GuideMia Feature Catalogue

Orthodontic & implant planning software

OrthoPlus Implant

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

58 features

GuideMia Implant
11 groups · 58 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 Implant — 58 features across 11 groups. Switch products with the toggle above; the filter searches names, descriptions and Qt object names.

01 Case data intake 6

01 CBCT and optical scan intake

Task panel

A plaster model scan, an intra-oral scan, or a digital model designed elsewhere, brought in alongside the CBCT for partially edentulous cases. Scan quality is addressed at load with a quick global fix, an all-in-one comprehensive fix, and a normal-direction reverse.

`buttonStoneModelScan` · `pushButtonQCFix` · `pushButtonAllInOneFix` · `pushButtonReverseNormal`

02 Radiographic guide workflow

Task panel

Loads a radiographic guide as a CT or optical scan, for the two cases that need one: fully edentulous arches, where the guide carries the gum surface and the intended tooth arrangement, and partially edentulous arches whose metal or ceramic work scatters too badly to register against.

`buttonScanTemplate`

03 Denture and prosthesis design import

Task panel

Brings in an existing digital denture design and registers it against the radiographic guide or the gingiva model. The software can then add abutment holes to it, or turn it into a prosthesis guide the clinician uses to check occlusion and guide position before drilling.

`buttonScanTemplateDenture`

04 Impression scan and model builder

Task panel + Model Mixer

Loads an impression scan and extracts its inner surface into a solid dental model — so a practice with no intra-oral scanner still has a digital model to plan against.

`buttonImpressionScan` · `ModelBuilder`

05 Face and smile-design picture overlay

Task panel

Places a face photo or smile-design image on a 3D plane that can be sized and positioned in front of the patient's bone structure, so implant position can be judged against the intended smile.

`pushButtonAddFacePicture`

06 Post-treatment CT and plan revisions

Task panel

A post-treatment CT can be loaded for comparison against the plan. Separately, any number of plans — the implants and their positions — are saved, listed in the case table, and switchable.

`pushButtonPostOpCT` · `pushButtonSwitchPlan`

02 Segmentation

6

07 Bone segmentation

Task panel

Upper and lower Hounsfield thresholds with live 2D and 3D feedback, a resizable volume of interest per view, and seed points to pick which connected component you actually want. The same three controls segment soft tissue or empty space such as a sinus, just at lower thresholds.

`sliderBoneThresholdLow` · `sliderBoneThresholdHigh` · `buttonResetVOI` · `buttonBoneSeedAdd`

08 Scatter removal

Task panel

Three routes, because metalwork scatters differently in every case: a one-click automatic pass, manual profile circling in the 3D view, and slice-by-slice editing in the 2D views.

`buttonOneClickScatter` · `buttonManualScatter` · `buttonSliceEditing`

09 Tissue peeling

Task panel

Fills the holes across a bone surface to produce a smooth, closed bone model, with a settable hole size of roughly 1–3 mm. This is what makes a printable or bone-level guide possible on a patient with low bone density.

`buttonDoTissuePeeling` · `doubleSpinBoxTissuePeelingRadius`

10 Tooth segmentation and extraction from bone

Task panel

Threshold-driven tooth segmentation with trim and new-segment controls, plus a pass that produces a bone model with the teeth removed — the starting point for extraction and immediate-placement cases.

`sliderToothThreshold` · `pushButtonDelineateTeeth` · `pushButtonNewToothSegment` · `pushButtonRemoveTooth`

11 Radiographic guide and AI segmentation

Task panel

A separate threshold for the guide material — around −500 for plain acrylic — with area delineate and remove tools for the CBCT platform, scatter from over-dense markers, or regions too complex to build a guide from. A one-click AI segmentation path is also available.

`sliderScanTemplateThreshold` · `buttonScanTemplateAutoThreshold` · `pushButtonDelineateRGArea` · `pushButtonRemoveRGArea` · `pushButtonAISegmentation`

12 Circle and segment an area

Task panel

Circles a region on the segmented bone and turns it into its own surface model, which can be exported or combined with further segmentations to build a bone-level surgical guide.

`pushButtonCircleCTArea`

03 Registration

4

13 Marker-based dynamic registration

Task panel

Pick corresponding markers in both 3D windows; from the third pair onward the registration updates live, so you watch the fit improve as you add points. Order does not matter, and three or four well-spread markers usually beat a dozen evenly spaced ones.

- **Markers from the coronal view** — pick an imagined crown boundary on a slice when the real crown is buried in scatter
- **Marker thresholds** — separate low and high thresholds for the radiographic markers themselves
- **Fine-tuning** — nudge controls in each window's toolbar for the last fraction of a millimetre

`buttonEnterLandmarkAdding` · `buttonDeleteAllMarkers` · `buttonScanTemplateAlign`

14 Register-to for any object pair

3D menu

Any loaded object can be registered to any other from the 3D context menu — a face scan to the bone, an additional scan to the current model — rather than only through the dedicated panel.

`ContextMenuRegisterTo`

15 Additional models that inherit the transform

Task panel

An antagonist scan or a separate tooth-setup STL, already aligned to the scan template, is loaded so it picks up the template's transformation automatically instead of being registered a second time.

`buttonAddRefsOtherScanAdd_2`

16 Fit analysis and distance maps

3D menu

A distance map between any two objects, and a dedicated fit analysis overlay — used both to confirm a registration and to check a finished guide's seat before it is printed.

`ContextMenuStartDistanceMap` · `ContextMenuFitAnalysis`

04 Anatomy & references

04 Anatomy & references 3

17 Nerve channel tracking

Task panel

Draws the left and right mandibular channels as tubes of a set diameter along a contour picked across 2D slices, in as many segments as the anatomy needs. The same tool tracks any other structure, and the curve stays editable after it is drawn.

`buttonNerveManualDrawLeft` · `buttonNerveManualDrawRight` · `spinNerveManualDia`

18 Virtual teeth and reference scans

Task panel

Template teeth from a library or your own designs, placed for visualisation and restoratively driven planning and reshapable with the deformation tools. Additional optical scans can be loaded purely as references for implant placement, guide design and occlusion checking.

`buttonAddRefsVtoothAdd` · `buttonAddRefsOtherScanAdd`

19 Virtual tissue model from a scan template

Task panel

Derives the tissue-facing surface from the scan template once the insertion direction is confirmed, with a distance map to verify it. This is what a tissue-borne guide is built against when there is no usable intra-oral scan.

`buttonVirtualStoneModel` · `checkBoxInsertionDirection` · `checkBoxScanTemplateDistanceMap`

05 Implant placement 9

20 System and user implant libraries

Task panel

A system library and a private user library, with diameter, length, apical diameter and full length all overridable per implant if a case needs it.

`buttonImplantBrowse` · `buttonCustomerImplantBrowse` · `spinBoxImplantDia` · `spinBoxImplantRealLength`

21 Click-to-place planning

Task panel + 3D menu

Select a tooth number, then click anywhere in any 2D or 3D window to place the implant there and adjust it in place. Previous/next navigation moves between implants; positioning can be driven from the implant or from its abutment.

`comboBoxToothNumber` · `buttonImplantAddOrUpdate` · `buttonImplantLast` · `buttonImplantNext` · `ContextMenuSetPositioningByAbutment`

22 Safety zone

Task panel

An offset shell around the implant defining the required clearance to bone surfaces and neighbouring structures, displayable and set by value. Anchor pins too close to an implant or to each other turn red.

`checkBoxImplantSafetyZone` · `spinBoxImplantSafetyZone`

23 Parallelism tools

Task panel + 3D menu + objects

Make the current implant parallel to the previous one, make any implant parallel to another from the panoramic view's context menu, or select several in the object manager and make them all parallel to the first.

`buttonPrallelizeImplant` · `buttonMakeSelectedImplantsParallel`

24 Neighbourhood inspection

Task panel

Scroll the mouse wheel to walk through implant-centric cross sections in the working window, so the bone around a planned site can be read slice by slice without leaving the plan.

`buttonImplantNeighorView`

25 Abutments

Task panel

Abutment selection with collar diameter and height, transition and exit height, exit diameter, angle and rotation angle. Rotate the assembly view to the orientation you want and the software calculates the angle needed — then you round it to the nearest stock abutment.

`pushButtonAutoDirection` · `doubleSpinBoxAbutmentAngle` · `doubleSpinBoxAbutmentCD` · `doubleSpinBoxAbutmentEH`

26 Scan abutments

Task panel

Attach a scan abutment to the current implant or the same one to every implant, from a dedicated folder, with a documented coordinate convention for adding your own.

`pushButtonScanAbutmentForImplant` · `pushButtonScanAbutmentForAll` · `checkBoxShowScanAbutments`

27 Implant grouping

Objects panel

Group implants so they move as one rigid set — written for orthodontic expander cases, where screws must hold a fixed spacing and stay parallel while being repositioned.

`pushButtonGroup` · `pushButtonUngroup`

28 Bone density around the implant

Task panel

Reports the average surrounding bone density at the planned site, so a marginal site is visible before the guide is made rather than at surgery.

`checkBoxAverageBoneDensity`

06 Drilling & sleeve control

7

29 Surgical kit selection and configuration

Task panel

The kit is matched to the implant brand when the first implant is placed, falling back to a GuideMia universal kit. An editor modifies an existing kit configuration or creates one for a kit the library does not carry.

`comboSurgicalKitModel_2` · `pushButtonKitConfiguration`

30 Sleeve customisation

Task panel

Overrides the kit's sleeve height, flange height, outer and inner diameter per implant. Set the flange to zero and match the diameters to the drill and the same controls produce a sleeveless guide — which is how a practice without a guided kit still gets a guide.

`checkBoxCustomizeSleeveHeight` · `spinBoxImplantSleeveHeightByUser` · `checkBoxCustomizeSleeveID` · `spinBoxImplantSleeveODByUser`

31 Depth control

Task panel

Four ways to fix where the sleeve sits: prolongation or total drill length, each either from the kit definition or set by hand, with the resulting total drill length always displayed. A sinus-lifting allowance subtracts from the theoretical drill length.

`radioButtonProlongationByKit` · `radioButtonDrillDepthByKit` · `spinBoxImplantProlongationByUser` · `spinBoxImplantDrillLengthByUser` · `doubleSpinBoxSinusLifting`

32 Drill matching mode

Task panel

Whether the guide's holes match the surgical kit's drills, the kit's pilot drills only, the implant size, or a fully customised sleeve — the last of which covers pilot-drill-only guides.

`radioButtonMatchSurgicalKit` · `radioButtonPilotDrillByKit` · `radioButtonFinalDrillOnly` · `radioButtonCustomzeDrills`

33 Fully-guided override on a universal kit

Task panel

Universal kits normally have cylindrical drills, which limits a tapered implant to partially guided placement. This option tells the software to design for drills up to the implant diameter anyway, when the kit in hand can support it.

`checkBoxPreferFullyGuided`

34 Tissue flap option

Task panel

Lowers the guide and sleeve position for a flapped procedure, so a shorter drill still reaches depth — a practical benefit on top of the clinical reasons for flapping.

`checkBoxTissueFlap`

35 Drill guide flange height

Task panel

Sets the thickness of the drill guide flange — the spoon or handle that sits on the sleeve — which has to be accounted for when the guide body is generated.

`checkBoxCustomizeDrillGuideFlangeHeight` · `doubleSpinBoxDrillGuideFlangeHeight`

07 Anchorage & bone work

4

36 Anchor pins and screws

Task panel

Preset pin types plus a customisable definition — pin STL, sleeve STL, diameter, length, full length and sleeve dimensions — saved for reuse. Pins are placed by clicking the site and turn red when they encroach on an implant or another pin.

`buttonAddAnchorPins` · `buttonUpdateAnchorpin` · `comboBoxUserDefinedPins` · `pushButtonSavePins`

37 Bone reduction planning

Task panel

Draw the reduction area, set the cutting depth with a slider against the intended bone level, and preview the tool body before it is committed.

`buttonDefineBoneReductionArea_2` · `sliderBoneReductionDepth_2` · `buttonPreviewBoneReduction_2`

38 Bone and sinus graft design

Task panel

Define the graft area, patch it, deform the patch, set its direction, and build the graft model — with a volume calculation so the amount of graft material needed is known before surgery.

`buttonBoneGraft` · `buttonBoneGraftFinishPatch` · `buttonBoneGraftDeform` · `buttonBoneGraftFinish_4` · `buttonCalculateVolume` · `buttonSinusGraft`

39 Combined guide splitting

Task panel

The same area tool defines the centre region for a combined guide. Keep it small enough that material remains for the base guide; a loaded denture design then becomes a prosthesis guide with connectors to the base, and if the cut area exceeds the denture it can be milled into a provisional.

`buttonDefineGuideSplitingPlane` · `buttonDefineBoneReductionArea_2`

08 Surgical guide design

8

40 Guide type

Task panel

Tissue- or tooth-borne for cases with a radiographic guide or optical scan, bone-borne, or bone-and-tooth. A bone-level guide remains available even when an optical scan exists.

`comboSurgicalGuideSection1Type`

41 Insertion direction and guide body parameters

Task panel

The screen direction becomes the insertion direction, with the undercut areas on the base model updated to match and shown as gaps. Undercut removal angle, guide thickness, contact-surface clearance and an optional glue channel shape the body that is generated.

`pushButtonInsertionDir` · `spinBoxUndercutAngle` · `doubleSpinThickness` · `doubleSpinBoxCompensation` · `checkBoxGuideWithGlueChannel`

42 Guide base definition

Task panel

Two ways to isolate the base: track a boundary point by point across the model surface, or draw a profile on the display plane — clockwise keeps the inside, anticlockwise trims it. Cut, reverse the selection, flip the surface direction, or reset and start again.

`buttonSurgicalGuideTrim` · `buttonSurgicalGuideTrimBySpline` · `buttonTrimGuideBase` · `buttonTrimGuideBaseReverse` · `buttonFlipOpticalScanDirection` · `buttonSurgicalGuideBaseUntrim`

43 Guide generation

Task panel

One button generates or regenerates the guide for every guide type, including bone reduction, plateau and combined guides in a single pass. An alternate safe mode trades speed for robustness when the input models fight the regular path.

`buttonSurgicalGuideUpdate` · `checkBoxSafeMode`

44 Positioning guide

Task panel

A guide with anchor pin holes but no implant holes, for full-mouth extraction cases: it seats on the existing teeth to place the pins, then comes off, the teeth are extracted, and the surgical guide locks onto those pins instead of onto teeth that no longer exist.

`buttonPositioningGuideUpdate`

45 Prosthesis and abutment-hole guides

Task panel

Modifies a radiographic guide or a denture design to carry abutment holes, producing a guide the clinician can seat to verify occlusion and guide position before any drilling starts.

`buttonGenerateProsthesisGuide_2` · `buttonProsthesisPositioningGuide`

46 Split guides and connectors

Task panel

Splits a full-arch guide into halves with their own prosthesis and restoration components, and adds connectors between every component — bone reduction guide to surgical guide to restoration guide — placed by hand in strong material and kept parallel, with undo.

`buttonGenerateHalfProsthesisGuide` · `buttonGenerateHalfGuideRestoration` · `buttonAddConnectionPin_2` · `buttonBRConnections`

47 Guide post-processing

Task panel

Everything applied to a finished guide body, each placed by clicking the model and adjusted with handles, and all of it resettable in one action.

- Inspection windows and irrigation windows
- Access openings, including a DENTIS-style opening with height, and direction slots
- Add material where the guide needs reinforcing · dividers between two sites
- Trim by circled area, or by plane down to the bone reduction level
- Case tag placed and positioned on the model

`buttonSurgicalGuideInspectWin` · `buttonAddAccessOpening` · `buttonAddDirectionSlot` · `buttonSurgicalGuideIrrigationWin` · `buttonSurgicalGuideAddMaterial` · `buttonAddDivider` · `buttonSurgicalGuideTrimByPlane` · `buttonSurgicalGuideCaseNumber`

09 Master models & lab output

4

48 Master anatomy model

Task panel

The bone and soft tissue models carrying the implant holes — the digital counterpart of the

working model a lab builds a restoration on.

`buttonMasterModelGenerate · buttonMasterModelExportStl`

49 Master stone model with analogs

Task panel

A stone-style master model whose holes can be sized for implant analogs, with the analog diameter and height set explicitly.

`buttonMasterStoneModelGenerate · checkBoxUsingAnalogForMasterModel · doubleSpinBoxImplantAnalogDiameter`

50 Guide insert models

Task panel

Two-part inserts: the lower part has the implant's dimensions and sits in the master model, the upper part fits the guide's drilling sleeve. Together with the master models they let a lab produce the prosthesis before surgery.

`buttonInsertModelGenerate · buttonInsertModelExportStl`

51 Master model post-processing

Task panel

Circle-and-trim, cylindrical openings and add-material tools on the master models, matching the ones on the guide, with a single reset.

`buttonSurgicalGuideTrimMaster · buttonSurgicalGuideIrrigationWinMaster · buttonSurgicalGuideAddMaterialMaster`

10 Model repair & object handling

4

52 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 3D context menu.

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

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

Model Builder — builds a closed solid from an open surface with an adjustable direction; this is also the tool that converts an impression scan into a model

`actionShowModelMixerBar`