

# NEWTOM GIANO

## PRECISION.DIAGNOSTICS

2D/3D RADIOLOGY MADE SIMPLE



Cone Beam 3D Imaging  
**NewTom**  
what's next



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Cone Beam 3D Imaging  
**NewTom**  
what's next

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**GiANO** PRECISION.DIAGNOSTICS

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VERSATILE, MODULAR  
DIAGNOSTIC PLATFORM  
ENSURING EXCELLENT  
IMAGE QUALITY,  
ERGONOMICS AND  
SAFETY FOR PATIENTS,  
EASILY UPGRADABLE  
TO CBCT AND/OR CEPH

GiANO is NewTom's versatile and updatable device for all radiology-related needs. It offers a full range of 2D and 3D examination options for dentistry, including specific multiple volumetric examinations. Only top quality imaging with NewTom's technology and experience.

# PRECISION DIAGNOSTICS

Exclusive technologies, dedicated software and imaging excellence for accurate diagnoses

A flexible device integrating innovative technologies and backed by NewTom's experience and specific expertise, GiANO ensures precise diagnostics in every situation. Equipped with a relocatable sensor, a newly conceived teleradiographic system and three easily upgraded 3D configurations, GiANO will meet dentistry's principal diagnostic requirements.

NNT software provides specific instruments and interfaces for different diagnostic applications: data acquired during scanning is processed in just a few simple steps to produce 3D images.

Low-dose protocols, SafeBeam™ technology and servo-assisted alignment ensure low radiation doses to safeguard patient health. A choice of two different emission levels lets users adjust patient exposure by accounting for the actual diagnostic needs, while the new control panel simplifies workflow.



## 2D/3D DIAGNOSTICS

Precise, perfectly defined FOVs ranging from 5 x 5 to 11 x 13 cm. ApT technology and teleradiographic function for high contrast, finely detailed images.



## NEWTOM TECHNOLOGY

Thanks to ongoing R&D, advanced hardware technologies and exclusive reconstruction algorithms are at the heart of this diagnostic tool.



## PATIENT SAFETY

Ensuring patient health with low-dose protocols, SafeBeam™ technology and accurate servo-assisted alignment.



## NNT SOFTWARE

NNT imaging software supports users with specialist interfaces and tools, user-friendly workflow and online assistance.

# HIGH-QUALITY 2D IMAGING

NewTom GiANO caters for different types of 2D examinations

GiANO offers detailed images and dedicated protocols for adults and children, conceived to reduce patient exposure based on the actual needs of the investigation. A single device designed to offer new 2D technology for several diagnostic applications: complete panoramic images both for adults and children with excellent orthogonality, high-resolution images of bitewing and of dentition (either complete or in quadrants), views of temporomandibular joints (TMJ) and of maxillary sinuses. With the CCD sensor that can be easily relocated and the latest generation teleradiographic system, GiANO produces premium quality 2D images in all conditions for cephalometric and carpal examinations.

**ApT (AUTOADAPTIVE PICTURE TREATMENTS)**

Auto-adaptive filters automatically improve every 2D image to ensure the best result for every projection.



PANORAMIC IMAGING WITH CONSTANT MAGNIFICATION



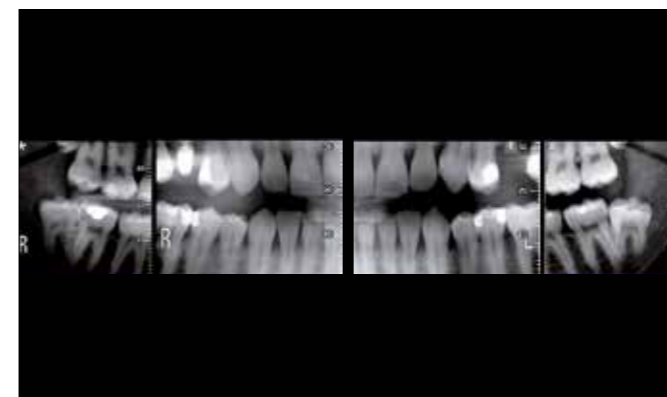
CHILD PANORAMIC WITH LIMITED EXPOSURE



MAXILLARY SINUSES



LL OR PA TMJ WITH OPEN OR CLOSED MOUTH



BITEWING WITH EXCELLENT ORTHOGONALITY



COMPLETE DENTITION WITH EXCELLENT ORTHOGONALITY



FULL-LL, AP TELERADIOGRAPHY



CARPAL TELERADIOGRAPHY

# FLEXIBLE SOLUTIONS FOR PRECISE 2D IMAGING

## Upgrades to CBCT and CEPH made easy thanks to modular concept

A cutting-edge acquisition system, including a highly sensitive CCD sensor, ensures clear and homogeneous panoramic and cephalometric images in an extremely compact device.

GiANO has a rapid sensor locking and unlocking system for extraordinary efficiency in all circumstances.

Through the development of a truly modular system, NewTom GiANO can be easily upgraded to CBCT and/or CEPH with minimal effort, at any time.



### RELOCATABLE 2D SENSOR

Sensor relocation from  
PAN to CEPH  
is fast, safe and highly versatile  
for faster diagnoses.

## IMAGING 2D

### RELOCATABLE 2D SENSOR

NewTom increases the value of this system by adding removable sensor technology. This allows the operator to safely switch the 2D sensor from the main structure and use it on the CEPH arm. A removable 2D sensor is the perfect solution for those practices requiring a high-quality device at a competitive price.



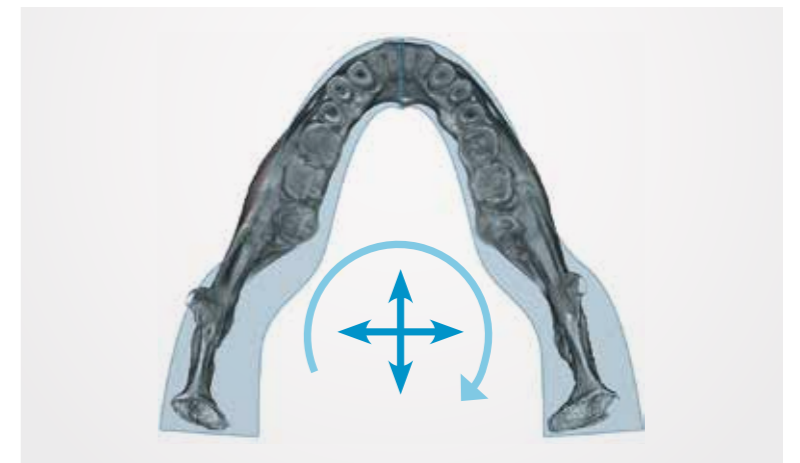
### HI RES PANORAMICS

Dental radiography was developed to visualize the entire upper and lower jaws including teeth, maxillary sinuses and the nasal cavity. This technology can help to study and evaluate bone and gum diseases, jaw fractures, tooth development, impacted teeth, TMJ disorders, sinus problems and other oral diseases.



### ADVANCED KINEMATICS

NewTom GiANO employs a specially synchronized kinematics made up of one rotary movement combined with two simultaneous translatory movements, which ensure constant magnification in all projections, thus leading to highly reliable diagnostic images. The simultaneous translatory movements keep the X-ray detector at a constant distance from the midline of the dental arch, throughout the entire scan.



# BROAD SCOPE FOR 3D DIAGNOSTICS

## Wide selection of FOVs for countless diagnostic needs

GiANO generates volumes providing accurate examinations for every diagnostic need. Wide choice of fields of view and execution modes for dedicated applications for endodontic examinations, with resolution up to 75  $\mu\text{m}$ .



### ONBOARD CONTROLS

An intuitive control panel features guided patient positioning procedures.

### FOV 11 X 13 cm

In the case of soft and hard tissue diseases afflicting the maxillofacial area, scans illustrate the presence of teeth or fractures, bone density/depth, and shape/inclination of the root. The scattering effect is almost non-existent, allowing the anatomical structures to be clearly displayed despite the possible presence of metallic elements.



### Upper & lower arch



### FOV 11 X 8 cm

Cross sectional and panoramic views to facilitate key measurements for implant procedures. 3D images highlight the cortical bone thickness, the cancellous bone density, the inferior alveolar nerve and mental foramen location, and will influence the choice of the appropriate implant and its placement.

### FOV 11 X 5 cm

Endodontic and periodontic specialists require extremely high-quality images to make an accurate diagnosis, and establish an effective treatment plan. Less invasive and better suited, the device reveals its true benefits when carrying out a thorough examination of the area in question, providing maximum detail.

### FOV 8 X 8 cm

After a single scan, Sagittal and Coronal views can be sectioned to show joint space and pathologies. 3D image reconstruction provides detailed information of the TMJ. A wide panoramic view provides a quick screening tool, where differences in condylar and ramus height as well as other dental pathologies can be checked.

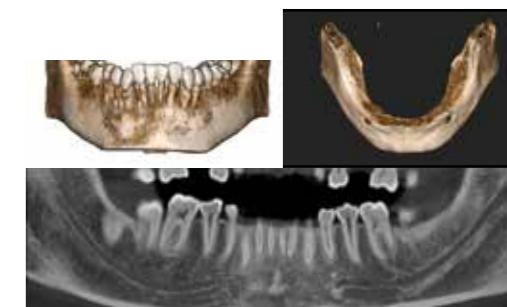
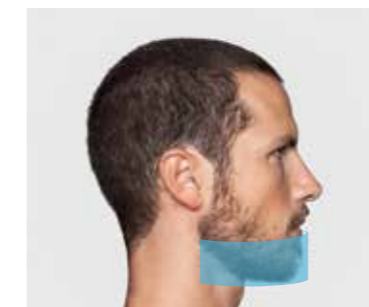
### FOV 8 X 5 cm

Ideal for orthodontic and aesthetic procedures, achieves 3D images clearly illustrating specific details, such as the buccal bone and the roots of the teeth. Determines the existence and the form of an impacted tooth (and its roots), above all in the maxilla.

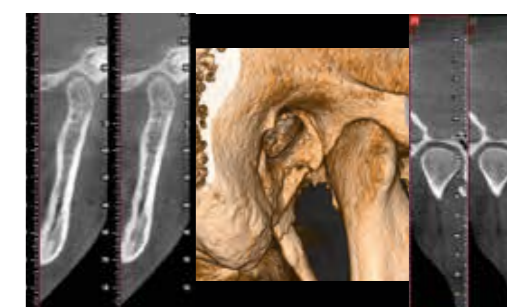
### FOV 5 X 5 cm

High-resolution examination (75  $\mu\text{m}$ ) of a specific region for endodontic examinations with exposure limited to the region of interest. Or for simple follow-up morphological examinations with a low-dose scan and real time view.

### Single arch



### TMJ



### Orthodontic & Child single arch



### Endodontic assessment



# CUTTING-EDGE 3D TECHNOLOGY

Advanced modular platform, open to technological upgrades for every diagnostic need

Available in three configurations, GiANO can be easily updated, making it the ideal choice for several specialist needs. Based on advanced technological research, the highly sensitive sensor is one of a kind improving the image acquisition process, and the high-frequency, pulsed-emission generator with a tiny focal spot yields excellent scans and reduces patient exposure to a minimum, while ensuring rapid workflow.



## 3D SENSOR, GENERATOR AND HMI

Details up to 75  $\mu\text{m}$  with the high sensitivity and resolution of the 3D sensor. Pulsed-emission generator for rapid low dose scans. GiANO is equipped with an onboard, touchscreen HMI with user-friendly controls and a USB port to download 2D panoramic images.

## IMAGING 3D

### SCOUT VIEW IMAGES

The two Scout View images, combined with servo-assisted alignment technology, offer the operator a guided procedure to obtain correct positioning of the patient, while guaranteeing results in every situation.



### EXTRA FOV

GiANO gains in versatility with Extra FOV, the fully automatic acquisition mode providing a vertically extended field of view which gives practitioners immediate access to a wider selection of clinical data in a single sitting. The additional FOV scanned with GiANO 11x8 is 11x13 cm, and with GiANO 11x5 is 11x8 cm.



### 360° SCANNING TECHNOLOGY

360° scans and optimised algorithms always ensure optimal outcome. This image acquisition technique yields high quality images and considerably reduces artifacts, with short scan times.



# MAKING COMFORT AND SAFETY A PRIORITY

## Matching precision diagnostics with responsible treatment

GiANO ensures excellent comfort and safety for the patient in all situations as a result of outstanding ergonomics and very low emission times. Auto-adaptive positioning with three laser guides and a 7-point head support unit make the process easy and always ensure aligned images.

### LOW DOSE

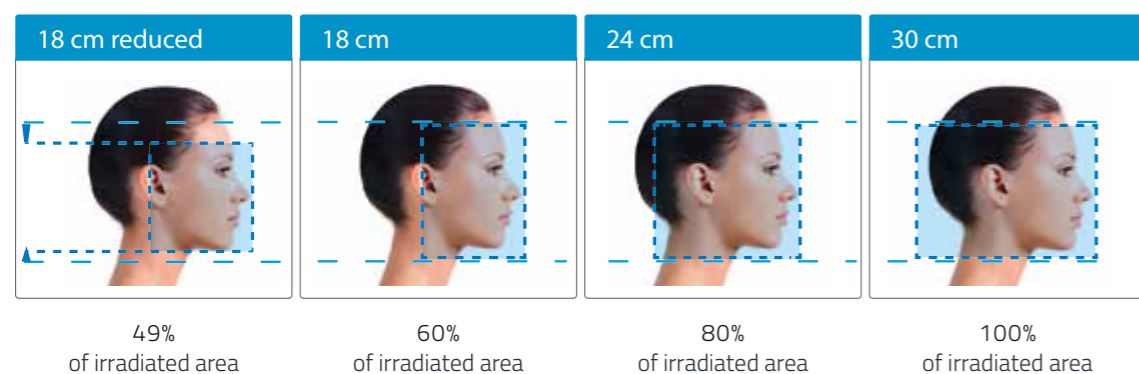
During the examination, the pulsed generator allows minimum patient exposure to radiation.

### ECO PAN

GiANO offers two kind of panoramic exams. Eco mode reduces scan and emission times, while HiRes mode increases image sharpness and contrast, reducing the noise.

### SAFEBEAM™ (patented)

Automatically adapts the radiated dose to the patient's build, reducing the possibility of an unnecessarily high dose.



### SMART COLLIMATION

The primary servo-controlled collimator allows to select the appropriate area for X-ray exposure, minimising the dose.

The secondary collimator is concealed within the rotating module, allowing more space for both operator and patient.

## EASY COMMUNICATION WITH PATIENT

Software sharing options, preview on the control panel and application for iPad are the ideal tools to communicate with the patient and establish relations based on trust.



## INNOVATIVE HEAD SUPPORT UNIT FOR MAXIMUM STABILITY

The exclusive 7-point head support unit and laser guides projected on the face ensure excellent patient stability and precise patient positioning. The motor-driven alignment system and Scout views make it easy to prepare the examination for functional and effective workflow.



## CEPH POSITIONING

The innovative geometry of GiANO's CEPH system expands space available for the patient, while maintaining minimum work space. Available with right to left configuration. With the carpal support, the specialist can perform exams on children's hands and wrists to assess the bone growth in relation to the biological age of the child.





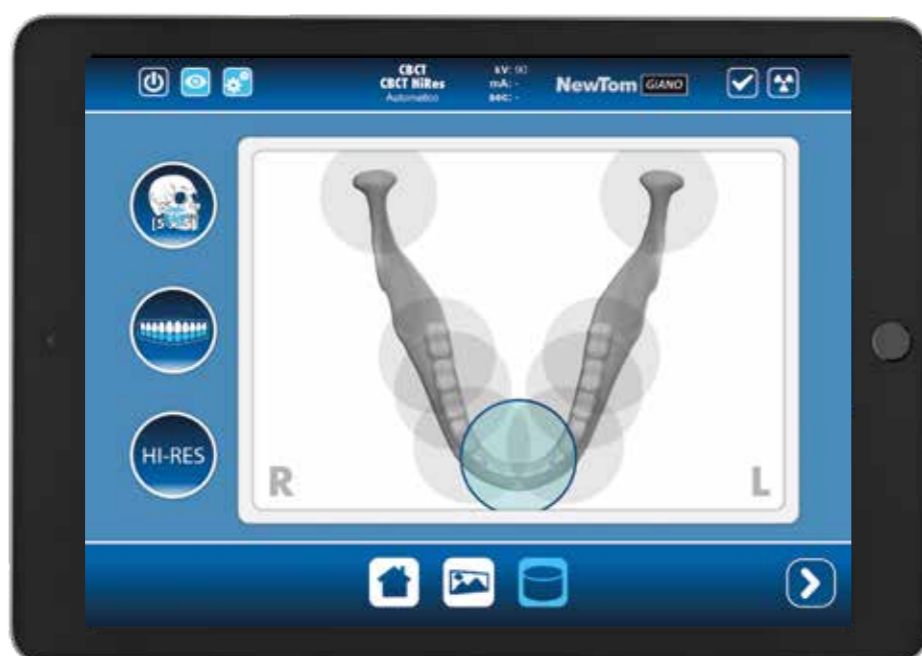
# DETAILED 3D IMAGES FOR TARGETED DIAGNOSTICS

## Acquisition protocols and advanced features to guide physicians



Detailed 3D volumes suited to the majority of diagnostic needs. Innovative image acquisition protocols guide the operator in making the most of GiANO's advanced features. An easy, user-friendly interface to select the most appropriate examination mode, as well as pre-set investigation protocols allow physicians to effectively identify the most suitable image acquisition mode. Furthermore, GiANO implements patented algorithms for 3D reconstruction, thus obtaining optimal volumetric data for diagnostic requirements.

Interacting with GiANO is made convenient thanks to an intuitive virtual control panel for iPad and PC, featuring a wizard guide to positioning procedures and examination selection. This optimises workflow and improves the quality of the images obtained.



### STANDARD MODE

Top quality 3D images obtained with limited scan and X-ray emission times.

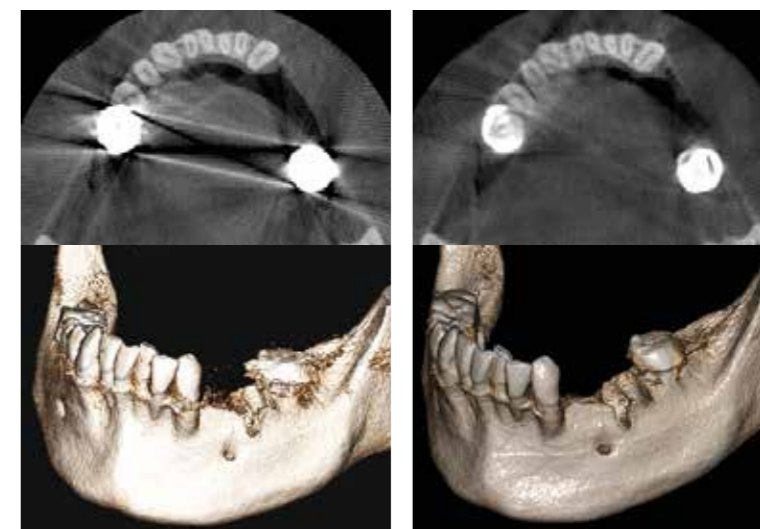
### HIRES MODE

Exceptional high-resolution images with superb detail, excellent sharpness and maximum contrast, with reduced noise.

## aMAR FILTERS

The innovative aMAR (autoadaptive Metal Artifact Reduction) function is a proprietary algorithm developed by NewTom. It considerably reduces the artifacts generated by amalgam, implants or other metal elements that can impair image quality. This facilitates planning and design of specialist treatments that require segmentation of anatomical structures without renouncing the original data acquired.

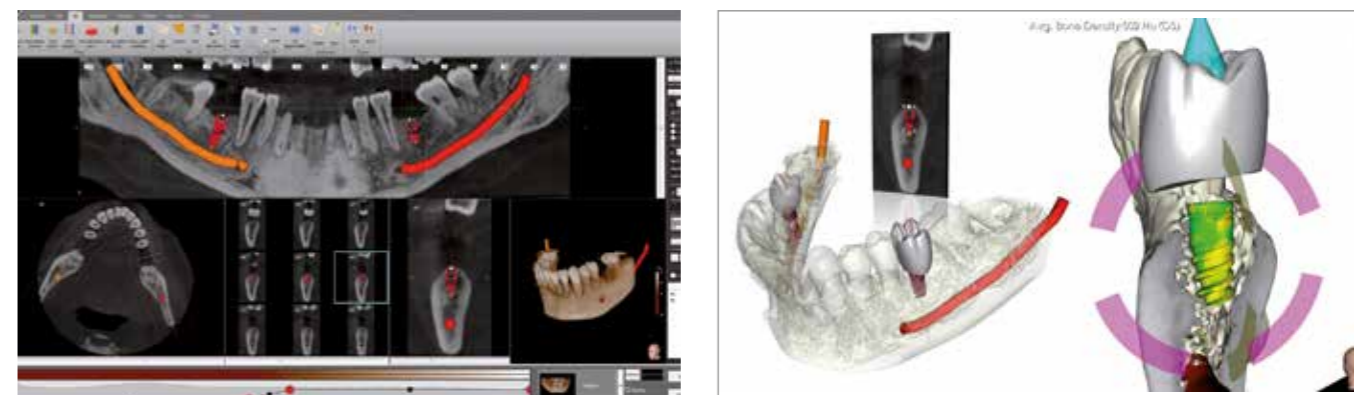
aMAR (autoadaptive Metal Artifact Reduction)



aMAR (autoadaptive Metal Artifact Reduction)

## NEWTOM IMPLANT PLANNING SOFTWARE

NewTom Implant Planning is a software package which enables the simulation of 3D implants on both 2D and 3D models. It also allows for identification of the mandibular canal along with drawing panoramic and cross sections of the bone model, showing the 3D bone model and calculating bone density. Used to plan prosthesis implant surgery in a faster, safer and more efficient way, the software also exports data in .stl format.



# NEWTOM NNT ANALYSIS SOFTWARE

A comprehensive software suite with dedicated tools for 2D and 3D

The perfect solution for dental imaging, NNT allows the creation of different kinds of 2D and 3D images in a 16 bit grey-scale and offers virtually immediate evaluation capability. Designed by NewTom engineers, incorporating application modes specific to different fields of use, it fulfils all customer requirements. NNT identifies and marks root inclination, position of impacted and supernumerary teeth, absorption, hyperplastic growth, tooth structure anomalies and the mandibular canal. The software delivers extremely high quality images which facilitate safer surgical planning. Images are collected and used in report templates defined by users and can be delivered digitally (burnt to a CD/DVD), on paper, film or pdf. Images can be exported in DICOM 3.0 format at any time, in order to allow easy sharing between imaging centres and referring doctors. NNT DICOM Datasets are fully compatible with most third party software programmes.

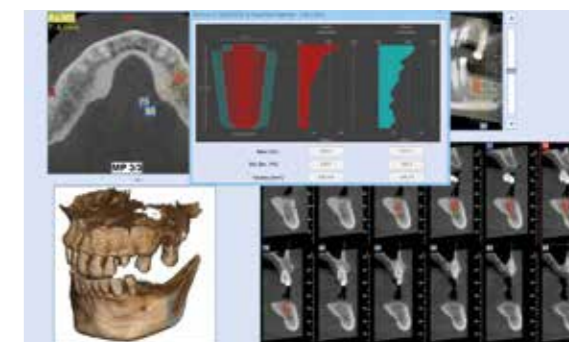


## NNT

All 2D/3D imaging tools in one software that is perfectly integrated into the clinic's workflow.

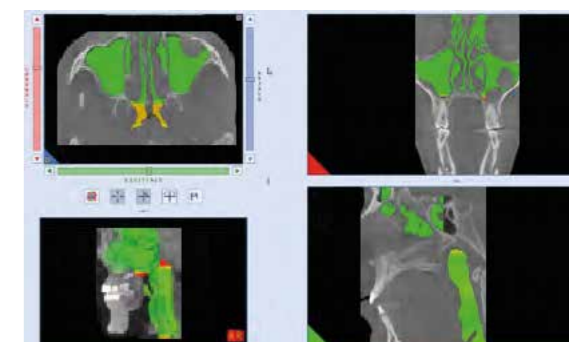
## IMPLANT SITE ASSESSMENT

Bone density estimate in a potential implant site, with Misch scale classification, to correctly plan treatment.



## AIRWAY VOLUME ANALYSIS

Estimating the actual upper airway space is essential to diagnose respiratory diseases and sleep apnea (OSA).



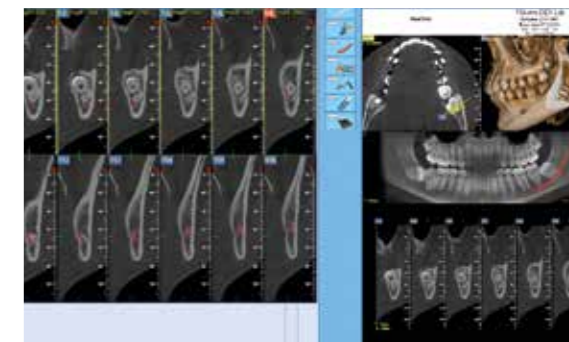
## 2D AND 3D EVALUATION

The possibility to evaluate distances on 2D sections or with 3D rendering to verify any joint problems.



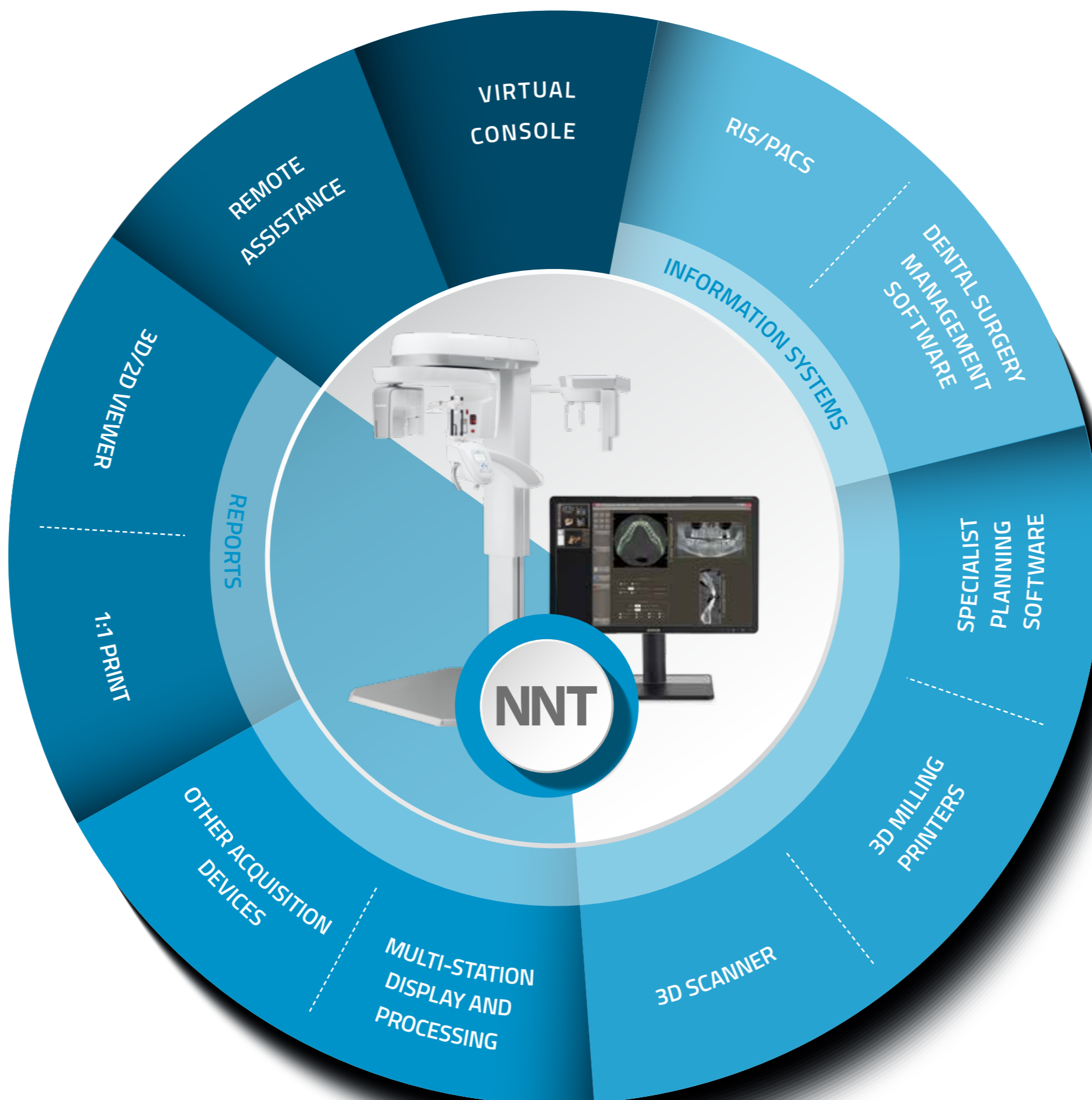
## ADVANCED REPORTS

Advanced writing of medical reports to share on PACS, also available in automatic compiling mode.



# COMPLETE CONNECTIVITY

Connectivity and integration with the modern systems adopted by NewTom for improved workflow in clinical and diagnostic activities



## VIRTUAL CONSOLE

Settings required for acquisition can be easily controlled from a remote virtual control panel on the PC, laptop, Windows tablet or iPad.

## REMOTE ASSISTANCE

By appropriately configuring the device to use the surgery's Internet connection, technical support can be provided remotely, and device status can be monitored.

## 3D/2D VIEWER

Examinations can be shared with colleagues and patients by providing the Viewer directly on CD, DVD or a USB storage device.

## 1:1 PRINT

Complete and flexible report for storing and sharing colour reports on photographic paper or grey scale reports on X-ray-equivalent transparencies.

## OTHER ACQUISITION DEVICES

Compatibility with TWAIN and DICOM 3.0 standards guarantees NNT software management of images from other 2D/3D image acquisition devices, such as video cameras, sensors, PSP and CBCT scanners.

## RIS/PACS

IHE compliant system that allows communication with RIS/PACS systems and DICOM printers. Complete services available: Print, Worklist, Storage Commitment, MPPS and Query/Retrieve.

## DENTAL SURGERY MANAGEMENT SOFTWARE

An open system designed for fast, efficient interfacing with the main dental surgery management software solutions via various standard VDDS, TWAIN and/or proprietary NNTBridge modes.

## SPECIALIST PLANNING SOFTWARE

Exports in DICOM 3.0 format to specialist planning software to process orthodontic treatments, prostheses, implants, orthognathic and maxillofacial surgery.

## 3D MILLING PRINTERS

Software modules are available to segment the reconstructed volume and export to STL format the surfaces required to create 3D models that can underpin planning and treatment.

## 3D SCANNER

Prosthetically guided planning by integrating (via the dedicated software module) data in STL format from optical, intraoral or laboratory scanners, with volumetric data.

## MULTI-STATION DISPLAY AND PROCESSING

Image storage on a shared database in a local network that can be accessed from any workstation and iPad (only 2D). Management of multiple archives and access to password-protected data.

# SPECIFICATIONS

	3D	2D
X-ray source	High Frequency, Stationary Anode: 60-90 kV; 1-10 mA (pulsed mode) 0.5 mm focal spot	High Frequency, Stationary Anode: 60-90 kV; 1-10 mA 0.5 mm focal spot dimension
Detector	Flat Panel Amorphous Silicon	CCD (Charge Coupled Device), Detector Resolution (lp/mm): 10,4 Image Resolution (lp/mm): more than 5 Detector height (mm) for Pan:146 Detector height (mm) for Ceph: 220
Acquisition technique	Single scan and Cone Beam acquisition SafeBeam™ Control reduces radiation based on patient size	Panoramic and Teleradiographic
X-ray emission time	3.6 s to 9.0 s	Adult Panoramic HD: 13s Child Dentition: 7.5s Child Ceph, Lateral: 3.4s
Scan time	Min: 18 s	
Reconstruction time	Minimum render time: 15s	Instantaneous
Signal grey scale	Dynamic range 16-bit	Dynamic range 14-bit
Effective dose	ICRP 103 (μSv): CBCT 11x8, Std Res 33.5 CBCT 11x8, High Res 78.6	ICRP 103 (μSv): Panoramic 6.7 Dentition only 4.3 Ceph Lateral, Reduced 1.0
Multiples CBCT Scan modes	Voxel Size Options (μm): Minimum slice thickness 75 micron	
	FOV Sizes	
	D x H	
	cm	11 x 13    11 x 8    11 x 5    8 x 8    8 x 5    5 x 5
	in	4.33 x 5.12    4.33 x 3.15    4.33 x 1.97    3.15 x 3.15    3.15 x 1.97    1.97 x 1.97
Patient positioning	Standing or seated. Wheelchair accessible	
Weight and dimensions	Height: min 1650 mm (65 in) - max 2410 mm (95 in) Width: 1340 mm (52.8 in), width with Ceph: 1830 mm (72 in) Depth: 1430 mm (56 in), depth with bracket for wall fixing 1520 mm (59.8 in) Total weight: 170 Kg (375 lbs), with teleradiographic arm 190 Kg (419 lbs)	
Software	NNT™ with free viewer and sharing application	
Power required	15A @ 115 V~, 10A @ 240 V~, 50/60 Hz	

Specifications subject to change without prior notice.

## NewTom Today's standard of care

- > Improved Software Integration
- > Accelerated 3D Engine
- > Full DICOM 3.0 Compliant
- > Small Footprint



Dimensions in millimeters (dimensions in inches)

