

Changelog dental Scan v3.12.0 ▪ release 2024-07-24 ▪ b591504bd1





smart optics is pleased to present a new software update for the dental Scan software.

This update is released for the following devices:



- smart optics mini
- scan Box
- Vinyl
- Vinyl Open Air
- Vinyl High Resolution
- Vinyl UXD

By updating to version 3.12.0 you benefit from all the changes and improvements described below.

Added

-  Support for firmware 7FA000 is added
-  exocad articulator types SAM 2P, PROTAREvo 5B, and Artex CR Adjustable are supported now
-  Translations for activation code validation were added
-  Support for new OEM Touch Dual scanner is added

Changed

-  A new slot-cutting algorithm for multiCase is used now instead of the cylinder-cutting
-  Updated Microsoft Visual C++ 2015-2022 Redistributable 14.32.31326.0 to 14.40.33810.0



Fixed

- ⊕ For SO mini scanners the correct scan strategy in the additional articulator scan is applied now
- ⊕ The order of the scan tabs is fixed again when loading projects with unfinished multiDie workflow
- ⊕ Objects in the 3D viewer are set to top view again when a presentation scan is started
- ⊕ Continue the info.log file in the crashed project directory, when the setting "Use cache folder" is active
- ⊕ Non-visible Twin Tray geometry parts in re-scans are visible again

dental Scan v3.11.3 ▪ release 2024-02-13 ▪ commit e36b21



Fixed

- ⊕ Clarify the message that is shown when an invalid old user configuration file has been found (when updating from v3.11.2 to v3.11.3)
- ⊕ Fix faulty meshing on machines with higher CPU thread counts.

dental Scan v3.11.2 ▪ release 2024-01-24 ▪ commit 6249fb772



Changed

- ⊕ The order of the scan tab controls has changed. The correction scan control will be inserted next to the measurement to be corrected.
- ⊕ In the event of an update, the UserSettings.xml file is replaced by the user.config (.NET). When the software is started, a dialog is displayed informing the user that the user settings will be reset to the default settings. For subsequent updates, the settings are saved user-specifically again.



Fixed

- ⊕ Restore the correct tooth indication colors
- ⊕ Rescans on lower jaws are possible with BalticDenture and TripleTray again
- ⊕ Order of scan tabs is correctly restored when loading a project

dental Scan v3.11.1 ▪ release 2023-08-28 ▪ commit 08097c611



Fixed

- ⊕ Use single shot scan strategy for aesthetic plate scan in articulator with smart optics mini scanners
- ⊕ Fix text for scan tabs yet to be matched
- ⊕ Fix the browse work directory and browse cache directory buttons in the settings dialog
- ⊕ Fix assertion failure when starting the auto-articulation in impression scan mode

dental Scan v3.11.0 ▪ release 2023-08-04 ▪ commit 3f30a4de03



Added

- ⊕ Add support for smart optics mini scanner
- ⊕ Add single shot articulator scan for smart optics mini
- ⊕ Perform spin axis reference move before each scan for smart optics mini
- ⊕ Add new feature activation code "Comfort mode" for smart optics mini



Fixed

- ⊕ Fix camera view directions for registration tabs for TripleTray and TwinTray

dental Scan v3.10.0 ▪ release 2023-07-20 ▪ commit 092801e3

 Added

- ⊕ Add support for OEM-Touch scanner including theming
- ⊕ New special "ImpressionToothless" strategy for toothless "DigitalImpressionFull" scans
- ⊕ Add a new impression scan strategy for the tilted object holder
- ⊕ Add user setting "Always show verification step after each scan" that allows the user to verify the scan result of jaw scans and presentation scans independently inside singleDie, secondDie, multiDie, and multiDie+

 Changed

- ⊕ Allow workflow to continue by touchscreen for Vinyl series in more instances
- ⊕ Show TripleTray registration tab in side view by default
- ⊕ Improve performance of TwinTray cutting operations
- ⊕ Changed the behavior of the "Cancel scan/Repeat scan" button to allow smaller steps backward when canceling or repeating a task. Instead of restarting the entire tab, smaller segments can now be redone

 Fixed

- ⊕ Fix sporadically failing sensor ID readout
- ⊕ Fix 2D scan debug image output if the "debug output (service folder)" setting is enabled
- ⊕ Show the progress bar while matching an impression project

 Removed

- ⊕ Removed user setting "Start matching automatically"

- ⊕ Removed user setting "Always enter rescan mode after tooth presentation" as rescans are now quickly accessible inside the toolbar
- ⊕ Removed user setting "Show presentation independent from jaw scan" as it's now bound to "Always show verification step after each scan"
- ⊕ Removed button "Rescan jaw model" inside multiDie and multiDie+ workflows as a rescan can now be done by closing the tab dialog or if "Always show verification step after each scan" is enabled
- ⊕ Removed buttons "Rescan jaw model", "Check interim results and rescan", and "Repeat 3D scan" from singleDie and secondDie workflows. Rescans can now be done by closing the tab dialog or if "Always show verification step after each scan" is enabled. A repeat can be done by using the "Cancel scan/Repeat scan" button now

dental Scan v3.9.2 ▪ release 2023-05-15 ▪ commit 2dbb9c7de

⊕ Added

- ⊕ Show a message box and delete the user configuration file when the file is invalid

✎ Changed

- ⊕ Slightly improved software startup performance
- ⊕ Text corrections in English and German

🛠 Fixed

- ⊕ Fixed an exception in TwinTray® projects, when the previous project was aborted after the registration
- ⊕ Conditions for displaying the "Finalize Project" dialog in TripleTray® projects corrected

dental Scan v3.9.1 ▪ release 2023-03-31 ▪ commit 92fb8398



Fixed

- ⊕ Fix potential software freeze when manual height selection was used
- ⊕ (UXD only) If manual height selection was started before automatic height determination had finished and the height wasn't modified the final scan height was determined automatically instead of using the height shown in the live view

dental Scan v3.9.0 ▪ release 2023-03-10 ▪ commit 0bd3a200



Added

- ⊕ Additional layers of Situ model scans are now supported in a full impression workflow
- ⊕ Loading the scan data of singleDie and secondDie presentations without the data of the Global scan is configurable now via a new settings entry in the tab "Scanning"
- ⊕ Separate scan strategies for multiDie+ are added now
- ⊕ The sequence of measurement angles inside the Strategy.xml has been changed to drive fewer steps
- ⊕ Added a new viewer toolbar containing rescan, cutting, undo, fill holes, and save buttons



Changed

- ⊕ Updated the product icon and the installation wizard background image and splash screen image
- ⊕ Prevent loading of `unregistered.ply` meshes into exocad 3d preview. The files are now renamed `-model-internal.ply` when closing the project via the "Finalize Project" button and got filtered by exocad

- ⊕ Jaw collisions are only removed now if the penetration of jaws is smaller than 100 μ . This prevents the 3D data from deforming especially when scanning the scan body in the main scan
- ⊕ Changed the mean intensity used by auto exposure of the UXD module to avoid the start button flickering during cabin monitoring

Fixed

- ⊕ Fixed assertion error which sometimes occurred when finalizing a triple tray scan
- ⊕ Clean up files when a Correction Scan is aborted

dental Scan v3.8.1 ▪ release 2023-02-09 ▪ commit 6445f076

Added

- ⊕ Added support for Basler daA-1440-220um camera

Changed

- ⊕ Updated the Basler pylon dependency to v7.2.0
- ⊕ Updated Vimba SDK from version 5.1 to 6.0
- ⊕ Increase thresholds for UXD object detection to prevent repeated flashing of the projected start button in high-lighting conditions

Fixed

- ⊕ Pass on the project's camera binning mode information to measurements when loading a project
- ⊕ Fixed finish state after repeating a scan in a project without a vestibular tab



Removed

- Removed 3D viewer settings “Smoothing” and “Transparency”

dental Scan v3.8.0 ▪ release 2022-12-09 ▪ commit 0787bc47



Added

- Added a new cutting algorithm to multiDie workflow
Colliding objects are automatically separated and smaller objects are no longer discarded when loaded into the global scan
- For scans that no longer create PCM files debug PCM files can be written to the service folder by enabling the “Generate advanced debug output” setting
- Rescan function is added for rescanning the jaw model after the global scan in multiDie and multiDie+ workflow
The rescan mode can be opened via a button in the presentation dialog of multiDie and multiDie+
- Unfinished multiDie projects can be loaded in and continued



Changed

- Renamed setting “Export fringe images (Service folder)” to “Generate advanced debug output (Service folder)”
- The data of a presentation scan in singleDie or secondDie is now loaded into the viewer without the data of the global scan while scanning or when verifying the result
With Continue after the last presentation scan, the scan data of the global scan and the presentation scan are loaded together again into the viewer
- Change buttons to “Yes” and “No” in the abort scan dialog
- Starting over the Correction scan now leads to the tooth presentation dialog

- ⊕ Update intercuspal DLL to v2.3.0
- ⊕ Tooth-based cutting radius will be applied onto rescans that is done right after a secondDie presentation scan
- ⊕ Increased speed at which RGB images are acquired during a color scan for Vinyl UXD scanners
- ⊕ The clipping plane is no longer visible during the “Check interim results” state



Fixed

- ⊕ Fixed modify mesh menu not being available when meshing a vestibular tab was triggered using the “Continue” button
- ⊕ The “New Measurement” dialog of “Add scan” no longer accepts empty names
- ⊕ Hint to insert the complete model for rescanning after the multiDie tab is closed is shown again
- ⊕ Fixed crash if changing tabs or clicking “Continue” while a tab is currently loading data
- ⊕ Fixed auto-registration unreliable when using both cameras
- ⊕ Fixed reduction of scan data from the second camera
- ⊕ The start button is projected again in the impression workflow
- ⊕ Projected position marks are updated again when changing the articulator type
- ⊕ Fix the undefined state during alignment via the matching button
- ⊕ Articulation meshing can’t be canceled
- ⊕ Unknown articulators picked up via dentalProject led to a crash in auto-articulation
- ⊕ Prevent browse folder buttons in the settings dialog from crashing the software
- ⊕ Holes in margin areas, that in some cases occur in multiDie+
- ⊕ Rescan Mode button is available again after the segment scan in the TwinTray workflow

- ⊕ Rescans, after the articulation has been done, should no longer cause artifacts in the mesh after matching

dental Scan v3.7.0 ▪ released 2022-09-23 ▪ commit 5d1d61

⊕ Added

- ⊕ Added support for new exocad reconstruction type option Bite Splint Tooth
- ⊕ Added support for new exocad reconstruction type Overlay Crown
- ⊕ Added an option always to delete the project-related PCM files from the project folder when the project is finished via the Finalize button
- ⊕ New rescan function 360° rescan
- ⊕ Add Microsoft Visual C++ 2015-2022 Redistributable package 14.32.31326.0 to the installer

✎ Changed

- ⊕ Change internal versioning number scheme from format `major.minor.patch` to `major.patch` (minor will be the major number in the new scheme)
- ⊕ Revert pixel classifications to 3.9 error codes and colors in PCM Viewer
- ⊕ Revert the changes of the new confidence calculation
- ⊕ Minor visual GUI adjustments and improvements

🔧 Fixed

- ⊕ Data from the Aesthetic Plate scan are now at the same position again as the data of the Vestibular scan in the CAD software when both scans are performed at the same position
- ⊕ Fix tab state when loading in finished projects

- ⊕ The finish button is available again if MVR is canceled and the Correction scan is repeated
- ⊕ Deselecting “Show Results” in a project with a vestibular scan tab now correctly restores a previously selected additional articulator scan tab instead of loading the meshes of the vestibular tab
- ⊕ The projected start button didn’t re-appear after canceling the “really close software?” dialog when trying to close the software after the 2D scan
- ⊕ Disable dpi awareness for all user interface elements to prevent problems with a display scaling greater than 100%
- ⊕ Fixed a rare condition that prevented the first scan PCM file from being deleted if hitting “repeat previous” during presentation scans (more likely with faster scanners, esp. UXD)
- ⊕ (UXD only) Fixed an issue that caused the scanner to incorrectly assume it was at default height instead of the manually configured height if the manual height selection was started before automatic height determination was finished
- ⊕ (UXD only) Fixed an issue that caused the scanner to use the default height instead of automatic height determination if the insert dialog was continued before automatic height determination was finished
- ⊕ Fixed crash in copy sensor folder if the user selected an invalid folder

dental Scan v3.6.2 • released 2022-07-29 • commit a780759b



Fixed

- ⊕ Fix repeated fringe image acquisition failures with allied vision Alvium cameras when color scan is enabled

dental Scan v3.6.1 • released 2022-06-09 • commit 38718e26



Fixed

- ⊕ The teeth in tooth definition menu shows the correct tooth number when UNS is used

+ Added

- ⊕ Slow motion of the axis system to prevent scan artifacts if Triple Tray workflow or Baltic Denture is used
- ⊕ Add a setting to change the alignment of projected buttons and icons for scanners with the UX module
- ⊕ Add multiDie+ presentation mode for master models after over impression (German crowns, primary telescopic crowns) and Geller models
- ⊕ If two auto-registered multiDie objects overlap, make it visible to the user
- ⊕ Extra dialog in case a software version is used that is newer than the free software update period, which also contains the expiration date
- ⊕ If an articulator from an exocad project is locked in scanner.xml a message will now inform the user
- ⊕ Add “MinimumFreeDriveStorageInMegaBytes” to the SystemSettings.xml to configure the amount of free space that is required. If there is less space, then a warning dialog shows up. The check is done on every project start
- ⊕ Add support for the “Scan Body in Main Scan” menu in exocad, which allows the user to disable the Scan Body scan tab
- ⊕ Projection of smart optics logo if the project definition is opened. It can be replaced with a custom logo inside the settings dialog for scanners with the UX module
- ⊕ Add calibration and test of the interior 3D sensor for scanners with the UX module
- ⊕ Add new feature “Illuminate Tooth Positions” for singleDie and secondDie that can be configured in the settings dialog for scanners with UX module
- ⊕ Add sensor calibration support for dual sensor scanners. The scaling factors for the secondary sensor are saved in the XML structure of the “Correction” section in the scanner.xml. The “Correction” node now has an attribute “Index” which defines for which sensor the values are. Index zero or a missing “Index” attribute means the values are for the primary sensor

whereas an index value of one refers to the secondary sensor for scanners with dual sensor

- ⊕ Add a projected scan button that allows the start of a scan for scanners with the UX module
- ⊕ Perform automatic height centering once an object is detected inside the scanner for scanners with the UX module
- ⊕ Project an icon onto the scanner plate that hints at the requested object to be inserted for scanners with the UX module
- ⊕ Add a dark mode theme that can be selected in the settings dialog. Software restart is required
- ⊕ Add a “camera mode“ drop-down menu to disable the 2nd camera for new dual camera sensors for scanners with dual sensor
- ⊕ Project buttons representing non-scanned tabs on the scanner plate that can be used to select the next scans to be performed, similar to clicking the tab in the software for scanners with UX module
- ⊕ Project a “busy“ looping animation onto the scanner plate during meshing for scanners with the UX module
- ⊕ CLI now supports project folder-based projects when the scanning software is on standby
- ⊕ Add the keyword “--patient-name“ to the command line interface
- ⊕ Project position marks for articulator position for scanners with UX module
- ⊕ Project position mark for impression position for scanners with UX module
- ⊕ Add merging algorithm for scanners with dual sensors to improve performance by only using additional data from the secondary camera
- ⊕ Add a 2D scan for single-die presentation type if “illuminate teeth to be inserted/removed during the presentation“ is enabled, because the exact 2D positions are required for this feature for scanners with UX module



Changed

- ⊕ Refactor third-party license management and add missing licenses for “libusb“, “librealsense2“, “nlohmann/json“, and “SciColorMaps“

- ⊕ 2D scan source images are now saved to the service directory if the “Export fringe images” setting is active
- ⊕ Improvement of fragment identification in multiDie scans that also admits abutment scans
- ⊕ All scans done with a multiDie/multiCase adapter now use the same default height
- ⊕ The naming of PCM files has been changed and now always includes the project ID
- ⊕ A more helpful error message is displayed in case a required special folder (e.g., “Documents”) is inaccessible
- ⊕ Mush bite scan is now displayed inverted
- ⊕ Unify scan and mesh file names for multiCase and additional “Multiple objects” scans
- ⊕ When opening a project, the internal software version is now checked instead of an extra .sop file version. It now also informs about the backup location if the project needs to be converted
- ⊕ Update the external dependency “OpenCV” from v4.0.0 to v4.5.2
- ⊕ Optimize the multiDie workflow when more than 12 stumps and two presentation tabs are needed. Instead of one alignment step for each presentation, automatic alignment of both multiDie tabs is now done in a single step. The scan of the second multiDie tab now also allows free positioning of the stumps
- ⊕ Reduce software start-up time
- ⊕ Optimized the data processing for a faster workflow (e.g., processing of a rescan) of Twin Tray, Baltic Denture, and TripleTray® projects. Unnecessary execution of the matching step directly after the scan is prevented now
- ⊕ Improve initial tooth positions in 2D view to better match a large variety of jaws
- ⊕ For scanners with a touchscreen: only show the touchscreen start button if the insert dialog can be successfully continued instead of showing a tooltip in the GUI when the touchscreen is used
- ⊕ When showing the tooth 2D positions the scan can also be started using the touchscreen

- ⊕ The names of patients, dentists, and technicians are now stored differently in the sop file. The XML nodes are now sub-nodes of the DentalProject node. DentalTechnician has been renamed to Technician and only one patient node is used instead of PatientPrenome and PatientLastname. When loading projects, the old locations of these names are still checked
- ⊕ Changing the presentation mode inside the tab dialog of a main jaw is saved now and will be displayed when a project is loaded
- ⊕ Improve the colors of some scan tab icons, which are also used for projection for scanners with UX module, to improve visual perception
- ⊕ Validation of the reference values for cylinder height and half-sphere distance specified in scanner.xml when starting the software
- ⊕ multiCase-based measurements are now counted as successfully meshed if at least one meshing file has been created for a slot. Previously, all slots had to be successfully meshed for the entire meshing to be counted as successful for the measurement
- ⊕ Rough + fine axis calibration measurements (steps 1+2) measurement is always taken without camera binning
- ⊕ Use new confidence calculation, which uses the triangulation angle between the camera and projector and takes the rotation of the normal vector around the x-axis into account
- ⊕ Change the name of the button "Rescan" to "Rescan mode" in the "Modify mesh" menu



Fixed

- ⊕ Correct user hints and mouse button configuration in MVR for "standard mouse button assignment"
- ⊕ Fix the loading of all multiDie PCMs after "Delete Matching"
- ⊕ Hole filling did not work for holes with too many border points
- ⊕ Dumping all fringe images instead of only copies of the first one
- ⊕ Use center view for preparation meshes during auto articulation
- ⊕ Insert dialog of vestibular will open again if the filename contains a "." and a multiDie scan has been performed

- ⊕ Projects with an additional vestibular mesh will no longer cause an error in the exocad software
- ⊕ Modify mesh menu is available again if Correction Scan matching is aborted
- ⊕ Importing PCM files into the matching module during scanning should work again when the clipping plane is deactivated via the settings dialog
- ⊕ Additional scan tabs no longer create a black .jpg file in the project folder
- ⊕ Slightly improve software start-up performance
- ⊕ Clear old measurement data did not work. Also changed it to look for the folder of the last project and the export work folder
- ⊕ The background matching is now also triggered in additional scan context
- ⊕ Fix network path issues. A network path in the UserSetting.xml no longer causes an exception on software start. Matching should now work for a project running in a network path. The settings dialog now correctly validates the paths specified in the export and cache text fields before applying them to the settings
- ⊕ Invalid company modes no longer result in smart optics as the default company mode
- ⊕ Fix an issue that caused a scan tab not to be displayed as selected when clicked on in TripleTray®, TwinTray, and BalticDenture projects
- ⊕ Fix an issue where the matching for a multiCase measurement was not triggered for each slot when the matching process itself was started and the active tab was not the multiCase measurement tab
- ⊕ Starting a new tab now closes open menus
- ⊕ Fixed random scan failures for 2.8mpx PGR cameras, esp. during color scans.
- ⊕ Fix misregistration issues with special characters in multiDie and hybrid scan workflow.



Removed

- ⊕ Remove the “Stump cutting radius“ setting from the dialog

- ⊞ Remove unnecessary axis movement when leaving the rescan mode or closing the software during non-singleDie presentation scans
- ⊞ No longer writing a file named "Prescan_TargetPlane0.bmp" in the work folder during 2D scans
- ⊞ Fix multiDie project calls over CLI

dental Scan v3.5.3 ▪ released 2022-04-20 ▪ commit 3794c102

⊞ Added

- ⊞ Add support for Alvium cameras

dental Scan v3.5.2 ▪ released 2022-04-04 ▪ commit 05d6e089

✎ Changed

- ⊞ Update the certificate of the digital signature as well for the executable of the installer as of the executable of the software.

dental Scan v3.5.1 ▪ released 2022-02-02 ▪ commit df1de64a

🛠 Fixed

- ⊞ Fix problems when a dot or special characters were part of the project name

dental Scan v3.5.0 ▪ released 2021-12-21 ▪ commit d030491f

⊞ Added

- ⊞ Added support and driver for new Basler sensor



Fixed

- ⊕ Restrict software start to supported devices
- ⊕ Fix idle state after rescan which solves freezes of the software in the ongoing workflow

dental Scan v3.4.0 ▪ released 2021-09-16 ▪ commit b928e8d



Added

- ⊕ Add support for firmware version “7ECOA1” which allows starting a scan by pressing a hardware push-button
- ⊕ Update scan strategy of impression scan to support impression scans on the universal plate
- ⊕ Add support for the new reconstruction type “MockupTooth” which was added in exocad 3.0 Galway
- ⊕ Added support for transformation into a virtual articulator system if the “Adesso split” or “Splitex tray” system is used
- ⊕ Added support to choose the articulator in the vestibular insert dialogs when in standalone mode
- ⊕ Added new “Two impressions in occlusion” scan mode (so the Full Impression scan mode can be used with a vestibular scan tab now)
- ⊕ Ability to use up to six points in manual registration, similar to traditional three-point alignment
- ⊕ Rotation of Cutting plane via two new grab points or additional free movement using CTRL + mouse control. CTRL + middle mouse key resets the cutting plane
- ⊕ Reset of 3D viewer zoom level/pan using the middle mouse key
- ⊕ Added setting “Create additional vestibular mesh” to generate an optional mesh file of the vestibular scan
- ⊕ Replace SO_ScanProcessingV5/V6.dll with V7. This will speed up the point cloud processing (matching/meshing)
- ⊕ Added additional occlusion scan functionality

- ⊕ Added additional articulator scan functionality
- ⊕ New button to trigger a rescan sequence from multiple spin angles.
- ⊕ Allow undoing multiple rescans
- ⊕ Allow undoing multiple cut operations
- ⊕ Add additional “Multi-object” scan
- ⊕ Added an extra set of subtraction parameters exclusively for mush bite
- ⊕ Added the new “Cache Folder” feature (available in the settings dialog) to compensate for performance gaps between different data storage types
- ⊕ Added automatic articulation algorithm
- ⊕ Added support for the “SecondaryTelescope” reconstruction type
- ⊕ Added “Missing Tooth” preparation and “Aesthetic Plate” option
- ⊕ exocad articulators FAG and SAM NEO. FAG is mapped to a generic articulator. SAM NEO is mapped to SAM3. SAM3 is renamed to “SAM3+NEO”



Changed

- ⊕ „ Delete Matching“ behavior. Modifications of a mesh now must be always deleted inside the jaw tab and can no longer be deleted via the vestibular tab
- ⊕ Updated Settings Dialog to use FlatGUI elements
- ⊕ Improved file selection, loading, and responsivity of the “Show results” feature
- ⊕ Delete PCMs of multiDie slots which only contain fragments immediately after scanning
- ⊕ Enable presentation mode for mixed “Provisional Crown” projects
- ⊕ Improve detection of non-empty multiDie slots
- ⊕ Extended scan strategy of “Provisional Crown” and “ProvisionalPontic”
- ⊕ Renamed the “smart-viewer.exe” support tool to “TeamViewerQS.exe” and updated to the new version
- ⊕ Improved “AdditionalScan” strategy

- ⊕ Improved “CorrectionScan” strategy
- ⊕ Scan data for multiDie/multiCase scans are now colored the same as the slots in the previews (non-texture scans only)
- ⊕ Universal projects now start without a pre-created scan tab
- ⊕ Improved performance of cutting tools (esp. multiDie/multiCase scan)
- ⊕ Improved scan data processing performance
- ⊕ Moved the “Combine mesh” button from the “Add scan” menu to the “Modify mesh” menu
- ⊕ Improved look of settings dialog, hole filling dialog, activation code dialog, clear old measurements dialog, and about dialog
- ⊕ All dialogs are top-aligned now
- ⊕ Improved look of additional scan dialog
- ⊕ Changed subtraction values to reduce holes during mush bite meshing
- ⊕ New project dialog and insert dialog now use consistent order for presentation modes
- ⊕ When holding the right and left mouse buttons to translate the view (default mouse behavior active) releasing the left mouse button now still leaves the view rotation active, allowing to switch between translation/rotation by pressing/releasing the left mouse while holding the right mouse the whole time
- ⊕ Movement of clipping plane disabled for rescans in already-meshed tabs
- ⊕ Allow all technically possible combinations of indications and scan modes from exocad: TripleTray®, BalticDenture (Full Denture), and Full Impression for all reconstruction types without additional scan layers (Wax Up, Situ, Gingiva, Scan body, Aesthetic plate)
- ⊕ Improved overall translations
- ⊕ Baltic Denture is now only possible in standalone if “Missing Tooth” is specified exclusively in both jaws to indicate a full denture
- ⊕ Single-jaw aesthetic plate scans are also shown when using the “Show Results” button
- ⊕ Do not allow Full Impression scan mode if both jaws are empty because it's not clear which jaw has to be scanned otherwise and to unify the behavior with other scan mode conditions

- ⊕ The cutting plane will no longer be displayed after a repeat of presentation in secondDie and singleDie
- ⊕ Model illumination is now only active within Live View.
- ⊕ The middle mouse button now resets the rotation of an object.



Fixed

- ⊕ Fixed an issue that could lead to the lasso cutting tool not cutting the highlighted area if click + drag was used to define the border and the mouse wasn't moved between ending click + drag and triggering the cut
- ⊕ The default camera binning mode is set to "High resolution" if the corresponding entry in the UserSetting.xml is not available. This fixes the crash if an old installation of the scanning software was updated to the current version
- ⊕ 3D viewer zoom level no longer resets when doing a rescan in Twin Tray projects
- ⊕ Fixed PCM file names for single-jaw full impression scans
- ⊕ Fixed crash when using the correction scan in universal mode or during an additional scan
- ⊕ The wrong layout or minimizing of the software caused by the incorrect appliance of Windows display scaling settings
- ⊕ The multiDie / multiCase color in the settings dialog now actually affects the display color of the slots again instead of defaulting to a green color scheme
- ⊕ Wrong info messages are shown during multiDie/multiCase presentation
- ⊕ Fixed a potential issue where the camera image height wouldn't be set correctly
- ⊕ Use the correct color when pressing a button in a sub-menu
- ⊕ TripleTray® and Twin Tray scans use the selected HR scan quality instead of always using the default mode HR mode
- ⊕ „PartialFramework“ teeth are no longer marked for presentation
- ⊕ Prevented loading a project with scan mode "TripleTray®" and the indication "PartialFramework"

- ⊕ Subtraction values inside SystemSettings.xml had no impact
- ⊕ “Save project as” now actually creates a .zip archive output
- ⊕ “Close project” and “Save project as” buttons are now only enabled when appropriate
- ⊕ The main-jaw clipping plane is now correctly applied to additional layers when starting the matching process from the main jaw tab and when the main jaw is already matched before entering the scan object tab for the first time
- ⊕ Fixed a potential deadlock (abort button still active but without effect) during scanning
- ⊕ The “Show Results” button is no longer shown in a project containing any other scan layers than the Situ
- ⊕ For exocad dentalProject files with Digital Impression scan mode and indications with prosthetics, pure substructures, or provisional crowns/provisional pontics the presentation mode for the according jaw was blocked. This leads to single jaw full impression scan workflow, wrong scan strategies, or an invalid project dialog
- ⊕ When coming from exocad with a pre-defined Digital Impression scan mode certain indications (pure partial frameworks, bite splints, provisional crowns/pontics, prosthetics) could confirm the project dialog without having defined at least one jaw presentation mode
- ⊕ Fixed an endless loop if the indication “Full denture” with “bite rim scan” was created for a single jaw using exocad dentalDB
- ⊕ Fix progress bar flickering for articulated projects
- ⊕ Aborting a scan tab and closing the software while a different scan tab is currently matching in a Twin Tray, TripleTray®, and Impression projects should no longer lead to the executable still running
- ⊕ Fixed a project corruption and/or crash when using the “Continue” button on an already-scanned tab, aborting the insert dialog of the auto-selected tab and switching to a third yet-unscanned tab
- ⊕ Fixed that Baltic Denture and Triple Tray workflows were allowed even if only one jaw is defined
- ⊕ In a project with a vestibular tab using the “Show Results” button when an aesthetic plate tab is open and leaving “Show Results” mode the aesthetic

plate tab displayed data is no longer replaced with that of the vestibular tab (the saved files were always correct, this was a visual bug only)

- ⊕ .STL files are not being deleted when starting over a finished project



Removed

- ⊕ Remove the “Delete old scan data” dialog on the software close

dental Scan v3.3.0 ▪ released 2020-09-04 ▪ commit 7b3360



Added

- ⊕ Added support of reconstruction type “OffsetSubstructure” for exocad
- ⊕ Added support of new scan option “On substructure” for exocad
- ⊕ Added support for single jaw full denture projects for exocad
- ⊕ Added support for abutment type “AnyImplantAbutment” for exocad
- ⊕ Added Hotkey for entering rescan mode (r) and triggering a rescan (t)
- ⊕ Added Hotkey for cutting tools: Inside (i), outside (o), surface (u)
- ⊕ Added Hotkey for save (ctrl + s) and undo (ctrl + z) of cutting tools and rescans
- ⊕ Added Hotkey for viewer buttons: left (4), right (6), top (8), bottom (2), front (7), and back (9)
- ⊕ Added missing text in impression insert dialog
- ⊕ Added missing tooltip text for the “Surface cutting” button
- ⊕ Improved cutting tools: Free-form cutting using a lasso and highlighting the currently to-be-cut area



Changed

- ⊕ Reporting error message now when sensor.xml is missing or corrupt

- ⊕ Enable live view for Baltic Denture scans.
- ⊕ The space bar does not confirm dialogs anymore.
- ⊕ Inform the user that the date of the last calibration cannot be determined instead of just showing any date in the calibration dialog.
- ⊕ Lighting in Rescan Mode now more closely matches lighting in normal mode.
- ⊕ The camera is now powered down when closing the software.
- ⊕ User hint that scan data is not finished when closing the software via x is now only shown when appropriate
- ⊕ Presentation scan insert dialogs now wait for their associated global scans to finish processing before being shown
- ⊕ Session logs will now be placed directly beneath %LocalAppData%/3D-Scanner/Sessions/
- ⊕ The texture mode selected in the project-dialog and insert-dialog no longer overrides the user-setting default.
- ⊕ HD mode selected in the project-dialog and insert-dialog no longer overrides the user-setting default.
- ⊕ Changed vocabulary in calibration insert dialog in the German language
- ⊕ Restructured installation folder
- ⊕ Deactivate capturing in visual z control after 15 seconds. Any user action in the view will reactivate the capturing
- ⊕ Additional scans are now no longer allowed to be started while a correction scan is executed
- ⊕ Removed upper z-limit for twin tray vestibular bounding volumes to support non-Twin Tray quarter Models.
- ⊕ Show cutting plane after movement marker scan
- ⊕ No longer supporting mesh-based subtraction for aesthetic plate scans



Fixed

- ⊕ Fixed typo registration tab in the German language

- ⊕ Prevent a black bar from appearing when clicking on the universal project mode image in the project dialog.
- ⊕ Fix the crash caused by invalid elevator move commands when clicking rapidly in the live view.
- ⊕ Surface cutting on non-meshed objects no longer cuts through more than the surface.
- ⊕ Fixed the TwinTray project being broken by repeating scans.
- ⊕ Fixed the Combine Mesh function only keeping the largest mesh.
- ⊕ Fixed View, render mode, and rotation buttons in the MVR state in a Twin Tray project.
- ⊕ Presentation mode selection in the main jaw tabs does not override the project default selection anymore.
- ⊕ Output Files not created by dental scan should no longer be deleted when restarting a project
- ⊕ When loading in orthodontic projects we now set the project type to the corresponding buttons
- ⊕ Clicking abort when in rescan mode during a singleDie and secondDie presentation now correctly restarts the entire jaw tab.
- ⊕ Disabled cutting plane background clipping when viewing meshes.
- ⊕ Rescan Mode is only entered after all scan data has been processed when the “Always enter rescan mode” setting is active.
- ⊕ Enable the “Combine Mesh” button only when more than one mesh exists.
- ⊕ Increased contrast of 2D scans
- ⊕ Fixed crash when opening a project while a different one is already open.
- ⊕ Fixed LED turned off in visual z-axis control due to missing hardware timer reset
- ⊕ Fixed an unnecessary repeat of the multiDie scan when the user cancels the cancel dialog.
- ⊕ Prevent the user from starting a scan while the elevator is still moving due to a Manual Z-Axis selection.
- ⊕ When starting projects from exocad, teeth with virtual Waxups will no longer be scanned unnecessarily.

- ⊕ Opening and closing the settings dialog will no longer unlock previously locked scan and presentation mode selections.
- ⊕ The selected texture mode of “NewScanWorkflow” projects is remembered between different tabs.
- ⊕ Fixed crash if starting a NewScanWorkflow (Twin Tray, TripleTray®, Impression, and Baltic Denture) project with additional scan layers
- ⊕ The texture mode of Triple Tray UJ/LJ can no longer be chosen differently (would result in a mixed color/no-color mesh)
- ⊕ The point clouds added by rescans will now be colored normally after leaving the rescan mode or switching the tab in Impression, TripleTray®, and Twin Tray projects.
- ⊕ The meshing of scan layers that use the mode “FitIntoReference” or “Subtract” no longer includes the reference mesh in their meshing process
- ⊕ Fixed flickering and old ghost images when using the live view
- ⊕ Fixed loading of projects created with v3.0.7
- ⊕ Fixed potential connection issues if a COM device is connected to the computer (e.g., the Intel Active Management Technology COM device)
- ⊕ Clicking “Cancel” in the hole-filling dialog when inside a TripleTray®, Twin Tray, Baltic Denture, or Impression project no longer shows an “Unknown 3D-Viewer exception” message box
- ⊕ Reconstruction type “BiteSplint” with exocad scan mode “Digital Impression” project creates an impression scan (instead of skipping the jaw).
- ⊕ Fixed intermittent crashes due to file lock on 2d scan image when restarting a scan
- ⊕ Fixed crash when using service position and immediately canceling the insertion dialog with an active live view
- ⊕ Fixed elongated triangles in the 3D viewer
- ⊕ Fixed a severe bug that prevented scans inside Triple Tray, Twin Tray, Baltic Denture, or Impression projects from being properly registered into each other.
- ⊕ Fixed Mnemonic letter usage in labels
- ⊕ Fixed broken PCM Viewer

- ⊕ Fixed Registration issue on CPUs with more than 32 threads
- ⊕ Fixed mouse wheel behavior when using the alternative mouse mode. The new behavior is, that you zoom in when you scroll up.
- ⊕ Fixed position error of aesthetic plate mesh

dental Scan v3.2.4 ▪ released 2019-11-11 ▪ commit 574a99



Fixed

- ⊕ The virtual articulation trafo is now correctly applied regardless of the activation code order
- ⊕ (scanBox only) white/black images during the 2D scan will be prevented
- ⊕ 885: Fix incorrect placements of PCMs during rescan mode if the front cover has been opened



- ⦿ ! IMPORTANT NOTICE !
- ⦿ This is the final version that supports Activity 885 and 885 Mark2 scanners and the Windows 7 and Windows 8.1 operating systems.

dental Scan v3.2.3 ▪ released 2019-09-19 ▪ commit 5bf372



Fixed

- ⊕ Fixed LED turned off in visual z-axis control due to missing hardware timer reset

dental Scan v3.2.2 ▪ released 2019-09-13 ▪ commit cf774f

Added

- ⊕ Support of Firmware 7E3102, 7E9502, 7E9522 (In case of connection loss, the LED will be switched off)

Fixed

- ⊕ Deactivate capturing in visual z control after 15 seconds. Any user action in the view will reactivate the capturing
- ⊕ Fix crash when using service position and immediately cancel the insertion dialog with an active live view
- ⊕ SO_Proc.exe crashed due to the wrong version of libiomp5md.dll. Changed the version with the correct one.

Removed

- ⊕ Don't copy SystemSettings.xml

dental Scan v3.2.1 ▪ released 2019-08-28 ▪ commit b9c015

Fixed

- ⊕ Fixed an issue where Triple Tray impressions with a higher mass were not processed correctly sometimes



Added

- ⊕ Added “Visual Z-Axis Control” to choose scan height using the camera live view
- ⊕ Added “Impression Mode” for full arch impressions
- ⊕ Added support for the “Baltic Denture” scan workflow
- ⊕ Added “Twin Tray Fast Mode” which allows the user to scan the vestibular view and the single Twin Tray segments using only two steps
- ⊕ Added new “IndepenDent Mode” which allows a flexible workflow
- ⊕ Added a new simplified “Orthodontics Mode”
- ⊕ Added support for “Articulator ArtexCN” which can be used with exocad Scan mode “Two Stone Models in Articulator A”
- ⊕ Added support for “Articulator SAM3” which can be used with exocad Scan mode “Two Stone Models in Articulator S”
- ⊕ Articulation can now be restarted via the delete matching button in the vestibular tab without the need for a new scan
- ⊕ New setting to disable automatic cutting of “multiDie / multiCase” tabs
- ⊕ New setting to additionally output meshes with custom axes transformations
- ⊕ A new setting to change the color of the rescan shadow
- ⊕ New Setting for filtering and improving pencil marks
- ⊕ Added support of “Strategy_custom.xml” for defining custom scan strategies
- ⊕ Added a suggestion of possible scan modes for the user when the dental Scan is started via exocad
- ⊕ Added function to convert older projects to newer sop-file standard when they are loaded
- ⊕ Added Function to Inform user if a project was created with an older software version

- ⊕ Demo devices will be recognized by the software and display a “Demo-Unit” overlay inside the 3D viewer
- ⊕ Added support for “Single Denture” projects for upcoming exocad versions



Changed

- ⊕ Scan Mode is no longer preselected if more than one scan mode is possible when the dental Scan is started via exocad
- ⊕ „Reference Move” will now be performed on a software start-up
- ⊕ PCM filename for “Impression / Twin Tray” now contains jaw information
- ⊕ Updated PGR camera driver to 2.13.3.31
- ⊕ Updated layout of the project dialog
- ⊕ Calibration is now only forced after software installation. Calibration notification will be thrown after 30 (instead of 14) days and will no longer be forced
- ⊕ „Twin Tray / Impression” scan modes can now only be selected if the indication allows it
- ⊕ Deactivated user-triggered matching for fully automated scan modes like “Twin Tray / Impression” scan modes
- ⊕ Additional scans in universal projects now also preselect the spacer plate like the first scan
- ⊕ Scan workflow of “Impression / Twin Tray” projects is now also continued and confirmed by changing a scan tab
- ⊕ Repeating the “Triple Tray” registration is now disabled. Registration will be reset if the lower or upper jaw will be re-done or edited
- ⊕ Storing of viewer files will now be performed in a dedicated subfolder called “temp” for “Impression / Twin Tray” projects
- ⊕ The relation of “Articulator SAM1/2” has changed to exocad scan mode “Two stone models in Articulator S (legacy)”
- ⊕ Tooth definition color in the project overview panel for antagonist jaws, full arches, and vestibular scans now will be shown
- ⊕ PCM files will now be cleaned up when repeating or finishing/closing “Impression / Twin Tray” projects

- ⊕ Setting “Include patient name in project name” will now also include Universal Mode



Fixed

- ⊕ Fixed start of Universal mode if preparation was defined before
- ⊕ Fixed angled position of wedge axis if Setting “Move to tooth presentation position” was set
- ⊕ Fixed restart of the meshing process for finalized projects, if PLYs have been manually deleted from the project folder
- ⊕ Fix the behavior of Setting “Always enter rescan mode”
- ⊕ Fixed displacement of PCM after articulator scan
- ⊕ Fixed “Service Position” after leaving rescan mode
- ⊕ Fixed incorrect registration after repeating the upper jaw in a finished “Triple Tray” project
- ⊕ Fixed camera timing issues caused by “CPU Idle State” during 3D / 2D-Scans and live view processes



Removed

- ⊕ Removed entries “Complete Jaw” and “Skip presentation” from “Default presentation mode” in the settings dialog
- ⊕ Removed blockage of scan mode “Two models in occlusion” in combination with the indication “Full denture” for future exocad version

dental Scan v3.1.1 ▪ released 2018-10-31 ▪ commit ffcac0



Added

- ⊕ Added OnyxCeph interface

dental Scan v3.1.0 ▪ released 2018-10-31 ▪ commit 02c943



Added

- ⊕ New feature “HR scanning“
- ⊕ New feature “Cutting plane“
- ⊕ New feature “Segmentation Mode“
- ⊕ Updated PGR driver to 2.11.3.425
- ⊕ Added the option to scan mush bite first in
- ⊕ Added the option to use the patient’s name in the project folder
- ⊕ Added the option to manually choose an enhanced scan strategy in the insert dialog of global scans
- ⊕ Added the workflow for scanning movement markers
- ⊕ Added the workflow for scanning Full Denture cases
- ⊕ Added the workflow for scanning additional scans
- ⊕ Added the workflow to combine additional scans in arbitrary scan
- ⊕ Added articulator-specific scan strategies and elevator axis height
- ⊕ Added default project mode setting



Changed

- ⊕ The build day as part of the version information was removed entirely. Meanwhile, it has been replaced by the commit hash.
- ⊕ Improved automatic registration of articulator scans
- ⊕ Improved the Triple-Tray® feature (start over function and abort function)
- ⊕ Improved the “Show All“ button (is now only available for projects with additional scan layers; mesh modifications made during “Show All“ are now saved to files)
- ⊕ Improved data processing speed of multiDie and secondDie
- ⊕ Improved performance in the registration process

- ⊕ Improved performance on multiDie MVR
- ⊕ Improved multiDie rough registration on color scan
- ⊕ Improved user hints
- ⊕ Preparation type colors for the stump, pontic, and implant adjusted
- ⊕ The coloration of partial framework reconstruction types now matches the one used in exocad
- ⊕ A message is shown if the Sensor-ID of scanner EEPROM doesn't match the used calibration directory
- ⊕ Continuing an exocad project with afterward changed project definition is not possible anymore. It will be proofed now if .dentalProject matches with the .sop file
- ⊕ Changed default presentation mode to "secondDie"
- ⊕ Deactivated tab change for multiDie Global scans
- ⊕ Increase cutting radius for multiDie / multiCase slots from 10mm to 11mm
- ⊕ Reaching into the scanner during fringe image projection displays a warning and restarts fringe measurement (scanBox)
- ⊕ The matching button is no longer active when matching was already done
- ⊕ Improved scan strategy for Situ scan and Wax Up scan
- ⊕ Improved "secondDie" scan strategy
- ⊕ Improved "multiDieComplex" scan strategy
- ⊕ Improved and renamed "Bite" strategy to "MushBite"
- ⊕ If only scanning antagonists in one jaw with an empty opposing jaw will perform a complete model jaw scan now



Fixed

- ⊕ Repeating the second multiDie presentation scan when it was canceled before works now
- ⊕ Fixed issue when multiDie data won't be loaded if the project was resumed after aborting of vestibular presentation dialog
- ⊕ Fixed issue where PLYs were not updated on saving

- ⊕ Improved logic of activation of mesh menu tools during correction scan
- ⊕ No longer show invalid presentation modes when creating a multiCase project
- ⊕ Empty project definition mask after software start is no longer displayed
- ⊕ Fixed issue with aborting and repeating articulator scans
- ⊕ The “Triple-Tray® scan data not reloadable“ warning will now be displayed
- ⊕ Fix some project loading and resume issues when using multiDie presentation
- ⊕ Scan mode “Two stone models in articulator Denar“ will now be imported correctly from Exocad
- ⊕ The placement of articulated models relative to virtual articulators improved



Removed

- ⊕ Removed old PGR FlyCapture dlls
- ⊕ Removed horizontal scrollbar from info dialog
- ⊕ Removed support for A300

dental Scan v3.0.5 ▪ released 2017-11-27 ▪ commit 345



Fixed

- ⊕ Improved edge sharpness for smart optics scanners
- ⊕ Improved scanning of darker scan bodies
- ⊕ Triple Tray® registration bugfix for Activity 855
- ⊕ bugfix for Activity 855 multiDie presentation mode
- ⊕ Supports the calibration of former scanBox models
- ⊕ More small bug fixes

dental Scan v3.0.4 ▪ released 2017-08-23 ▪ commit 329



Fixed

- ⊕ Introduced a new time-saving possibility to finalize a project right after the Vestibular/Fixator/Articulator Scan
- ⊕ Corrected problem when Fixator and Articulator scans are both used. Now the Matching process will never start automatically when an articulator is scanned.
- ⊕ More small bug fixes

dental Scan v3.0.3 ▪ released 2017-07-28 ▪ commit 318



Fixed

- ⊕ Improvement of ARTICULATOR scan mode
- ⊕ Correction of finalizing project behavior
- ⊕ Improvements of the MultiViewRegistration
- ⊕ More small bug fixes

dental Scan v3.0.2 ▪ released 2017-07-13 ▪ commit 306




Fixed



- ⊕ Supports the calibration of scanBox
- ⊕ Correction of the 2D scan crash
- ⊕ Improvements of the MultiViewRegistration
- ⊕ More small bug fixes

dental Scan v3.0.1 ▪ released 2017-06-28 ▪ commit 282

 Added

-  Support of Korean language

 Fixed

-  Improvement of the Triple Tray surface
-  More small bug fixes

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