases that are not planned in any course (not now and not in the past).



Note! When deleting a case, you will delete all revisions of this case.

Edit case

In order to edit a case, click on the case tile and click 'Edit'.

Case editing is only allowed when your institute is the original owner of the case. If your institute is not the owner of the case, but you still want to use this case as a base for your own case, simply create a 'Copy' of the case.

Publish case

A case has one of the following states:

1. 'new/in progress' 
2. 'published' 

Important to know is:

- As long as a case is not published, it will not be ready to be planned in a course. Unpublished cases are not shown in the curriculum planner
- Every time you publish a case, the latest revision of that case is made official and becomes locked. When you want to make changes after publication of a case, the system automatically creates a new revision for that case. Hereby the original revision of the case remains untouched. This is to make sure that both old courses are not changed, and case revisions that are already used in running courses do not change half way.

Publishing cases is done either:

- a. in the final stage of case creation. At the end of the case wizard you are asked if you want to 'Save and Publish' the case or only 'Save' the case.
- b. by clicking on a case tile from the case overview. The pop-up will show you the available options. Case publication is one of these options.

Updating cases to the latest revision can be done either:

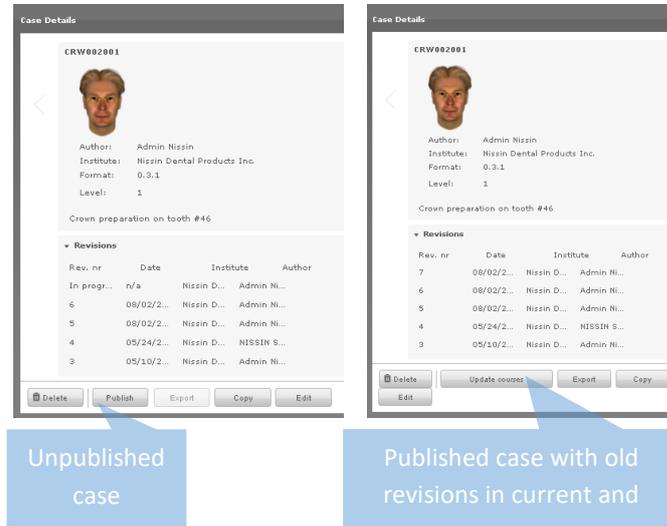
- a. directly during publishing. Use the checkbox to enable the update

Update current and future courses to case

revision : 5

- b. by clicking on a case tile from the case overview. If there are any old revisions of the case in current or future courses. the pop-up will show an Update courses button.

In both cases a list of all current and future courses containing this case is shown and for each course it can be selected if the revision should be updated or not.



Case details window

Copy case

In order to create a copy of a case, click on the case tile and click 'Copy'.

A whole new case is created based on the content of the original case. For this copy you are free to make any changes without violating the original case. The original owner of the case is still visible in the case info pop-up.

Export case

Sharing and transferring cases from one system to another is possible using the case import and export functionality.

In order to export a case:

1. Go to the cases page
2. From the case overview, select a case
3. In the Case details pop-up, click 'Export'.

All case content (case information, model, instruments etcetera) is packed together in a tgz file and placed in the 'Downloads' folder.

Export of a case is only allowed when the case is in state 'published'. If your case is still 'in progress', make sure to first finish the case, save and publish it.

The exported tgz file can be fed directly into the CM through 'import case' in the Cases page.

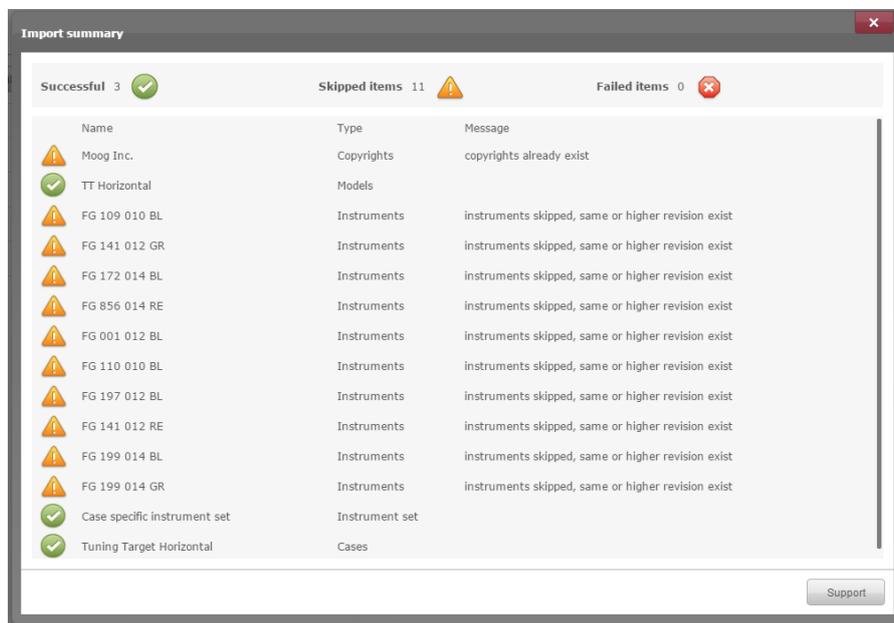
Import case

In order to import a case:

1. Go to the Cases page
2. Click 'Import case'
3. Select the case package file (tgz file)
4. Close the Import summary pop-up

At import you will be prompted with an import summary. This summary will tell you which content is successfully imported , which is skipped  and for which content the import failed .

Import of content is skipped in case the content already exists on your system. This happens often when importing instruments.



Updating a case that is being used in a course

It often happens that you would like to change a few details in a case, while this case is already being used in a planned course.

Since v4.8 it is possible to update your case and all the courses that are using this case in a few simple clicks. Updating courses is done at the stage of publishing a new case revision.

In order to edit a case and update the courses using this case:

1. Go to the Cases page
2. Select the case you want to edit
3. Click the 'Edit' button and make the desired changes
4. Go to the Analysis page
5. Click 'Publish'
6. Enable the option "*Update current and future courses to revision: <new revision no.>*"
7. In the course list, check those courses that you would like to update with the new case revision
8. Click 'Publish'

4.2. Assessment methods

Treatment Statistics

Enable this option to show the timer during treatment.

	Elapsed time	13 sec	Drill time	0 sec
	Moved with drill	0.00 m	Moved with mirror	0.00 m

Segment statistics and automatic scoring

As part of the treatment statistics, it is also possible to show statistics on how much material (in percentages) is removed per model segment. In addition, these percentages can be used to calculate a score.

Please be aware that the percentages are counted in relation to their own segment only.

In order to use segment statistics and automatic scoring, do the following;

1. Go to the Treatment Execution page
2. Enable the option 'Realtime statistics'
3. From the available segments in the model, select the segments that you would include in the score calculation / show to the student. Selected items appear in the right box.

Realtime statistics

Segments

Available	Select
<input type="button" value="Add all"/>	<input type="button" value="Remove all"/>
	<input type="button" value="- Container"/>
	<input type="button" value="- Leeway"/>
	<input type="button" value="- Target"/>

In this example, the selected model has three segments available and all of them will be used for the segment statistics and scoring.

4. Go to the Analysis page
5. Score formula: For the calculation of the score, you can enter your own formula in the formula input field. It is important though, to use the segment names exactly as they are written in the list above the formula input field. Accepted mathematical symbols are +, -, *, /, (,).

Manual dexterity formula:

The formula is used to calculate the score of a manual dexterity case. The following segments can be used in the formula.:

Leeway
Container
Target

Target-(Leeway/2)-(Container*2)

Formula input field



Tip! If you do not want to calculate a score, simply leave the Formula input field empty.

6. Set parameter tolerance: For each segment you should select either the 'required' or 'allowed' option and set a certain percentage. The meaning of both is explained here:

Required: The student must remove at least this amount of this segment in order to pass the exercise. In general used for segments within the ideal preparation area.

Allowed: The student is allowed to remove up to this amount of this segment and will still pass the exercise. When he exceeds this percentage, the exercise is failed.

Set parameter tolerance

<input type="radio"/> Required	<input checked="" type="radio"/> Allowed	
Leeway		100 %
<input type="radio"/> Required	<input checked="" type="radio"/> Allowed	
Container		0 %
<input checked="" type="radio"/> Required	<input type="radio"/> Allowed	
Target		90 %

In this example;

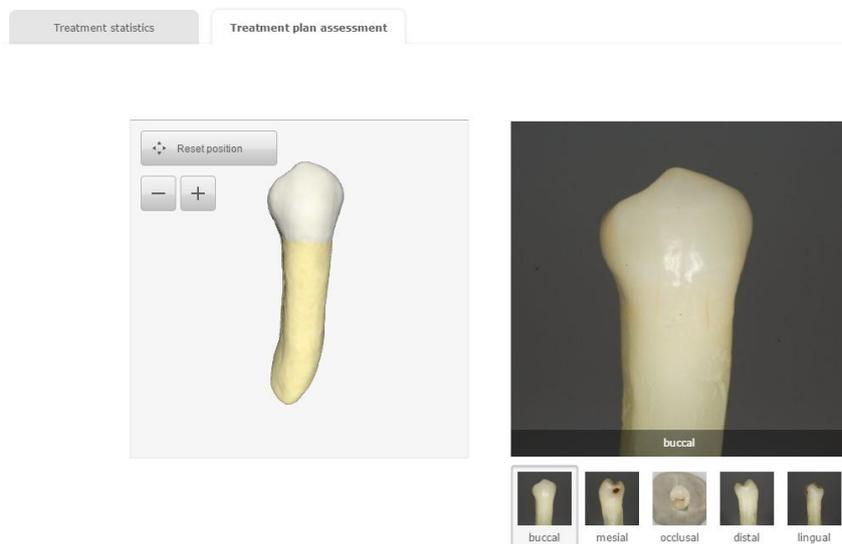
- The student is allowed to touch the leeway segment.
- The student is not allowed to touch the container segment at all. He fails the exercise if he does.
- The student must at least remove 90% of the target segment in order to pass the exercise.



Note! It is important to know is that the segment parameter tolerance settings are leading for the 'pass' or 'fail' definition of an exercise, the score is not. The score is solely an extra performance indicator to show how well the exercise was executed.

Treatment Plan Assessment

Enable this option to show the treatment plan drawings in the 'Pause and Analyze section during treatment. This allows students to compare their treatment plan drawings with their actual preparation while in treatment.

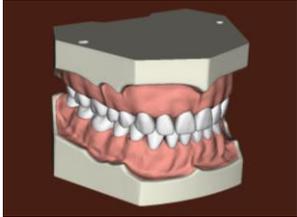


Automatic Objective Assessment

This paragraph describes how to create ideal preparations for the class I objective assessment (OA) method.

Technically all the models, except for the manual dexterity models, are suitable for class I OA. For some models the OA features are limited. The centeredness will only work for those models where the center groove lines are defined in the model.

Please refer to the Simodont Content Catalog to see for which models the center groove lines are defined. These models are indicated with the “OA” tag.

Model name	Model image	Teeth	Description	Segments	Tags	Origin
Frasaco_AG3_ FullJaw		11-18 21-28 31-38 41-48	<ul style="list-style-type: none"> All teeth from quadrant 1, 2, 3 and 4 No internal anatomy Uniform hardness of enamel throughout the whole tooth Teeth suitable for automatic Objective Assessment are: 14, 15, 16, 17, 34, 35, 36, 37 	Enamel	CAR CRW OA	FRAS-ACO

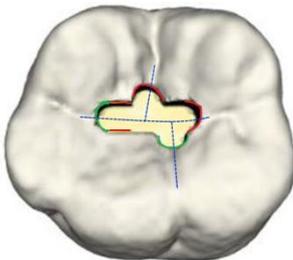
Example from the Simodont Content Catalog

Objective Assessment tests

Objective assessment runs a set of 8 different automatic tests on the student’s preparation. The student’s preparation is compared with a teacher’s ideal preparation.

Centeredness

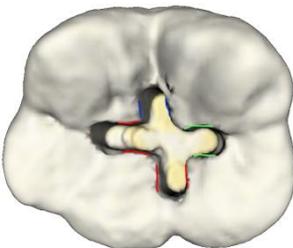
Checks if the preparation is centered over the tooth’s groove lines.



- ≠ (red) Off center, deviation from central groove is more than 0.5 mm.
- ≠ (green) Ideal, less than 0.5 mm deviation from center.

Isthmus and groove width

Checks if the isthmus and groove have the correct width.

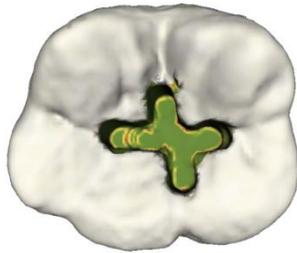


- ≠ (red) Too narrow, less than 1.0 mm.
- ≠ (green) Ideal width, between 1 and 1.3 mm.
- ≠ (blue) Too wide, more than 1.3 mm.

Finish of walls and line angles

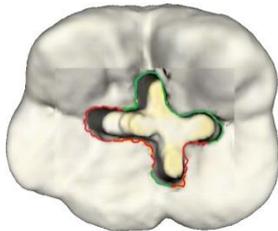
Checks if walls and internal line angles are smooth and well defined.

- ≠ (red) Rough surface.
- ≠ (green) Smooth surface.



Contour smoothness

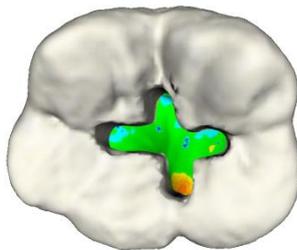
Checks if the contour of the outline shows a smooth continuous curve.



- ≠ (red) Rough curves.
- ≠ (green) Ideal, smooth continuous curves.

Depth of preparation and parallel floor

The parallelism is checked by comparing the student's preparation with the average depth of the ideal preparation.

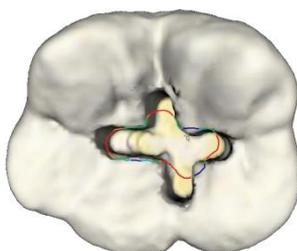


The depth is checked by measuring the difference between the depths of the student's preparation compared to the depth of the ideal preparation at the point where the central axis crosses the floor of the preparation.

- ≠ (red) Too deep, deviation from ideal preparation is more than 0.5 mm.
- ≠ (green) Ideal, less than 0.5 mm deviation from ideal preparation.
- ≠ (blue) Too shallow, deviation from ideal preparation is more than 0.5 mm.

Underprepared /Overprepared

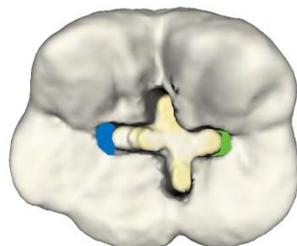
The contour of the student's cut in the occlusal plane is compared with the cut of the ideal preparation to measure the undercut and overcut.



- ≠ (red) Overprepared, deviation from ideal preparation is more than 0.5 mm.
- ≠ (green) Ideal, less than 0.5 mm deviation from ideal preparation.
- ≠ (blue) Underprepared, deviation from ideal preparation is more than 0.5 mm.

Divergence

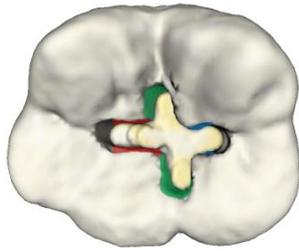
Checks if mesial and distal walls of the central main groove of the preparation are divergent.



- ≠ (red) Convergence, angle of walls is less than 0°.
- ≠ (green) Ideal divergence, between 0 and 7 degrees.
- ≠ (blue) Over divergence, divergence of walls is more than 7°.

Convergence

Checks the wall angle of lingual and buccal walls compared to the tooth's long axis.



≠ (red)

Divergence, angle of walls is less than 0°.

≠ (green)

Ideal convergence, between 0 and 7 degrees.

≠ (blue)

Over convergence, convergence of walls is more than 7°.

Setting up a case for Class I Objective Assessment using an ideal preparation

Preparing the teacher's ideal Class I preparation:

1. In the Course Manager, go to the Models page and create a copy of the model you would like to build an Objective Assessment case for.

Making a copy of a model will give you the rights of editing the model, as the new model will get your institutes copyrights.



Tip! Make sure to give the copied model a new name such you are able to distinguish it from the original model.

After making the copy, make sure to publish the new model.

2. Go to the Cases page and click 'New case'. Create a simple case that you will solely use to create the ideal prep with.

Case details: Keep it minimal, only case name and case type are needed at this stage. Set 'Max attempts' to 'No limit'.

Model selection: Select the model you just copied*
Select the tooth you want to create an ideal preparation for.

Patient details: Irrelevant at this stage, leave it off.

Treatment plan: Irrelevant at this stage, leave it off.

Instrument selection: Select the instruments you need for the creation of your ideal preparation.

Treatment execution: Make sure the 'Save/Load snapshot' option is enabled.

Analysis: Make sure to have Objective Assessment disabled!

* When you select the model, please check the author details in the right pane. The author should be someone from your institute.

Save and publish your case.

3. Plan a course that contains the new case created at step 2.
4. Login on the Simodont.
5. Start the case and create the ideal preparation.
6. Make sure the last state of the tooth is the perfect ideal preparation.
7. Submit the attempt. A final snapshot from the preparation is taken and saved on the server.

Mapping the teacher's ideal preparation to the model

8. Go back to the Course Manager. Go to the Models page and again, Edit the model created in step 1.
Select the tooth you just made the ideal preparation for.
Scroll down till you see 'Ideal prep', and click 'Add ideal prep'.
From the pop-up window, find the correct ideal prep.
Enter the requested information and click 'Select'.
Save and publish the model.

Creating a case with OA for students

9. Go to the Cases page and click 'New case'. At this stage you can create a new case that will be planned for students.

Case details:	According to your preferences.
Model selection:	Select the model you updated in step 8. Select the tooth you created the ideal preparation for.
Patient details:	According to your preferences.
Treatment plan:	According to your preferences.
Instrument selection:	According to your preferences.
Treatment execution:	According to your preferences.
Analysis:	Make sure to have Objective Assessment enabled and select the ideal preparation you want to use.

Save and publish the case.
10. Plan the case in a course for your students.

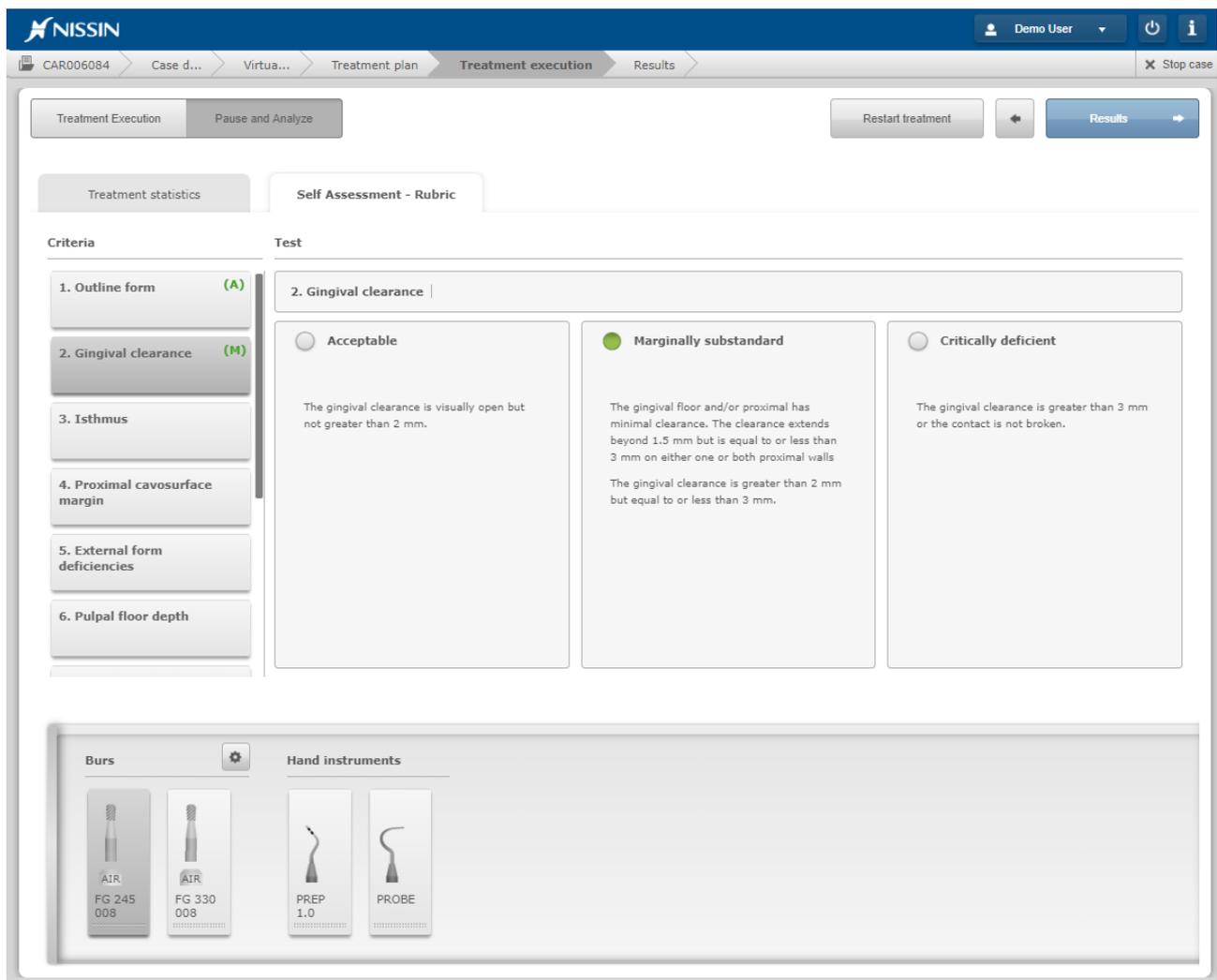
Self-Assessment Rubric

Enable this option to show the self-assessment matrix that students need to fill in during treatment. The rubric is shown in the Pause and Analyze section.

Teachers are able to review the scoring in the Evaluation Environment and can enter their scoring next to the student scoring.

The Simodont comes with a set of example rubrics.

In case you want to implement your own rubric, please contact NISSIN. We are able to remotely install a custom rubric.



Question forms

Since version v4.8 of the Simodont Courseware it is possible to add question forms at several locations in a case. At this moment it is possible to add question forms for the individual sections on the Patient details and the Treatment plan page.

Location of the question forms

You will recognize the locations where you can add a question form by the Q&A button in the Case Wizard.

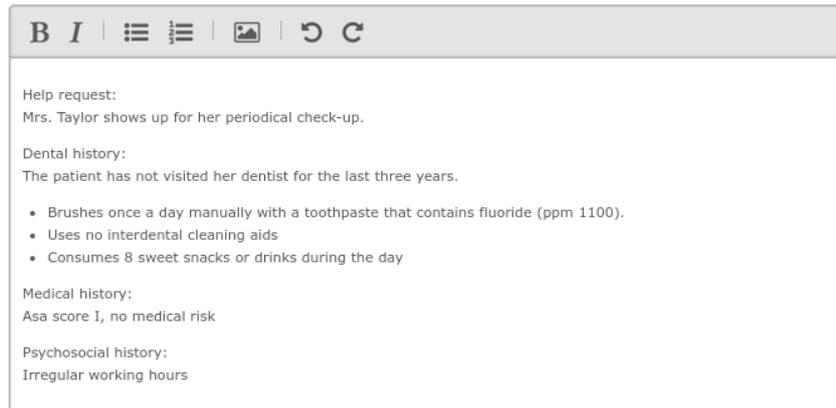
When a question form is added/active the question mark changes to green.

Reason for visit



A screenshot of a question form for the 'Reason for visit' section. The form is empty and features a toolbar at the top with icons for bold (B), italic (I), bulleted list, numbered list, image, refresh, and undo. A 'Q&A' button is visible in the top right corner.

Patient history



A screenshot of a question form for the 'Patient history' section. The form contains the following text:

Help request:
Mrs. Taylor shows up for her periodical check-up.

Dental history:
The patient has not visited her dentist for the last three years.

- Brushes once a day manually with a toothpaste that contains fluoride (ppm 1100).
- Uses no interdental cleaning aids
- Consumes 8 sweet snacks or drinks during the day

Medical history:
Asa score I, no medical risk

Psychosocial history:
Irregular working hours



Question form added

Blue: no question form added yet

Green: Question form was added for this section

The locations of the question forms are shown to the student in a similar way. They are also shown by the Q&A button. However, the student will only see these buttons in case a question form was added to that particular section.

Type of questions

The following types of questions are available in the question form:

Open: An open question cannot be answered with a simple 'Yes' or 'No' or other static response.

Multiple choice - single answer: For this type of question, the possible answers are given to the student. Only one answer is the correct answer.

Multiple choice - multiple answer: For this type of question, the possible answers are given to the student. Multiple answers can be assigned to be correct.

Question form Builder and Viewer

The question form contains a Builder and a Viewer section. In the Builder, questions can be added to the form. The Viewer allows the teacher to preview the form as it will be shown to the students when working on the Simodont.

Question form components

The Simodont Courseware supports the following components in a question form:

- Question text:** Here the question itself is entered.
- Question type:** Choose here the type of question.
- Required:** For each question, a teacher should indicate of the question is mandatory. If a question is labeled as 'required', the student will not be able to continue the treatment before he has answered the question.
- Correct answer (for multiple choice):** Check this box to indicate correct answer(s) for a multiple choice question.
- Add question:** More questions can be added to the form.
- Add images:** Images and an image description can be added to the form. They can be aligned left, center or right using the alignment buttons that become available when editing the image. 
- Add paragraph:** A paragraph component can be added to add for example extra instructional information, references or image labels.

To delete a component from the form click the bin that appears on the right top corner when editing the component.

To rearrange components within the form, click the up/down arrow that appears on the right top corner when editing the component.



Remove and rearrange components

Comments for multiple choice questions

If desired, it is possible to give the student immediate feedback or information on a multiple choice question while the student is answering the questions on the Simodont. In order for that to work, the teacher must enter a text in the comment box of the specific answer. This comment is shown to the student immediately when the student selects this answer.

The screenshot shows the configuration interface for a multiple choice question. At the top, it says "Question type" with a dropdown menu set to "Multiple choice: Single-answer". Below this is a "Required" checkbox. There are two visible options, each consisting of a radio button, a text input field, and a "Comment given once answered" text area. Each option also has a "Correct answer" checkbox. At the bottom, there is a "Click to add option" button.

Reporting on question forms

It is possible to export the question from data from a case to a CSV file, which can be imported in Open Office or Excel. For more information, please refer to [Creating a Course data export](#).

4.3. Instruments and instrument sets

The instruments page is used to manage your instruments and instrument sets. This is the place where you compose your own instrument sets.

The instrument library contains 70+ rotary instruments and several hand instruments. For a detailed list of all instruments please refer to the Simodont Content Catalog.

Generic versus case specific instrument sets

The software distinguishes two types of instrument sets: a generic (or global) set and a case specific instrument set.

Generic instrument set	The generic or 'global' instrument sets are the sets that are visible at the Instruments page, under the Sets tab.
Case specific instrument set	The case specific instrument sets, are sets that are created at case level. You would typically use this only when a generic instrument set is not sufficient for your case, and you need specific changes only for this particular case.



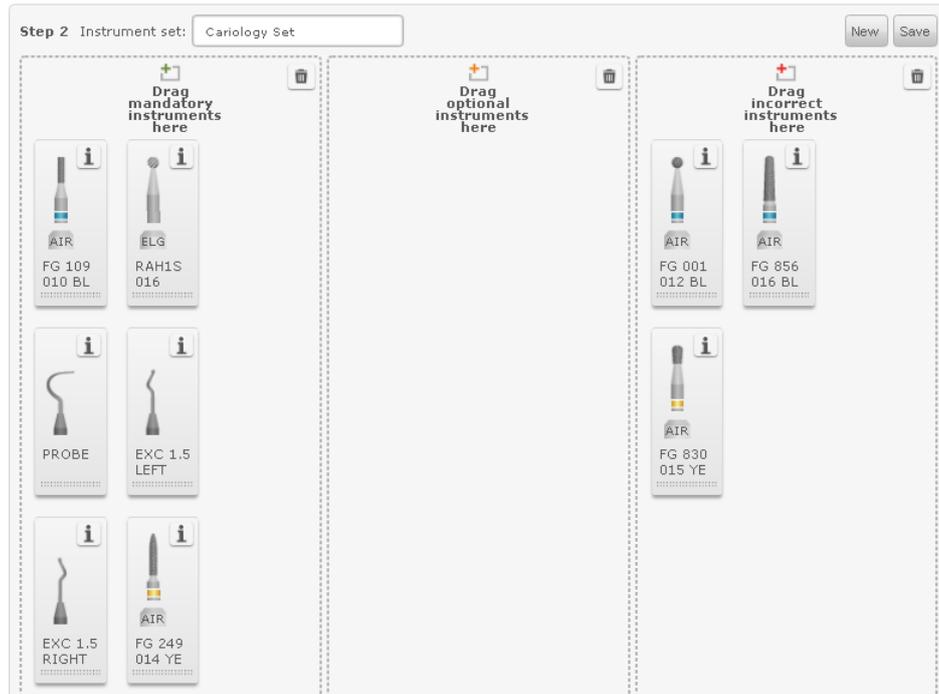
Tip! It is best to minimize the use of case specific instrument sets. Typically instrument sets are institute specific but are pretty much fixed per procedure. Try to first customize and create new global sets and use these when building your cases. Editing a generic instrument set, will affect all cases that use this instrument set. This way you will only need to change the global set in order to change the collection of instruments in a collection of cases.

Instrument selection as part of the exercise

Instead of just offering the right collection of instruments for a certain procedure to a student, it is also possible to make the instrument selection an active task for the student, as part of the thinking process in the treatment preparation phase of the exercise.

When you are composing an instrument set, you will see three sections in which you can drop the instruments. These sections allow you to categorize the selection of instruments in to:

Mandatory instruments	Drop all instruments that are mandatory for the procedure in this section.
Optional instruments	Drop all instruments that are not mandatory, however still allowed for the procedure in this section.
Incorrect instruments	Drop all instruments that are not allowed for the procedure but that you want to offer on the selection tray as part of the instrument selection exercise in this section.



Only instruments part of one of these sections are presented to the student within the exercise.

Finding your instruments (instrument specifics)

The instrument library contains over 70 different virtual instruments, and new instruments are added on customer request. To find the rotary instruments suitable for your procedure you can use the following instrument filters:

Filter	Description	Options
Diameter	Head size of the bur/ diameter.	<i>Many sizes available</i>
Grit/Blade	Coarseness of diamond	Yellow = extra fine Red = fine Blue = medium Green = course
	Blade configuration of hard steel/carbide*	<i>Many shapes available</i>
Shape	Shape of drilling part of the bur.	<i>Many shapes available</i>
Shank	Shank type	RA = Right Angle RAL = Right Angle long FG = Friction Grip
Material	Material of drilling part of the bur	Diamond, Tungsten carbide, hard steel
Hand piece	Type of hand piece	AIR = air rotor (turbine) ELG = Electrical Green (speed reducing) ELR = Electrical Red (speed increasing)



Use the  button to see detailed information of the selected instrument.



Please refer to the latest Content Catalog for detailed information on all available instruments.

Creating a new instrument set

There are two ways to create a new instrument set.

Using an empty tray:

1. Go to the Instruments page
2. Click 'New'
3. Enter a name
4. From the "Burs" and/or "Hand instruments" tab drag and drop the individual instruments to the sections 'mandatory', 'optional' and 'incorrect' on the right.
5. Click 'Save'

Copy an existing set and adjust

1. Go to the Instruments page and select the "Set" tab
2. Click on the info button of an instrument set 
3. Click 'Copy'
4. Enter a new name
5. Make the preferred changes
6. Click 'Save'

Editing an instrument set

When you edit an instrument set the changes will affect all cases that are using this set. To edit a set:

1. Go to the Instruments page.
2. Go to "Set" tab.
3. Select the set you want to edit.
4. From the "Burs" and "Hand instruments" tab. drag and drop your preferred instruments into the sections 'mandatory', 'optional' and 'incorrect' on the right, and remove you do not want to use by dragging them from right to left.
5. Click 'Save'



Note! Most cases that were provided with the system make use of one of the predefined instrument sets. Editing these instrument sets thus also affects all cases that use this instrument set.

For this reason it can be interesting to customize the predefined instrument sets according to your own preferences. This way all cases will make use of your preferred instruments

Import instrument

In order to import an instrument;

1. Go to the Instruments page
2. Click 'Import instrument'
3. Select the instrument package (tgz file)
4. Close the Import summary pop-up

Instruments are created and provided by NISSIN. In case you have requested a new instrument for your library, NISSIN will provide this new instrument via an import package. For most rotary instruments an import package is sufficient to add the instrument. Adding new hand instruments often also require a software update.

Import instrument set

In order to import an instrument set;

1. Go to the Instruments page
2. Click 'Import set'
3. Select the instrument set package (.tgz file)
4. Close the Import summary pop-up

Export instrument

1. Go to the Instruments page and click on the "Burs" or "Hand instruments" tab
2. Click on the info button of an instrument **i**
3. Click 'Export'
4. A tgz file is saved in the downloads folder

Export instrument set

1. Go to the Instruments page and click on the "Set" tab
2. Click on the info button of an instrument set **i**
3. Click 'Export'
4. A tgz file is saved in the downloads folder

Delete instrument set

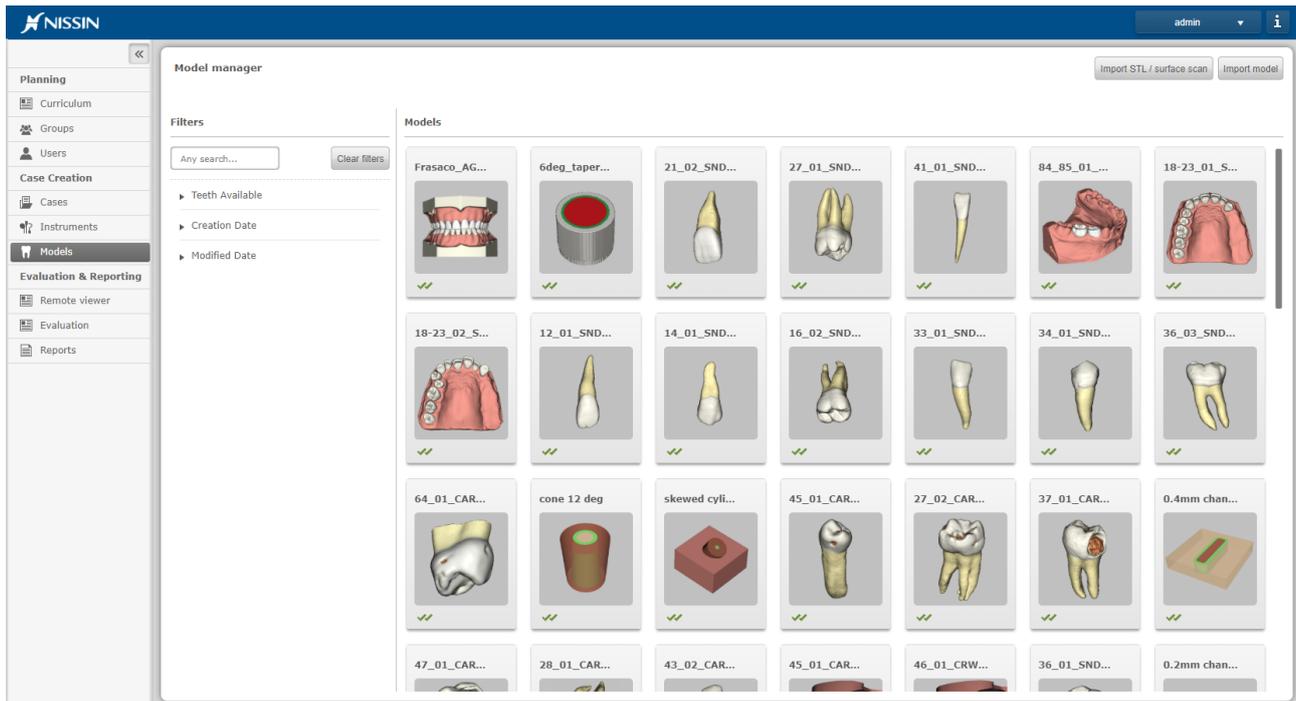
1. Go to the Instruments page and click on the "Set" tab
2. Click on the info button of an instrument set **i**
3. Click 'Delete'

An instrument set can only be deleted when it is not used in any case.

4.4. Models

The Models page shows an overview of the model library. The models page is where you manage (edit, add and delete) models from the model library. There are over 60 different models available and new models are released regularly.

Since v4.8 it is possible to also import your STL intra oral surface scans in to the generic model library. This is in addition to uploading STL intra oral scans to a single user. By adding STLs to the generic model library, you are able to build cases based on the STL scan and provide them to a whole group of users in one go (by planning the case in a course).



Please refer to the latest Content Catalog for detailed information on all available models.

The model library contains two different types of models:

- Manual dexterity models; abstract shaped practice blocks
- Tooth models; created based on scan data from real extracted teeth

The available edit options per model depend on the type of model.

Available model actions are:

- Edit model
- Publish model
- Copy model
- Delete model
- Export model
- Import model
- Import STL

Edit model

Editing of models is only possible for models that are originally owned by your institute.

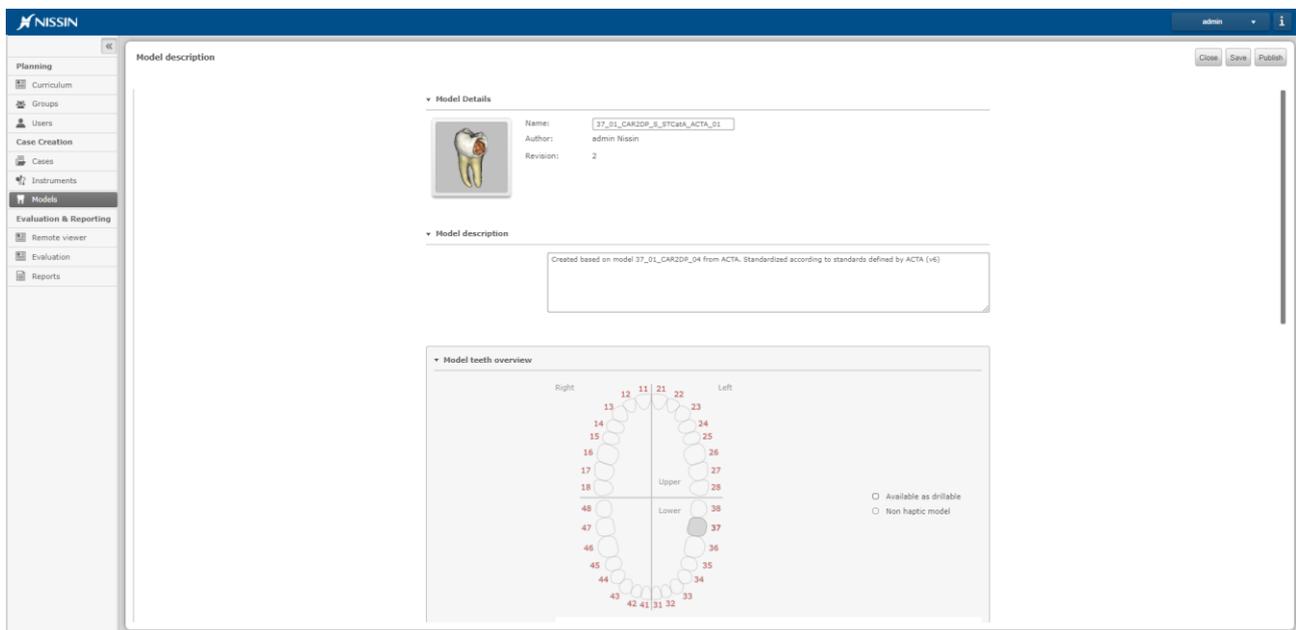
Models that are not published will not be shown in the case wizard and therefore are not selectable for case creation.

In order to edit a model;

1. Go to the models page
2. Select a model
3. In the model details pop-up, click 'Edit'

The model editor opens up

4. In case of a tooth model, select a tooth from the teeth overview. The tooth details for the selected tooth become editable.
5. Make the preferred changes
6. Save and publish

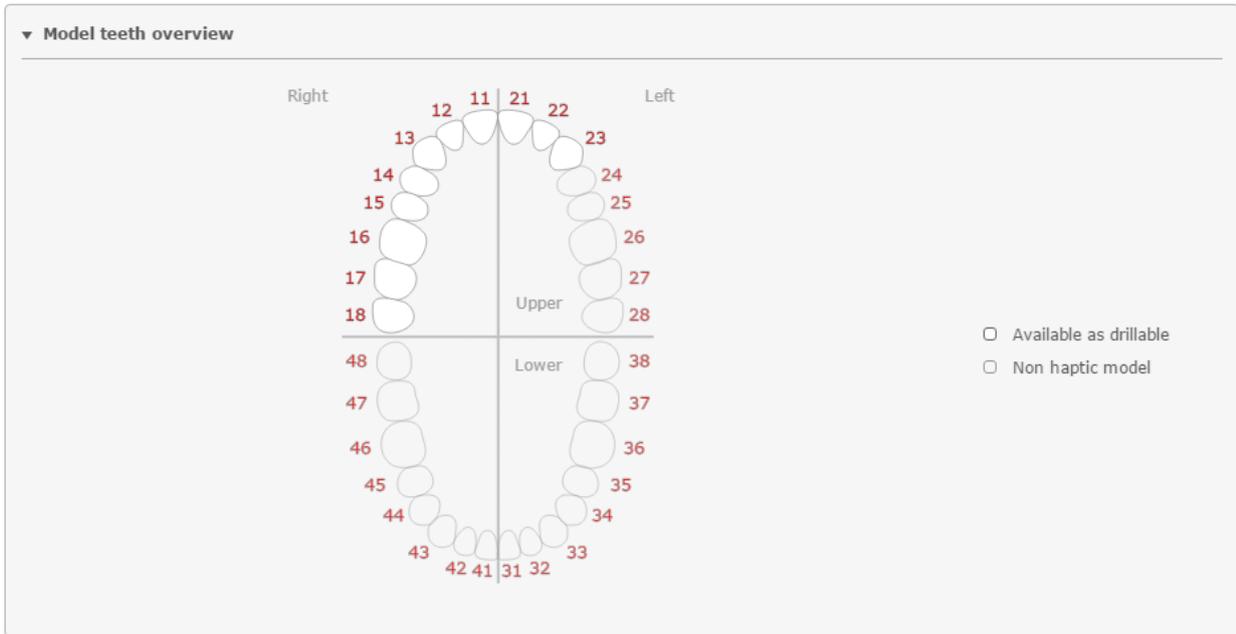


Model teeth overview

The teeth model overview shows which teeth are available in the selected model.

Teeth in 'white' are available as drillable models. Teeth in 'Grey' are not available at all, or just visually present but not haptic.

In order to edit the tooth details and media for a specific tooth, simply select one of the white teeth from the model teeth overview.



During case creation you will be prompted with a similar tooth selector, to make your selection of maximum three drillable teeth.

- Segments:** The Treatment plan page is optional. If this page is disabled it is excluded from the case shown in the SA.
- Tooth description:** This is the description of the selected tooth.
- Tooth media (radiographs, intraoral):** In this section you can add radiographs and intra oral images of the selected tooth.
- Ideal Prep:** Ideal preps are needed for the automatic objective assessment method. See paragraph 'Automatic Objective Assessment' for more information.
 In order to assign an ideal prep to a model:
 1. Go to the models page
 2. Edit a model
 3. Select a tooth
 4. Click 'Add ideal prep'
 5. Find the correct ideal prep
 6. Click 'Ok'

Publish model

Just like a case, a model has one of the following states:

1. 'new/in progress' 

2. 'published' ✓✓

Important to know is:

- As long as a model (revision) is not published, it is not ready to be used in a case. The model is not shown in the model page in the case wizard during case creation.
- Every time you publish a model, the latest revision of that model is made official and becomes locked. When you want to make changes after publication of a model, the system automatically creates a new revision for that model. Hereby the original revision of the model remains untouched. This is to make sure that model revisions that are already used in running courses do not change half way.

Publishing a model is done either:

- in the model editor, by clicking the 'Publish' button in the right upper corner
- by clicking on 'Publish' in the model details pop-up

Copy model

In order to copy a model:

1. Go to the models page
2. From the model overview, select a model
3. In the Model Details pop up, click 'Copy'. A copy of the model is created.
4. Edit the model according to your preferences

Delete model

In order to delete a model:

1. Go to the models page
2. From the model overview, select a model
3. In the Model Details pop up, click 'Delete'.



Note! Model deletion is only allowed for models that are not used in a case. When deleting a model, you will delete all revisions of this model.

Export model

Sharing and transferring models from one system to another is possible using the model import and export functionality.

In order to export a model:

1. Go to the models page
2. From the model overview, select a model
3. In the Model details pop-up, click 'Export'.

All model content (model information, images, raw model data) is packed together in a .tgz file and placed in the 'Downloads' folder.

Export of a model is only allowed when the case is in state 'published'. If your model is still 'in progress', make sure to finish the model, save and publish it.

The exported zip file can be fed directly into the CM through 'import model' in the Cases page.

Import STL

In order to import an STL file;

1. Go to the Models page
2. Click 'Import STL'
3. Select the STL file

Click 'Open'. Importing an STL may take a few minutes, depending of the resolution and size of the scan.

4. Once the import is finished, close the Import summary pop-up

When importing an STL file, you will be prompted with an import summary. This summary will tell you if the STL file was successfully converted and imported , or that the import failed .



For more information on working with STL files, please refer to chapter 5: Intra oral scan workflows

Import model

In order to import a model:

1. Go to the Models page
2. Click 'Import model'
3. Select the model package file (.tgz file)
4. Close the Import summary pop-up

When importing a model, you will be prompted with an import summary. This summary will tell you which content is successfully imported , which is skipped  and for which content the import failed .

Import of content is skipped for content that already exists on your system.

Updating a model that is being used in a case/course

Updating a model in a case that is planned for a course, would mean creating a new revision of a case. Please see paragraph "Updating a case that is being used in a course" for more information.



Note! Please be aware that changing a model in an existing case which is already being used in a course will lead to compatibility problems when reloading snapshots on the Simodont. The older snapshots taken for a different model, will no longer match the new selected model. Therefore, you should be very careful with changing models in an existing case.

4.5. Content Copyrights / intellectual property

Every institute that uses the Simodont Dental Trainer has its own Copyright. Every piece of content is labeled with this trademark to be able to identify the original source of the content.

5. INTRA ORAL SCAN WORKFLOWS

Since the v4.8 release of the Simodont Courseware there are three possible workflows to use patients' intra oral scans in the Simodont Dental Trainer:

- The "STL upload for a single user, performed by a teacher" workflow
- The "STL upload for a single user, performed by a student" workflow (*new since v4.8*)
- The "STL upload for multiple users, performed by a teacher" workflow (*new since v4.8*)



Note! Please be aware that the Simodont system works with STL binary format only.



Tip! If you quickly want to try out the Patient Scan workflow, you can make use of the example file that is made available to you at step 4. This allows you to skip step 1 and 2 for testing and demo purposes.



Note! Please be aware that; Intra oral scans (STL files) are converted in to models with a uniform color and hardness, as color information and internal anatomy information is not included in the scan itself.

The "STL upload for a single user, performed by a teacher" workflow

In the "STL upload for single user, performed by a teacher" - workflow, the intra oral scan (STL files) is assigned to one user and this is done by a teacher. This workflow is used when only one student is allowed to work on a specific patient scan, but he is not allowed to have any patient specific data in his possession because of patient data safety regulations.



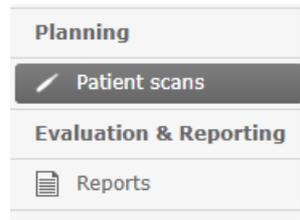
The workflow consists of the following steps that are further explained in the paragraphs below.

- Step 1: Create an intra oral scan. For instructions on how to create a proper intra oral scan please refer to the manufacturer's instructions of your intra oral scanner.
- Step 2: Crop the scan to a proper size using the Intra Oral Scan Editor. Refer to paragraph: 5.1.
- Step 3: Create a case with type 'Patient specific treatment'. This can be done beforehand. Refer to paragraph 5.2.
- Step 4: Assign the patient scan to a user. Refer to paragraph: 5.3.

The "STL upload for a single user, performed by a student" workflow

Since the v4.8 it is possible to let students upload intra oral scans to their own user. Students use the Course Manager on the Teacher Station to do this. When they login to the Course Manager with their student user credentials, they

will see a very minimal version of the Course Manager, where they are solely able to upload scans and download reports for their own user only.



CM menu options when student user is logged in



In this workflow, only the case template still must be created by the teacher. The other steps in the workflow could be done by a student as well. However, it is up to the school to decide who is performing these first two steps.

The student workflow is quite similar to the teacher workflow for uploading scans. The only difference is that the upload of the scan itself is done by the student instead of the teacher:

- Step 1: Create an intra oral scan. For instructions on how to create a proper intra oral scan please refer to the manufacturer's instructions of your intra oral scanner.
- Step 2: Crop the scan to a proper size using the Intra Oral Scan Editor. Refer to paragraph: 5.1.
- Step 3: The teacher creates a case with type 'Patient Specific Treatment'. This can be done beforehand. Refer to paragraph 5.2.
- Step 4: The students assign the patient scan his own user.



For safety reasons, the student workflow of uploading patient scans (STL) is by default disabled on customers systems. This is because this feature is part of the Course Manager which is accessible through the Teacher Station only. Allowing students to access the Teacher Station, needs to be a well-considered decision.

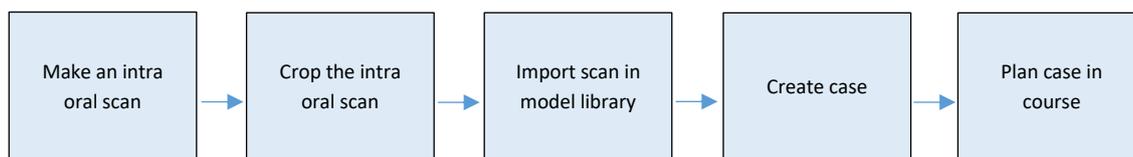
As an alternative we could discuss the option of adding a separate Student Workstation to the Simodont's Simonet, or Student user Windows account on the Teacher Station for the purpose of uploading scans by students.

In case you are interested in using this option, please contact Nissin Dental Products Europe BV. Together we will discuss the safety precautions that may be required. After agreeing on the implementation and usage of this feature we can unlock this functionality for you.

The “STL upload for multiple users, performed by a teacher” workflow

The “STL upload for multiple users” workflow has a whole different approach. You would typically use this workflow if you want to provide a scan to multiple users and you are also allowed to do so (no patient data safety regulations are being violated).

In the multiple user assignment workflow, you import the STL file in the Simodont’s generic model library, which makes it possible to use the model in the normal case creation process and allows you to plan the case in a normal course like you would do for other cases.



The workflow consists of the following steps:

- Step 1: Create an intra oral scan. For instructions on how to create a proper intra oral scan please refer to the manufacturer’s instructions of your intra oral scanner.
- Step 2: Crop the scan to a proper size using the Intra Oral Scan Editor. Refer to paragraph: 5.1.
- Step 3: Import the scan in the Course Manager Models page. Refer to the instructions below.
- Step 4: Create a case and select the imported STL at the model selection step. Save, publish and plan the case as you would normally do for newly created cases. Refer to chapter 2 and 4 for more information on case creation and course planning.

In order to import an STL file;

1. Go to the Models page
2. Click ‘Import STL’
3. Select the STL file
Click ‘Open’. Importing an STL may take a few minutes, depending of the resolution and size of the scan.
4. Once the import is finished, close the Import summary pop-up

At import you will be prompt with an import summary. This summary will tell you if the STL file was successfully converted and imported  , or that the import failed  .

5.1. Cropping the scan with the Intra Oral Scan Editor

Before the patient scan is imported in the CM, it should be cropped to the appropriate size. This is done with the Intra Oral Scan Editor.

Maximum allowed scan size

The maximum allowed volume for an STL model in the Simodont is 9000 mm³. In practice, this would mean that the scanned model can contain approximately 3 to 4 neighboring teeth. Larger models could cause performance problems within the Simodont.

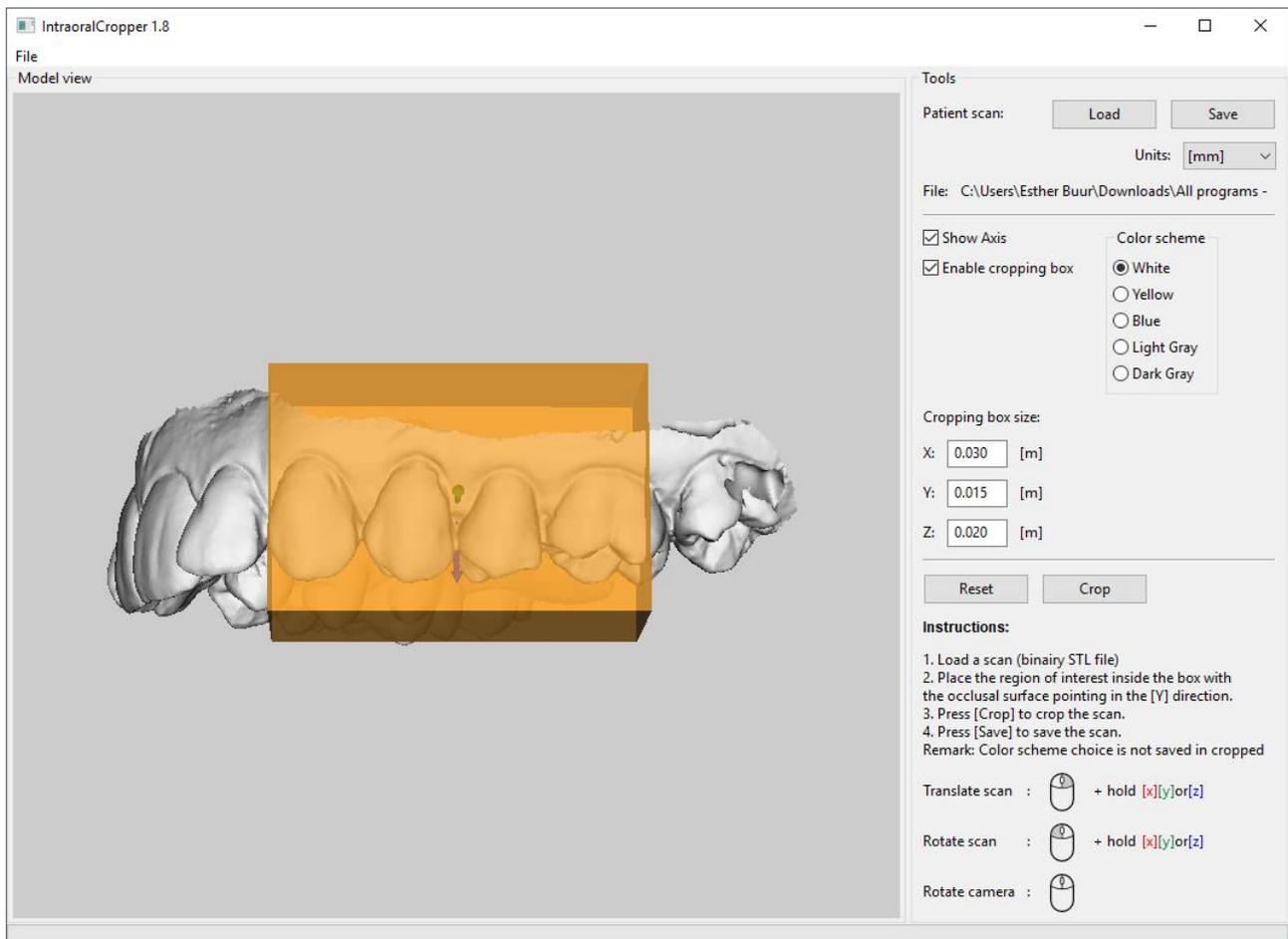
Cropping box size

To make sure that the scans have the appropriate size for the Simodont, they need to be prepared with the Intra Oral Scan Editor. The special cropping box in this tool has the maximum allowed volume of 9000 mm³. You are allowed to adjust the length, width and height of the box, as long as the maximum volume stays 9000 mm³. The Intra Oral Scan Editor will tell you when you exceed the maximum allowed volume.

1. Start the Intra Oral Scan Editor using the shortcut on your desktop.
2. Go to 'Load' to the load an STL file /patient scan.
3. Select the STL file.
4. Position the scan in the box such that your region of interest fits inside the box. Make sure the occlusal surface of the scan is parallel to the top surface of the box.
5. Once positioned correctly, click 'Crop'. The part of the scan that falls outside the box is removed.
6. Click 'Save'.
7. Close the Intra Oral Scan Editor.

Positioning the scan in the box:

Left mouse button	rotate scan	+ hold X, Y or Z key for rotation around single axis
Right mouse button	translate scan	+ hold X, Y or Z key for translation on single axis
Middle mouse button	rotate scene	
Mouse wheel	zoom in / zoom out	



Intra Oral Scan Editor user interface

View options

The intra oral scan editor has a few viewer options, like show 'show axis', 'enable cropping box' and color scheme settings. These are solely meant to offer you some options to inspect the model better. The color scheme settings do not have an effect on the actual color of the model in the Simodont. The

Uniform color and hardness in model

Intra oral scans are converted in to models with a uniform color and hardness, as color information and internal anatomy information is not included in the scan itself, and not captured in an STL file.

A uniform model also means that the Simodont will not be able to identify the different teeth in the scan, like is done in other models.



Note! The larger the file size of the scan, the more time it takes to process the scan during import in the Course Manager.



Tip! If the Intra Oral Scan Editor is running very slow, please make check if your computer uses the Nvidia graphics card preferred graphics processor is set to : 'High-performance NVIDIA processor'. And make sure no TeamViewer session is action while working with the Intra Oral Scan Editor, as this will have an enormous effect on the performance of the tool.

Scan size check in the Courseware

Since v4.8 you will get a warning if the scan has a volume larger than 9000 mm³. In that case you will be prompted with a warning that the scan cannot be uploaded and needs to be cropped to isolate the region of interest.

5.2. Create a case with type 'Patient Specific Treatment' (for teachers)

Before you can assign a patient scan to a specific user, you need to create a 'Patient Specific Treatment' case. This case is meant as a carrier for one or multiple scans. During case creation, you do not have to select a model, as the model is assigned when importing the patient scan to the user.

1. In the CM, go to the Cases page.
2. Click 'New case'.
3. In the Case description page, make sure to select the case type 'Patient Specific Treatment'.
4. Complete the case creation according to your preferences. Please keep in mind that this one case can be used to carry multiple scans. It might be efficient to create a generic patient specific treatment case that fits different scenarios and therefore is usable for different scans.
5. Save and publish the case either directly by exiting the Wizard, or later from the Cases page by clicking on the case and clicking 'Publish'

5.3. Assigning a patient scan to a user (for teachers)

1. As a teacher, go to the Users page.
2. Select a user.
3. In the user details pane, look for the Patient scan section.
4. Click the [+] button.
5. Select the STL file and enter the details. Refer to paragraph 5.5.
6. Click 'Add to user'.
7. Wait until the conversion of the STL is finished.
8. Click Save. The Patient scan is uploaded for the selected user.

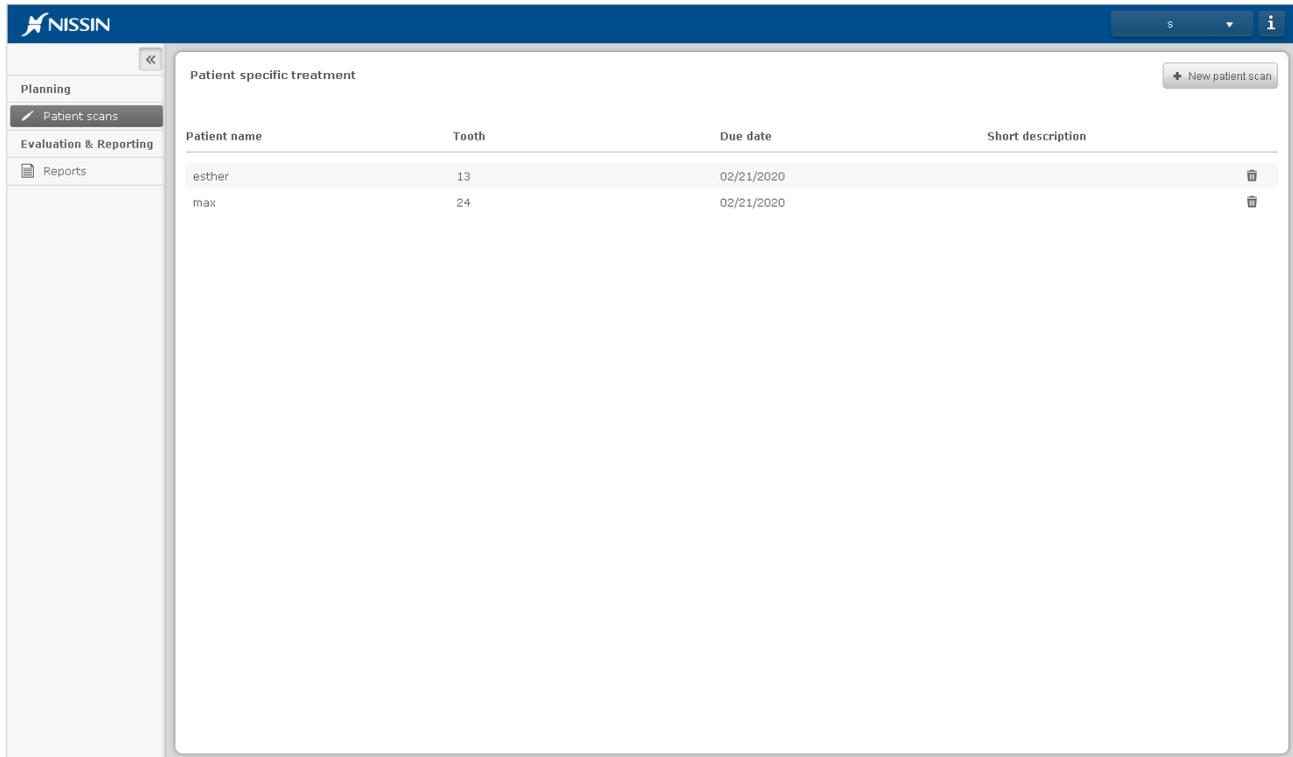
Scan size check in the Courseware

Since v4.8 you will get a warning if the scan has a volume larger than 9000 mm³. In that case you will be prompted with a warning that the scan cannot be uploaded and needs to be cropped to isolate the region of interest. To crop the scan please refer to the instructions in paragraph 5.1.

5.4. Assigning a patient scan to your own user (for students)

1. As a student, log in to the Course Manager with your student credentials.
2. Go to the Patient Scans page
3. Click the New patient scan [+] button.
4. Select the STL file and enter the scan and case details. Refer to paragraph 5.5.
5. Click 'Upload scan.'

6. Wait until the conversion of the STL is finished.



This is the look of the Course Manager when a student logs in.
Only Uploading of patient scans and downloading a user report is possible

5.5. Patient scan assignment details

- Patient scan:** Here is where you select an intra oral surface scan or so called 'STL' file.
- Patient:** Enter any useful reference to the patient to recognize the scan in the Simodont. This information is shown on the case tile in the Simodont.
- Tooth:** Select the tooth of interest for this case such that the user knows which tooth to treat.
- Due date:** Select a due date here. After the due date the scan is not visible to the user anymore. The scan becomes available immediately after saving the assignment.
- Case:** Select one of the available 'patient specific' case templates.
- Short description:** Enter a short description for this particular patient scan. This information is shown on the case tile in the Simodont.

CM upload patient scan

Case tile in SA

5.6. Downloading a report of a patient scan exercise (for students)

In order to download a user report:

1. Go to the Reports page
2. Click the User report icon
3. Select the student
4. Select a patient scan
5. Click Generate in the right upper corner. A report is generated.
6. Optional; select an STL to download

5.7. Delete a patient scan for a user (for teachers)

1. Go to the Users page.
2. Select a user.
3. In the user details pane, look for the Patient scan section.
4. Select the scan you want to delete.
5. Click the recycle bin  button.
6. Click Save.

5.8. Intra oral scans and crown case visibility options

Please be aware that not all Crown Case specific visualization options are available for models generated from STLs. This is because in these models, the teeth are not recognized as different components, where this is required for some of the visibility options to work.

Model generated from:	Tooth axis	Antagonist	Outline	Glass Grid	Tooth visibility options
Intraoral scan / STL	X	X	V <i>Only blue, due to missing separation of teeth</i>	V <i>Free moving, not automatically snapped to tooth axis as tooth axis is not defined</i>	X
Micro CT	V	V	V <i>Main tooth is blue, adjacent teeth are red</i>	V <i>Snapped to tooth axis</i>	V

SIMODONT COURSEWARE DENTAL TRAINER APPLICATION

The Student Application is the software application running on the Simodont Dental trainer. This chapter describes what the student is viewing while working on the Simodont. Note that the content will be similar but more limited than when logging in as teacher.

1. Login / logout

After the application has started he is redirected to the login page.

Here he can login by either typing his username and password, using you're his swipe card or by pressing the Demo button.

Based on the student's credentials he will be redirected to his account and only the user specific assigned cases will be displayed.

After a successful login, the top right of the application will become stationary. It will display the user profile button, shutdown button and the system information button.

- The system information button is intended for NISSIN support.
- The shutdown button can be used to shut down the system; it will prompt for confirmation when pressed.
- Once logged in he is able to access the user profile. See the user profile chapter for more information on the user profile.

2. Student profile

Each student has a profile which contains personalized settings for the simulator. The default values can be adjusted during the execution phase. The settings will be saved in the student profile.



The screenshot shows the 'MOOG Student' profile settings window. It contains the following fields and controls:

- Username:** studentmoog
- Preferred language:** English
- Handedness:** Right
- Sound volume:** 0 to 100 (slider)
- Depth factor:** 0 to 2 (slider)
- Rotation sensitivity:** 0 to 100 (slider)
- Translation sensitivity:** 0 to 100 (slider)
- Buttons:** Save, Cancel

3. Demo mode (optional)

The demo account is a generic account that can be used by anyone for giving demonstrations. This account cannot be used for any training or research purposes, as all generated data will **NOT** be saved.

With the DEMO button you will be automatically redirected to a generic demo account.



The quick access to the demo account (the DEMO button) on the SA is by default disabled. Please, request NISSIN to enable the demo button on your Simodont Dental Trainer when preferred.

or

Contact NISSIN for the login credentials for the demo account, without using the demo button. The login credentials are not shared in this manual for security reasons. This is because the demo account gives access to all published cases in your library.

4. Assigned cases

After login the student will be redirected to the assigned cases page based on his credentials. This displays the active courses to which he is enrolled. Each course consists of one or more cases.



If a student cannot find his course/case in the list he is either not enrolled for the course or the course is not active yet.

The screenshot displays the NISSIN Case overview interface. At the top, the user is logged in as 'Wen Hatton'. The main section is titled 'Case overview' and has a 'show / hide' button. Below this, there are two tabs: 'Assigned cases' (active) and 'Assessed Work'. The 'Assigned cases' section is divided into two categories: 'Crown I' and 'Operative I'. Under 'Crown I', there are two case cards: CRW002001 (Crown preparation on tooth #46) and CRW006015 (Porcelain crown preparation on Frasco AG3 model...). Under 'Operative I', there are six case cards: CAR002002 (Class I treatment on tooth #27), CAR002003 (Class II treatment on tooth #37), CAR002004 (Class II treatment on tooth #47), CAR002005 (Class II treatment), CAR002006 (Class V treatment), and CAR003001 (Class II treatment). Each case card includes a patient photo, a 'NEW' status, and a due date.

Case overview when logged in as a student

Each case tile shows the following information:

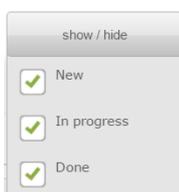
Case name	The name of the case
Short description	A short description of the case
Attempts	The maximum number of attempts that are allowed for this case.
Due date	The date at which the case will expire, after this date the case will not be visible.
State icon	<p>The state of a case.</p> <p>New:</p>  This case is new. No attempts yet. <p>In progress:</p>  The case has been started, but was not submitted (handed in) yet. <p>Done:</p>  The case is completed and submitted at least once. This does NOT automatically mean a student has also passed the assignment. <p>Automatic exam passed:</p>  If the case holds an exam this means that the exam is passed successfully.

If the case includes an automated exam, the tile shows the amount of failed and passed attempts. Note that the score that is shown includes the number of exams taken. The amount of attempts that have to be passed before an exam taken is determined by the Teacher during the creation of the course. After the student has passed the exam, he/she is not able to start the case again.



Filter

The filter button can be used to filter the cases by state.

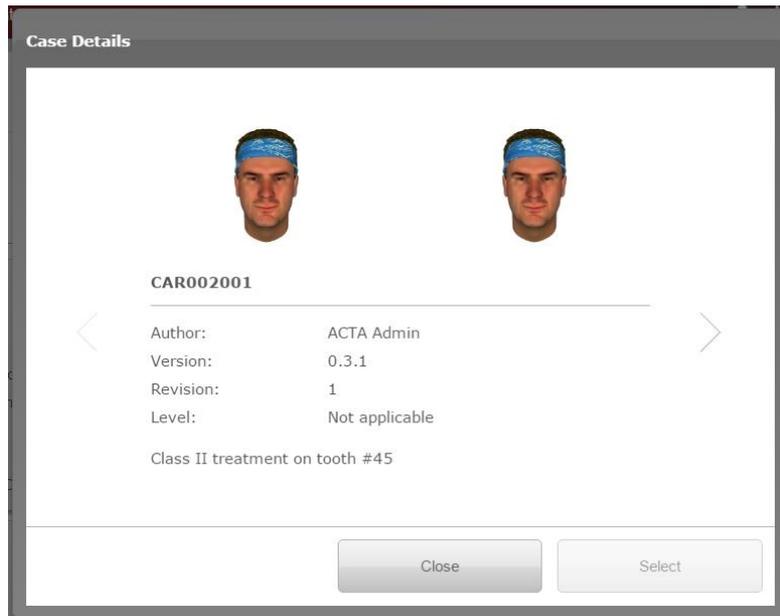


Case details



For more information tap the information icon on the tile. This will open a popup that contains the details of the case. Here you can find the Author and revision.

Please note that a case can have multiple revisions. It can be helpful in case of any issues or questions about a case to check the name and the revision number of the case.



When the case you would like to work on is located, it can be started by tapping the case tile or tap select from the case details popup.

Case execution workflow

When a case is started, you will be working with a series of steps which are displayed as breadcrumbs at the top of the application. Which steps are available can vary depending on the design of the case. Moving from one step to another can be done by pressing the blue colored button which is always placed on the right upper corner.



Note that you might have to meet certain criteria before you can move to the next step. For example: On the instrument selection page the application can ask you to create a correct selection of instruments before proceeding to the execution page.



The amount of steps in the case workflow depends on how the case was designed. If optional steps are not configured in the case, they will not appear to the student.

Case description

This step will provide the description of the case and assignment. It contains the tips or any other additional information is needed before proceeding to the next page. If predefined stages are desired they are listed at the bottom.

Predefined stages are called steps that are required for delivery. The stages can be added on the results page with snapshots that can be created during treatment execution.

Virtual Patient (optional)

This page describes a virtual patient which contains the patient history, examinations and diagnosis.

Treatment Plan (optional)

Here the student needs to write his treatment plan and use the pictures to draw the contour of your preparation and indicate the caries infected/affected tissue.

Instrument selection (optional)

This page contains a set of instruments which belong to this case. The behavior of this page can vary depending on how the case is configured.

The options are:

1. An empty tray and the student needs to select the correct instruments before he can proceed to the next step. He will get the defined amount of attempts to make the correct instrument selection. The system will check the selected instruments when proceeding to the next step. Depending on the case design, the attempts will be registered and after a certain of unsuccessful attempts the system will make the correct selection for you.
2. The mandatory instruments are selected, optionally the student can add more by his liking.

You can select an instrument by tapping the instrument tile or dragging the tile to the tray. You can search for instruments using the instrument filters. Note that you are filtering the instruments that were designed as part of this case and not through all available burrs in the system.

Question forms

In several pages during case execution question forms can be applicable. A question form can be recognized via the Q&A icon . By clicking this icon, the question form will pop up. Three types of questions can be present:

- Open question
- Multiple choice: Single answer
- Multiple choice: Multiple answer

In case of a multiple choice question a 'Show answer' button can be available that will give you feedback on your chosen answer before actually submitting the form.

Treatment execution

When entering this page, the virtual model will be loaded in the simulator. Please note that depending on the model this may take a while. Once the model is loaded you can start the treatment in the simulator. Depending on the treatment various features are available.

Zoom in/out	Zoom the simulator view. Similar as to wearing loops. Note that the zoom level can be limited by the case.
Reset position	Resets the position of the virtual model to the startup position.
Instruments tray	The tray contains the instruments which you can use during the execution. Burs and hand instruments are separated on the tray. Evaluation instruments are also placed here.
Save snapshot	Enables you to save the current state of the model.
Load snapshot	Enables you to load a previously saved snapshot of the model that was created for this assignment.
Restart treatment	You can restart the treatment from the beginning.
Pause and Analyze	This will pause the treatment, and gives you the opportunity to analyze the current state of the model using one of the following assessment methods: <ul style="list-style-type: none">• Treatment statistics• Rubric self-assessment• Automatic objective assessment (class I only)• Evaluation against treatment plan
Radiographs	This shows the radiographs for this case during treatment execution.
Head light adjustment	Nine different light positions can be selected and the light intensity can be adjusted
Caries detector	Apply caries detector on your preparation.
View options	The view options are virtual tools that will aid in the inspection of the preparation of the main tooth. <ul style="list-style-type: none">• Antagonist (depending on the models the antagonist can also be felt)• Long axis• Outline (original contour of the tooth)• Semi-transparent tooth
Visibility options	The view options allow you to toggle between different states of

showing/hiding teeth in the model. This will aid in the inspection of the main tooth.

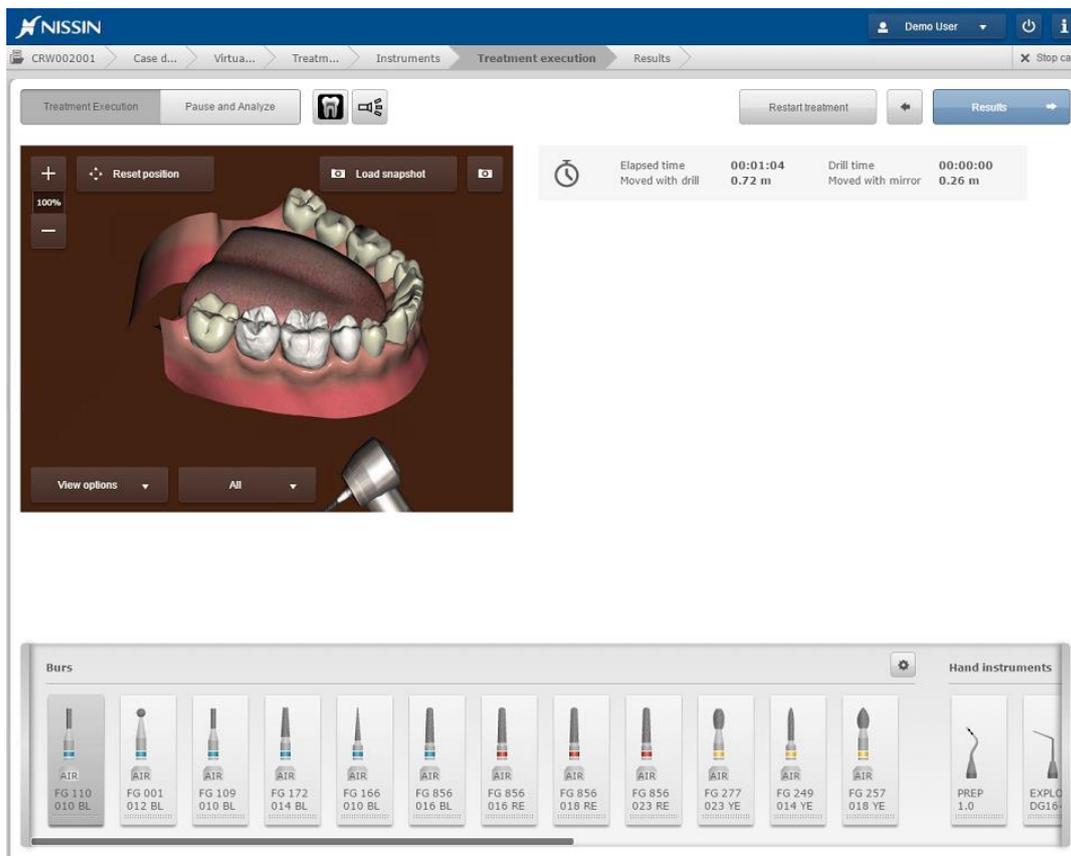
- All (default)
- All but neighbors
- No main
- Main only

Restoration

Creates a restoration, repressing the button will add an extra layer of filling material.

Irrigate

Removes the red color from the pulp chamber.



Treatment execution – Pause and analyze

While you are on the analyze page you are unable to execute any treatment. This page is exclusively for analyzing your work. You have various options to analyze your work; each option is placed on a separate tab. The options are: Statistics overview, evaluation against treatment plan, assessment against ideal preparation and rubric with criteria. Options that are made available are depending on the case.

Statistics overview

Displays statistical information, similar to the real-time statistics that are displayed on the execution page. You will find statistic that relate to time, distance moved and segment information. For example the target and leeway material in a manual dexterity block or the amount of caries tissue remaining in a tooth. Depending on the case; statistics might be used to indicate if you pass/fail your case. For example removing too much leeway material.

Evaluation against treatment plan	Displays your preparation and compares it against your designed preparation in the treatment plan.
Automatic Objective Assessment (against ideal preparation – CLASS I)	Compares the preparation against the ideal prep. The comparison method displays criteria like over & under cut, smoothness and more.
Rubric self-assessment	The rubric displays the set of criteria which are used to evaluate the preparation. Each criteria will have its own scoring and margins. The student will have to score his own preparation. His scoring will be submitted and made visible with the scoring of the teacher.

Results

The result page gives you an overview of the data that will be submitted to the teacher. Depending on the case you need to fill the pre-defined stages with snapshots you have made during the execution phase.

To deliver the work and submit the deliverables to the teacher, tap the submit button. Submitting data may take a while.

Stop Case

You can find the stop case button on the right of the bar. This button will be available during the execution and bring you back to the case overview. You can stop a case at any time, beware that a stopped case will be registered as an attempt, however it will not be visible for the teacher since it is not delivered.

5. Assessed work

The assessed work tab shows all work that has been evaluated and graded by the teacher. In this environment, the student is able to reload the work that has been submitted and read the evaluation given by the teacher.

The work is grouped per course and case. By default, only work from the currently active courses are shown. If you are looking for evaluated work from the past, you can use the search option or filters.





Nissin Dental Products Europe BV

Pesetaweg 51 | 2153PJ Nieuw-Vennep | The Netherlands

Phone: +31 252 462 025

www.simodontdentaltrainer.com

www.nissin-dental.net