

GuideMia Feature Catalogue

Orthodontic & implant planning software

OrthoPlusImplant

Filter: IPR, sleeve, staging, undercut...

65 features

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GuideMia OrthoPlus

13 groups · 65 features

How this list was built

Compiled from the shipping Qt sources: the left task-panel dock in each `PIEMainWindow.ui` , the 3D-window context menus in `PView3D.cpp` , and — for OrthoPlus — the staging panel and movement table. Every control's object name, tool tip and status tip was read to establish what it actually does.

Controls were dropped where they have no connected slot, where the connected slot has no implementation or an empty body, or where they only drive another widget's visibility. Genuinely generic operations — open and save a project, export an STL, view orientation, background grid — are left out. Passive parameter inputs are folded into the feature they configure rather than listed on their own.

GuideMia OrthoPlus — 65 features across 13 groups. Switch products with the toggle above; the filter searches names, descriptions and Qt object names.

01 Case intake & preparation

5

01 Multi-source scan intake

Task panel

Upper and lower intra-oral or plaster-model scans, an additional open-bite scan for severely maloccluded cases, a facial scan, and intra-oral photographs and X-rays — all into one case. The lower jaw scan is matched automatically from the upper jaw's filename.

```
buttonStoneModelScan · pushButtonAdditionalBiteScan · pushButtonAddFaceScan  
· pushButtonLoadPictures_2
```

02 Bite re-articulation

Task panel

Registers an additional bite scan to the upper jaw, then the lower jaw to that bite, so a case can be planned at a different articulated position. The virtual equivalent of remounting the models on an articulator.

```
pushButtonRegisterBiteToUpperJaw · pushButtonRegisterLowerToBite
```

03 CBCT segmentation and facial surface extraction

Task panel

Threshold-and-VOI segmentation of the jaws and of additional bone structures. A separate tool circles the facial region and turns it into a solid surface — that solid is what a face scan registers against, so tooth movement can later be reviewed with the face in place.

```
sliderBoneThresholdLow · pushButtonCircleFace · buttonManualScatter · buttonManualScatter_2
```

04 Scan-to-CBCT registration

Task panel + 3D menu

A dedicated registration panel aligns optical scans with the CT volume. Any object can also be registered to any other from the 3D context menu, which is how a face scan is brought onto the extracted facial surface.

```
pushButtonShowRegistrationTool · ContextMenuRegisterTo
```

05 Saved plan revisions

Task panel

Any number of treatment plans — tooth positions plus attachments or brackets — can be saved, are listed in the case table, and the working plan can be switched to any of them.

```
pushButtonSwitchPlan · pushButtonSavePlanRevision
```

02 Workflow automation

2

06 AlignerBot — automatic design

Happy Button panel

One button that finishes the whole thing. When the data is ready the button lights up; press it and the software completes all the required planning and design on its own, then hands back a plan you adjust and update like any other. It is gated on AI segmentation having finished — press it early and it says so rather than running on incomplete data.

`pushButtonAlignerbot · actionAlignerBot`

07 Happy Button — guided workflow

Happy Button panel

The same course, driven a step at a time. Each press performs the next step and the panel says what it just did and what comes next, with Skip and Prev to move around it. The stage icons along the panel show where the case is: model fixing, segmentation, post-processing, setup, staging, attachments, design.

`toolButtonFeelingLucky_2 · buttonProcessLuckyButtonPerStep · pushButtonNextStep
· pushButtonLastStep · pushButtonShowWizard`

03 Model repair & construction

5

08 Model Mixer

3D menu + toolbar

Every model-fixing tool in one modeless dialog that stays open while you work on the current object. Reached from the toolbar or from the segmentation view's context menu.

Global fixes — Light Fix, Medium Fix, All-in-One Fix (full quantize-rebuild), Fill Holes, Remove Non-Manifold, Remove Overlaps

Mesh density — Reduce Triangles, Refine, Smooth Boundary

Region brushes — Smart Region Fix, Delete Region, Local Smoothing, Area Touchup, Attachment Removal, Sculpt

Boundary & direction — Boundary Cleanup, Reverse Direction

`actionShowModelMixerBar`

09 Base trimming and closed arch models

Task panel

Track a boundary on the model, cut the base along it (reversing the selection if the wrong side is kept), then generate a closed solid with an adjustable bounding box. Automatic boundary cleanup does the same from the already-extracted crown boundaries, with no hand-tracking.

Full-model inspection — opens the model in its own window; rotate until as much of the surface as possible has been seen, then keep only what was visible. Removes internal artifacts and hidden

channels no surface tool can reach.

`pushButtonTrackBoundary` · `pushButtonCutByTracking` · `pushButtonAlternateCut`
· `pushButtonBoundaryCleanup` · `pushButtonAddBaseModel`

10 Model extension, patching and stitching

Task panel

Extends a model past its open boundary along a drawn contour, patches gaps with generated surface, and stitches a separate tool model onto the current one by merging adjacent boundary points into a single mesh.

`pushButtonExtendBoundary` · `pushButtonPeformPatchFix` · `pushButtonAddStitchingModel`
· `pushButtonStichingModels`

11 Local deformation

Task panel

Double-click anywhere on a crown or tissue model to drop a resizable, rotatable block, then drag its handles to push or pull the triangles inside. Used to extend posterior tissue when the scan stops short of a planned distalization, without disturbing the crown boundaries.

`pushButtonLocalDeform` · `pushButtonLocaldeformUpper` · `pushButtonLocaldeformLower`

12 Virtual teeth and interproximal slot cutting

Task panel

Place a template tooth into a gap and size it with a bounding box, or cut a slot through a flat interproximal contact along a two-to-four point path so segmentation can tell the two teeth apart.

`pushButtonAddOrModifyTooth` · `pushButtonStartSeparation` · `pushButtonSeparateTooth`

04 Diagnosis & analysis

4

13 Cephalometric mapping from a lateral X-ray

Task panel

Draw the Frankfort horizontal, glabella and chin (menton-to-incisor) lines on a loaded lateral X-ray. The measurements are mapped onto the 3D models and used to help determine the ideal upper incisor position.

`pushButtonFHLine` · `pushButtonGallLine` · `pushButtonChinline`

14 Arch and occlusal references

Task panel

Upper and lower molar key lines for the two occlusal planes, a target curve of Spee, the Wala ridge on the lower jaw, and transverse dimension widgets between paired teeth. All of them feed

the automatic tooth setup.

`pushButtonMolarKeyLineUpper` · `pushButtonSpeeCurve` · `pushButtonWalaRidge`
· `pushButtonTransverseDimensions`

15 Visualisation overlays

3D menu + panel

Analysis overlays that turn geometry into colour, most of them toggled per object from the 3D context menu.

Distance map — proximity of the current object to another

Occlusion distance map — upper-to-lower clearance across the arch

Bone density map — density painted onto the bone surface

Buccal-lingual movement map — planned movement direction per tooth

X-ray simulation — a simulated radiograph from the CBCT over a settable slab thickness

Colour and curvature analysis — three colour indices plus a curvature mode for reading scans that carry no colour

`pushButtonXRayMode` · `radioButtonCurvature` · `ContextMenuTurnOnOffDistanceMap`

16 Interproximal gap and collision analysis

Task panel

Live measurement of gaps and collisions between adjacent teeth once segmentation and roots exist, with the value at each contact shown while teeth are being moved.

`pushButtonInterpoximalAnalysis` · `checkBoxCheckIPR` · `pushButtonRecalculateIPR`

05 Tooth segmentation

7

17 AI mesh segmentation

Runs inside the workflow

Segments the teeth out of the optical scans themselves. It runs against the upper and lower models and returns per-tooth crown boundaries, which is what the boundary recogniser then works from — so the arch arrives already separated rather than being traced by hand.

Not a button you press: it fires automatically when the boundary approach is set to curvature or automatic, and on every AlignerBot run.

Its output is a starting point — every boundary stays editable afterwards through crown boundary adjustment.

`AIProcessor` · `PerformAISegmentationIfNeeded`

18 AI CBCT segmentation

Task panel

Segments teeth and roots out of the CBCT volume. The work goes to the GuideMia AI engine and

Segments teeth and roots out of the CBCT volume. The work goes to the dental ML engine and runs in the background, so you keep working and get a notification when it lands; AlignerBot waits for it rather than planning without roots.

`pushButtonAISegmentation` · `AIProcessorCBCT` · `PerformCBCTSegmentation`

19 Arch lines and crown boundary extraction

Task panel

Shows and lets you adjust the arch lines that every boundary recogniser depends on, then extracts the merged crown boundary — the “aligner boundary” — per jaw automatically, or draws it point by point.

`pushButtonShawArchLines` · `buttonTrackAlignerBoundaryManual_2`
· `buttonTrackAlignerBoundaryManualLower`

20 Automatic whole-arch separation

Task panel

Segments every tooth in the current jaw, retrying per tooth and running more than one pass over the arch. Boundaries can be previewed in alternating colours before anything is committed.

`pushButtonSegmentTeethOptical_2` · `buttonTrackAlignerBoundaryManual`
· `checkBoxShowEvenNumberToothBoundaries`

21 Manual segmentation and correction

Task panel + 3D menu

For the teeth the automatic pass cannot handle: draw the mesial-distal axis on a heavily rotated or off-arch tooth, contour and segment a single crown, re-open and adjust the boundary of an already-segmented tooth, correct a wrong tooth number, or repair a broken crown from a template.

`buttonMesialDistalAxis` · `buttonTrackToothBoundary` · `buttonBoundaryAdjustment`
· `buttonBoundaryChangeToothNumber` · `ContextMenuAddToothTemplate`

22 Segmentation post-processing

Task panel

One “Fix all for the jaw” pass, or each step on its own, run after all the teeth are separated.

Smooth boundaries — across every tooth in the jaw

Optimise tooth orientations — identifies each tooth's long, buccal and mesial-distal axes, which the setup and IPR engines both rely on

Fix interproximal areas — patches open contact surfaces so adjacent teeth separate cleanly

`pushButtonFixAll` · `pushButtonSmoothToothBoundary` · `pushButtonOptimizeToothOrientation`
· `buttonFixAllTeethInterproximate`

23 Interproximal gap calibration

Task panel + 3D menu

Removes the gaps and collisions that segmentation inherits from the scan rather than from the

removes the gaps and collisions that segmentation inherits from the scan rather than from the patient. Either across the whole arch in one pass, or contact by contact from the 3D context menu at 0.0 to 0.6 mm in 0.1 mm steps.

`pushButtonInterproximalGapRemover` · `ContextMenuRemoveGap`

06 Roots & soft tissue

3

24 Root reconstruction

Task panel

Three routes to roots, picked by what data the case actually has.

CT root segmentation — per-tooth region of interest with a live threshold, circle the root and trim

Apical centres — double-click the apex on coronal slices, adjust the marker in any window, and grow the roots from crown plus apex; far faster than full CT segmentation

Statistical virtual roots — when there is no CBCT at all; anatomical roots or plain pontics

`pushButtonDelineateTeeth` · `pushButtonDefineApicCenters` · `buttonAddVirtualRoots`
· `pushButtonSmoothModel_2`

25 Virtual gingiva, and the switch to it

Toolbar

A generated gum, built as a ruled surface from the crowns and roots, that can be used in place of the scanned tissue — one toolbar switch flips between them. Scanned gingiva cannot follow large movements or close an extraction site; a generated one can, because it is derived from where the teeth are rather than where they were on scan day.

Roots have to exist first — it sends you back to finish segmentation post-processing and create root models rather than generating from crowns alone.

With extractions planned it stays on for planning and design, and can only be switched off to look at the scan.

Sync Tissue re-couples the tissue to the teeth when the two drift apart during playback, with or without re-segmenting.

`checkBoxUseVirtualTissue` · `TurnOnOffVirtualTissueModel` · `CreateVirtualTissueModelAsRuledSurface`

26 Soft-tissue modification

Task panel

Per-tooth gum reduction or grafting by a set distance, for excessive gum, recession or emerging teeth, plus a push-pull touch-up brush on the crown or the root surface.

`pushButtonTissueRecession` · `pushButtonTissueGrafting` · `pushButtonTouchup_2`

07 Treatment planning

8

27 Arch plane and arch curve control

Task panel

Two curves per jaw — one generated from arch metrics, one a spline through the facial centres — with sliders for width and curvedness, plus a separate arch control curve that teeth can be snapped toward after the plane is positioned.

pushButtonShowArchPlane · sliderUpperCurveWidth · sliderUpperCurveCurvedness
· pushButtonUpdateUpperControlCurve · pushButtonAdjustUpperTeethByArch

28 Automatic setup with live preview

Task panel

One slider previews the setup anywhere from 0 to 100% of the way to the ideal arch. Finalising then runs collision and IPR adjustment and applies the curve of Spee. A separate fine-adjustment pass handles arches that are close but not right.

sliderUpperCorrection · pushButtonAutoArrangement · pushButtonAutoArrangement_3

29 Manual tooth adjustment

Task panel + mover dock

Three ways to move a tooth, all live and interchangeable: the on-screen placement widget, a six-slider object mover that reports the resulting movement amounts, and keyboard shortcuts laid out for either hand. Control or Shift selects several teeth to move as one.

Linked mode — moving one tooth carries its neighbours along by a progressively reduced amount, distinct from moving a multi-selection rigidly

Per-tooth permissions — lock a tooth out of movement entirely, or out of IPR, from the 3D context menu; the planner then works around it

pushButtonEnterManualAdjustment · dockWidgetForMovements · horizontalSliderMD
· horizontalSliderROT

30 IPR and occlusion adjustment

Task panel

Per-contact allowed IPR limits with a global no-IPR flag, and a one-click pass that slides teeth along the arch curve to clear collisions while honouring those limits. A matching pass moves one jaw against the other to reduce over-occlusion while keeping the occlusal plane intact.

pushButtonAClickAndFix2 · doubleSpinBoxAllowedIPRLeft · checkBoxNoIPR
· pushButtonAdjustUpperOcclusion · pushButtonAdjustLowerOcclusions

31 Crown morphing for large movements

Task panel

Morphs the crown and tissue models so a heavily extruded tooth does not read as truncated and a heavily rotated one does not twist the gum. A square handle on the placement widget corrects residual tissue twist by hand

residual tissue twist by hand.

`checkBoxCrownMorphingFoCurrent`

32 Articulation and occlusal change simulation

Task panel

Where CBCT gives an open-jaw position and the optical scan a closed one, the software can display anywhere between them at a set opening angle; without CBCT a virtual joint axis can be defined to do the same. Dental or skeletal occlusal change can be simulated across the plan.

`pushButtonDefineJointAxisWidget` · `checkBoxUseArticulation` · `checkBoxOcclusionChange`
· `radioButtonSkeletalOcclusionChange`

33 Tooth extraction planning

Extraction dock

Mark teeth for extraction on a per-jaw picker, choose between removing the tooth completely and keeping the space for the aligner, execute on the tissue model, and cancel the whole thing per jaw if the plan changes.

`ToothExtractionWidget` · `pushButtonSmoothToothBoundary_2` · `pushButtonCancelExtraction`

34 Incremental planning over a delivered plan

Task panel

Tells the planner that new movements are additions on top of already-manufactured steps, so the part of the course the patient has finished is never re-planned. A restart step sets where the protected region ends.

`pushButtonStartIncrementalStage` · `spinBoxRestartStep` · `pushButtonSetRestartPoint`

08 Staging & the movement table

8

35 The movement table

Staging panel

Rows are teeth, columns are steps, and a blank cell means no movement. Nine display modes read the same plan in different units, and clicking a cell drives the 3D views to that tooth and that step.

Total translation (µm) · intrusion / extrusion · buccal-lingual · mesial-distal

Rotation (deg) · inclination / torque (deg)

Collision with neighbours, computed by replaying the whole plan

Attachment schedule — which teeth carry attachments, and when they change

IPR (stripping) schedule — when each interproximal reduction can actually be performed

`tableWidgetMovementPlanning`

36 Automatic staging

Task panel

Re-runs the entire simulation, adjusts tooth positions mid-course until every collision is gone, adds steps where it has to, and sets each tooth's key frames. The fast path through the whole product is Reset All followed by Automatic Staging.

`pushButtonFinalizeMovementPlan` · `pushButtonAdjustMovementStepsByStaticStages`

37 Key frames

Staging panel

Mark a step as a position a tooth must pass through — shown in red in the table — and align key frames across a multi-tooth selection so several teeth share one staged milestone.

`pushButtonSetKeyframe` · `pushButtonAlignKeyFrame`

38 Staging Plan tool

Staging dock

Sequences movement *types* rather than individual teeth, each one anchored before or after a selected step. This is how a clinician's staging philosophy gets expressed as a plan.

All / no translation · all / no rotation · all / no buccal-lingual rotation

All / no extrusion-intrusion · all / no mesial-distal movement · all / no arch expansion

Protrusion, retraction and distalisation as a dedicated stage, before or after the selected step

Pre-expansion and pre-angulation — an expansion or angulation pass applied ahead of the main sequence, with a slider for the amount

`ToothStagingWidget` · `pushButtonStagingBefore` · `pushButtonStagingAfter`

39 Movement profiles and step limits

Staging panel

Named profiles — regular, substantial and so on — cap how far a tooth may move in a single step. The maximum step length can also be set directly, which regenerates the plan.

`pushButtonMovementProfile` · `doubleSpinBoxMaxStepLength`

40 Step editing

Staging panel

Insert or delete a step, move a single tooth at a single step, adjust the movement amount in one cell, and eliminate collisions at a chosen step — all from inside the table. Twelve nudge buttons fine-tune a selected key frame along each axis.

Phases — freeze the current last step as the end of a phase, keeping all tooth positions, and navigate between phases

`pushButtonInsertStepInTable` · `pushButtonMoveToothInTable` · `pushButtonAdjustMovementsInTable`
· `pushButtonRemoveCollisions` · `pushButtonFineTuningMesial`

41 Attachment scheduling

Staging panel

Start an attachment at a chosen step, end it, or end it in intermittent mode, and reset the whole schedule. An attachment is then only present on the aligners while it is actually doing work.

`pushButtonTurnOnAttachments` · `pushButtonTurnOffAttachment` · `pushButtonTurnOffAttachment_2`
· `pushButtonResetAttachmentSchedule`

42 Playback and comparison

Staging panel

A step slider and single-step buttons, run-all and run-repeatedly with optional soft-tissue morphing, a run limited to selected teeth, and an A→Z / A←Z pair that shows one jaw's end state against the other's start. The views stay fully interactive while a simulation runs.

Overlay on the toolbar shows the initial and final tooth models on top of each other, which is the fastest read on how far a plan actually moves things.

`pushButtonSimulateMovementsOneRound` · `pushButtonSimulateMovements` · `pushButtonRunSelectedTeeth`
· `checkBoxMorphTissue` · `pushButtonShowZWithA`

09 Attachments & auxiliaries

6

43 Automatic attachment placement

Task panel

Decides which teeth need an attachment or a force ridge, which type, and how big, from a full criteria set — then leaves every decision editable. The decision rules themselves can be saved, loaded and reset as a practice profile.

`pushButtonAutoAttachments` · `pushButtonSaveAttDef` · `pushButtonLoadAttDef`

44 Manual attachments

Task panel

Up to two attachments per tooth from the system library or your own STL, sized and placed with a bounding box, with a smoothing pass for library shapes that have sharp corners. Any attachment can be re-opened later by double-clicking it.

`pushButtonStartEndAttachment` · `comboBoxAttachmentType` · `pushButtonSmooth`

45 Force ridges

Task panel

Subtracted from the arch model rather than added to it, so only the part inside the tooth matters. Shape chosen from a list and smoothable.

`pushButtonStartEndPowerRidges` · `comboBoxPowerRidges` · `pushButtonSmoothPowerRidge`

46 Cutouts and button platforms

Task panel

Cutouts shape the aligner trimming path without touching the arch model. Button platforms create a flat cylindrical area so a button for elastics can be bonded and the aligner still fits over it.

`pushButtonStartEndCutout` · `comboBoxCutouts` · `pushButtonStartEndButton`

47 Bite ramps

Task panel

Anterior and posterior bite ramps placed as attachments to open the bite, so lower anterior attachments are not struck by the upper teeth. Multiple ramps are coordinated against the current occlusion.

`pushButtonAddBiteRamp` · `pushButtonAddBiteRampPosterior`

48 Spacers, emerging caps and advancement blocks

Task panel

A virtual tooth attached between two teeth as a spacer; an oversized replacement tooth that occupies the original's place and inherits its movement, leaving room for eruption; and twin blocks and GuideMia wings for mandibular advancement.

`pushButtonStartEndSpacers` · `pushButtonStartEndEmergingCaps` · `pushButtonStartEndTwinBlocks_2`

10 Fixed appliances & bonding

6

49 Bracket library and placement by tooth

Task panel

Brand selection including a GuideMia customisable bracket, placed at the facial centre of each tooth, then snapped to an adjustable average occlusal plane with a per-jaw offset. Initial or final tooth positions can be displayed while working.

`comboBoxBracketBrand` · `pushButtonShowBrackets` · `pushButtonShowArchPlane_2`
· `pushButtonSnapBracketsToPlane`

50 Placement by arch curve

Task panel

Generates and adjusts an arch curve — in practice the arch wire — and positions brackets along it for each jaw, with the arch wire itself displayable over the models.

`pushButtonAddUpperBracketsOnCurve` · `pushButtonAddLowerBracketsOnCurve` · `pushButtonArchWires`

51 Bracket parameterisation and custom bases

Task panel + mover dock

Change torque, width and in-out on the selected bracket and its geometry updates to match —

useful when the bracket system in use is not in the library. Bases can be made to conform to the tooth surface automatically as teeth or brackets move, and distance to the incisal edge, to the mesial and distal limits, and angle to the long axis are all editable as numbers.

`checkBoxParameterized` · `doubleSpinBoxNewTorque` · `checkBoxCustomizBracketBase`
· `spinBoxDistToIncisal` · `spinBoxAngleToAxis`

52 Anchorage implants

Task panel

Place and adjust temporary anchorage devices, browsing an STL for the pin. The software states plainly that defining anchorage without CBCT data is not recommended.

`buttonAddAnchorPins` · `buttonUpdateAnchorpin` · `buttonBrowseAnchorPinSTL`

53 Bonding guide design

Task panel

Six guide styles from one panel, with a proprietary GuideByWire generation path alongside the standard one. Post-processing adds inspection windows, area trimming with reverse selection, and a case tag placed on the model, all resettable.

ADB jigs, with an optional flexible jig angle that shortens bone reduction guides

GuideMia jigs, which need no insertion holes or slots in the guide

Jig-free guides, which require accurate bracket data

Orthodontic-gauge style, with configurable slot parameters

Acid etching guides · anchorage surgical guides

`comboSurgicalGuideSection1Type` · `buttonSurgicalGuideUpdate` · `buttonSurgicalGuideUpdateGuideByWire`
· `buttonSurgicalGuideInspectWin` · `buttonSurgicalGuideCaseNumber`

54 Indirect bonding models

Task panel

Arch models carrying position markers so a technician can bond brackets at exactly the planned position and orientation — generated with or without the brackets already on the model.

`pushButtonCreateBondingModel` · `pushButtonCreateBondingModelWithBrackets`

11 Manufacturing output

5

55 Arch model generation

Task panel

Generates arch models for a step range — per jaw, both jaws, or just the first set — into a folder you name, with step numbers appended automatically. A built-in browser steps back and forth through the generated models or trim paths in place.

`pushButtonGenerateStepModel` · `pushButtonGenerateAllModels` · `pushButtonReviewPathNext`

· `pushButtonSavePath`

56 **Direct-print aligners and retainers**

Task panel

Switches the output from thermoforming arch models to printable aligner or retainer shells, with wall thickness, boundary sharpness and a printer clearance that compensates pixel size or layer thickness.

`checkBoxAlignerFiles` · `doubleSpinBoxAlignerThickness` · `doubleSpinBoxAlignerPrinterClearance`

57 **Trimming paths and jig fixtures**

Task panel