

BUSINESS DECISION COMPARISON REPORT: 3D CBCT IMAGING SYSTEM

Prepared by Proposal Compare | Outpatient Dental Clinic Vertical

BUSINESS DECISION

BrightPath Outpatient Dental & Implant Center, Conroe, TX, is evaluating two turnkey proposals for a sophisticated 3D Cone Beam Computed Tomography (CBCT) scanner to support high-volume implantology (including All-on-X and zygomatic), complex endodontics, TMJ/airway assessment, and digitally guided surgery. The buyer operates a high-throughput outpatient clinic (not hospital OR) and prioritizes low-dose ALARA compliance under Texas DSHS 25 TAC §289.232, sub-100 micron endodontic resolution, seamless integration with Dentrrix/Eaglesoft and 3Shape/exocad guided workflows, minimal infrastructure burden, and long-term service uptime with Next Business Day or faster response within Houston MSA. No vendor preference was stated. This report provides objective feature-by-feature analysis without ranking or selection recommendation. This is decision support, not engineering, medical, or legal advice.

PROPOSAL COMPARISON

FEATURE: Imaging Performance, FOV, and Voxel Resolution

Proposal A — Dentriscan DENTRI-MAX 3D PRO: Single 200x200mm flat-panel detector, 140µm pitch. FOV options: 5x5cm to 18x16cm (dual-scan stitch). Voxel sizes 75µm (HD endo) to 400µm low-dose. MTF 10% @ 2.1 LP/mm. Scan time 2.1-12.8s, effective beam 8.9s for 10x10cm. GPU reconstruction RTX A4000, 25-45s for 10x10cm.

Proposal B — Volux Vantage Elite: Dual-detector robotic gantry (99µm pitch CBCT flat-panel + TDI pan/ceph CMOS). FOV 4x4cm ultra-endo to 16x18cm native, synthetic 18x18cm. Voxel 68µm UHD-endo to 350µm. MTF 10% @ 2.8 LP/mm in 68µm mode. Scan time 3.6-18.4s, effective beam 3.1-9.2s, with 380° rotation artifact reduction. ReconX AI reconstruction 18-30s for 10x10cm.

SIGNIFICANCE: Proposal B offers smaller minimum voxel (68µm vs 75µm) and higher limiting resolution (2.8 vs 2.1 LP/mm), potentially relevant for MB2 canal detection if endodontic microsurgery volume is high. Proposal A provides a slightly larger max stitched FOV (18x16cm vs 16x18cm native) with simpler single-detector calibration. Proposal B's adaptive collimation and 380° rotation aim to reduce artifacts without additional scan time. Both meet implant planning needs; difference matters primarily for ultra-high-resolution endodontics and motion-prone patients.

FEATURE: Radiation Dose, Safety & Regulatory Compliance

Proposal A: DAP 42-890 mGy·cm², 60-99kV, pulsed exposure, QuickScan 180° half-rotation 45% dose reduction, pediatric 30% cut, AEC based on scout. Texas physicist shielding calculation 8hrs included, lead plan 0.5mm Pb equiv assumption. FDA K213485, QA phantom SEDENTEXT IQ, remote QA audit.

Proposal B: DAP 28-1250 mGy·cm², 60-105kV extended range for metal penetration, DoseGuard with real-time DAP, pediatric bins, ULD protocol 40% dose cut with AI denoise, FOV recommendation by indication, pregnancy interlock. 16hrs ABR physicist included, NCRP 147 plan, 0.8mm Pb assumption, 2.5mm Al. FDA K221904/K233012, eDose cumulative tracker, automated QA metrics.

SIGNIFICANCE: Proposal B lists lower minimum DAP (28 vs 42) in ultra-low-dose small FOV and more hours of physicist time (16 vs 8), which may reduce compliance risk for Texas DSHS registration if room adjacency requires conservative shielding. Proposal A has lower maximum DAP (890 vs 1250) due to smaller kV ceiling. Both offer ALARA tools; Proposal B's indication-based auto-FOV and cumulative dose tracking adds operational safety checks relevant for high-volume outpatient use. Buyer should verify that dose numbers were measured under same IEC conditions.

FEATURE: Software Ecosystem, AI & Digital Workflow Integration

Proposal A — Dentriview Pro 6.2: 2 seats, MPR/curved MPR, 3D rendering, implant simulation 3000+ library, nerve tracing AI, airway volume, TMJ, STL/DICOM fusion. AI: MAR+ deep-learning inpainting, auto-ANB cephalometric, auto tooth segmentation (32 teeth), periapical lesion CADe aid. Open STL/PLY export no fee. Integrates 3Shape Implant Studio, exocad, Blue Sky. Dell Precision i9-13900, 64GB, RTX A4000, dual 27" 4K 350-nit DICOM.

Proposal B — VoluxVision Studio 8.1: 3 floating licenses, ImplantPro 5000+ implants, auto Hounsfield bone density mapping, mandibular canal AI 98.1% claimed accuracy, EndoMap Pro MB2 finder, fracture aid, Airway Sleep MCA, OrthoCeph auto-trace <15s, JointSpace TMJ. AI: TrueMAR-X claimed 92% streak reduction, SmartFocus, LesionCue heatmap CADe, facial scout auto-positioning. Integrated model scan table 20µm accuracy 40s/arch. Open export to exocad, 3Shape, RealGUIDE, DTX. HP Z4 Xeon, 128GB DDR5, RTX A5000 24GB, 32" 6MP 1000-nit + 24" touch.

SIGNIFICANCE: Proposal B includes an additional floating license (3 vs 2), higher-resolution diagnostic monitor (6MP 1000-nit vs 4K 350-nit), larger GPU VRAM (24GB vs 16GB), and built-in model scanning eliminating need for separate lab scanner – meaningful if clinic does denture duplication or digital dentures in-house. Proposal A offers sufficient implant library for general implantology; Proposal B adds bone density mapping and claimed higher canal segmentation accuracy which may affect guided surgery planning confidence. Both have open export without per-case fees, reducing long-term vendor lock-in.

FEATURE: Installation Infrastructure, Site Requirements & Environmental

Proposal A: Footprint 48"x52", weight 680 lbs, floor load 150 lbs/sq ft, no ceiling reinforcement, 208-240V single-phase 30A 16A max, 3kVA UPS included, heat 2.1kW, <55dB, 8x10ft room min, wheelchair accessible chair, lead time 3-4 weeks ARO, rigging air-ride included, trade-in \$1,500 credit for Planmeca ProMax.

Proposal B: Footprint 60"x68", weight 1,050 lbs, floor load 200 lbs/sq ft requiring 6" slab, seismic anchors, 208-240V auto-sensing 3-phase/single-phase 40A 20A continuous, 5kVA UPS + isolation transformer + active filter, heat 3.8kW requiring 12k BTU dedicated cooling, 48dB, open-face standing/sitting, ramp included, capacity 450lbs, 6-8 weeks ARO, climate-controlled truck rigging, site survey \$950 credit.

SIGNIFICANCE: Proposal A imposes lower site burden (lighter, lower floor load, single-phase only, less heat), which may reduce electrical/HVAC upgrade costs in an existing outpatient clinic. Proposal B requires higher floor load and dedicated cooling but includes power conditioning (isolation transformer, active filter) and generator compatibility – relevant if clinic has unstable power or plans backup generator for surgical continuity. Buyer should verify existing slab capacity and HVAC tonnage before comparing total project cost.

FEATURE: Training, Warranty, Service SLA & Uptime

Proposal A: 2-day on-site up to 6 staff + 8hrs remote implant workflows, 6 CEUs Texas. Warranty 2-year comprehensive (tube 30k exposures), 5-year detector prorated. Service 24/7 remote via VPN, NBD on-site Houston metro (50-mile), 2 PM visits in warranty, 14 TX field engineers, loaner detector program, 99.2% uptime SLA, unlimited phone 7AM-7PM CT. Extended 5-year \$38,500 or \$8,900/yr pay-go including tube.

Proposal B: 3-day on-site + 2-day surgical guide bootcamp up to 8 staff, 12hrs online CE AGD PACE, annual competency. Warranty 3-year full bumper-to-bumper (tube 50k exposures), 7-year detector non-prorated, loaner system if >48hrs downtime. Service 24/7/365 remote, 4-hour critical response Houston MSA, NBD non-critical, 3 PM visits/year, 22 TX/LA engineers, Austin parts depot, 99.5% uptime SLA with 1% credit per 0.5% miss, trade-in assurance 70% buyback within 24mo.

SIGNIFICANCE: Proposal B provides longer base warranty (3 vs 2 years), higher tube exposure rating (50k vs 30k), longer detector warranty non-prorated vs prorated, and faster critical response (4hr vs NBD). Proposal A's service coverage is still NBD which may be adequate for non-emergent outpatient scheduling. Both have loaner programs; Proposal B loaner is full system vs detector only, which affects downtime for mechanical failures.

PRICE AND SCOPE ANALYSIS

Proposal A Total Investment: \$152,050 net (after \$1,500 trade-in) turnkey ex-tax. Includes base system \$142,500 (DENTRI-MAX 3D PRO with ceph arm), installation \$6,800, shielding plan \$1,850 (8hrs), training \$2,400, 2 workstations and software seats, 3kVA UPS, 2-yr warranty, DentrCloud PACS 500GB Year 1 \$0. No recurring fee Year 1. Section 179 eligible. Price lock 90 days. Payment 40/40/20.

Proposal B Total Investment: \$185,500 base turnkey without optional lead glass (\$187,700 with glass). Includes base \$168,900, UPS & conditioning \$4,200, installation \$8,900, shielding plan \$3,500 (16hrs), training \$0 included, HP Z4 workstation with RTX A5000 and 32" 6MP display, 3 floating licenses, VoluxCloud Pro 2TB Year 1 \$0 then \$1,800/yr Year 2+. Lead glass window \$2,200 optional. Section 179 eligible. Payment 30/50/20 net 15. Price escalation 3% after 60 days if steel/Cu index >5%.

Price Difference Drivers: Proposal B is \$33,450 higher (+22%) before lead glass, \$35,650 higher (+23.5%) with glass. Identifiable scope differences: (1) Additional floating license and higher-spec workstation/display/GPU (~\$6-8k value). (2) Integrated model scan table eliminating separate lab scanner (Proposal A has no model scan). (3) Enhanced power conditioning 5kVA UPS + isolation transformer vs 3kVA (Proposal B \$4,200 vs Proposal A included). (4) Extended physicist hours (16 vs 8) and NCRP 147 report (\$3,500 vs \$1,850). (5) Longer base warranty 3yr vs 2yr and tube rating 50k vs 30k, with faster SLA. (6) 4-in-1 vs 3-in-1 platform (model scan). (7) Dual-detector robotic gantry vs single flat-panel – manufacturing complexity.

Proposal A offsets with lower installation burden (single-phase, lower weight, lower heat) and trade-in credit. Recurring cost: Proposal B \$1,800/yr cloud after Year 1 vs Proposal A unspecified after Year 1 (assumed ~\$1,200-1,500 per typical market). Both exclude electrical rough-in, HVAC upsizing beyond stated BTU, and structural slab reinforcement. Buyer should normalize for cloud recurring, electrical/HVAC upgrades, and lead glass need.

IMPORTANT UNCERTAINTIES & OMISSIONS

1. Neither proposal includes lead-lined drywall installation labor, electrical rough-in, or structural slab evaluation – costs may vary based on Conroe site conditions and 2024 IBC.
2. Dose and image quality claims (MTF, MAR % reduction, canal segmentation accuracy) reference vendor internal testing; independent physics acceptance data and SEDENTEXCT IQ thresholds not provided – verification during acceptance testing recommended.
3. PACS integration beyond 8hrs (Proposal B) and unspecified hours (Proposal A) may incur additional IT labor if HL7/FHIR to Epic or Dentrrix requires custom interface.
4. Cybersecurity SBOM and vulnerability disclosure details not attached – request for HIPAA Security Risk Assessment.
5. Trade-in value of existing Planmeca assumes functional condition – no inspection report attached; Proposal B offers no trade-in but offers 70% buyback assurance.
6. Texas DSHS RAM license amendment timeline not guaranteed by either vendor – risk of 2-4 week delay if TDSHS requests additional shielding.
7. Proposal B price escalation clause tied to steel/Cu index introduces variable cost after 60 days vs Proposal A 90-day firm lock.

QUESTIONS FOR THE VENDORS

To DentrScan (Proposal A):

1. Can you provide SEDENTEXCT IQ phantom results from a reference site showing 75µm endo mode MTF and DAP measured per IEC 60601-2-63, and confirm Texas DSHS acceptance history in Montgomery County?
2. What is the recurring cost of DentrCloud after Year 1 and data export process if clinic transitions PACS? Is MAR+ processing done on-prem or cloud?
3. Can you extend warranty to 3 years to match Proposal B and include a full system loaner (not just detector) if downtime exceeds 24hrs? What is tube replacement cost outside warranty?

To Volux (Proposal B):

1. Can you provide documented power and HVAC load letter for mechanical engineer review, confirming if existing 6" slab and 3-ton unit suffices, or provide cost cap for upgrades beyond 12k BTU cooling?
2. Clarify VoluxCloud Pro 2TB pricing after Year 1 – is \$1,800/yr fixed, and what are data egress fees? Provide SBOM and FDA 524B documentation for HIPAA risk assessment.
3. Given 60-day validity and steel/Cu escalator, can you offer firm price hold to 90 days and remove index escalator, or cap escalation at 1.5%? Also confirm trade-in evaluation for Planmeca ProMax or equivalent credit?

To Both:

4. Provide three Texas outpatient reference sites with similar FOV usage and contact for clinical workflow review (patient throughput, 90s in/out claim).
5. Confirm HL7 ADT/ORM integration effort with Dentrix Ascend – hours included, interface engine fees, and FHIR compatibility with potential future Epic integration.

BOTTOM LINE

Both proposals offer FDA-cleared CBCT platforms capable of implant planning, endodontics, and airway assessment, with DICOM 3.0 and Texas DSHS support. Proposal A emphasizes lower site burden, lower entry cost (\$152,050), single-phase power, lighter weight, and 90-day price lock, with single flat-panel simplicity and 2-year warranty. Proposal B emphasizes dual-detector robotic architecture with smaller minimum voxel (68µm), higher MTF, integrated model scanning (4-in-1), enhanced power conditioning, longer base warranty (3yr, 50k exposures), faster critical response (4hr), and larger physicist allocation (16hrs) at a \$33,450 premium (\$185,500) before optional lead glass and \$1,800/yr cloud after Year 1. Tradeoffs center on resolution/endodontic workflow and model scan capability vs infrastructure requirements and total cost of ownership. Unresolved items include electrical/HVAC upgrade scope, recurring cloud costs, independent dose/image quality verification, and price escalation risk. No vendor recommendation is made; decision should align with clinic's case mix (endo vs implant), existing infrastructure, and risk tolerance for uptime SLA.

Disclaimer: This report is decision support only and does not constitute medical, engineering, legal, financial, or regulatory advice. Verify all technical, dose, and compliance claims with licensed physicist and qualified advisors.