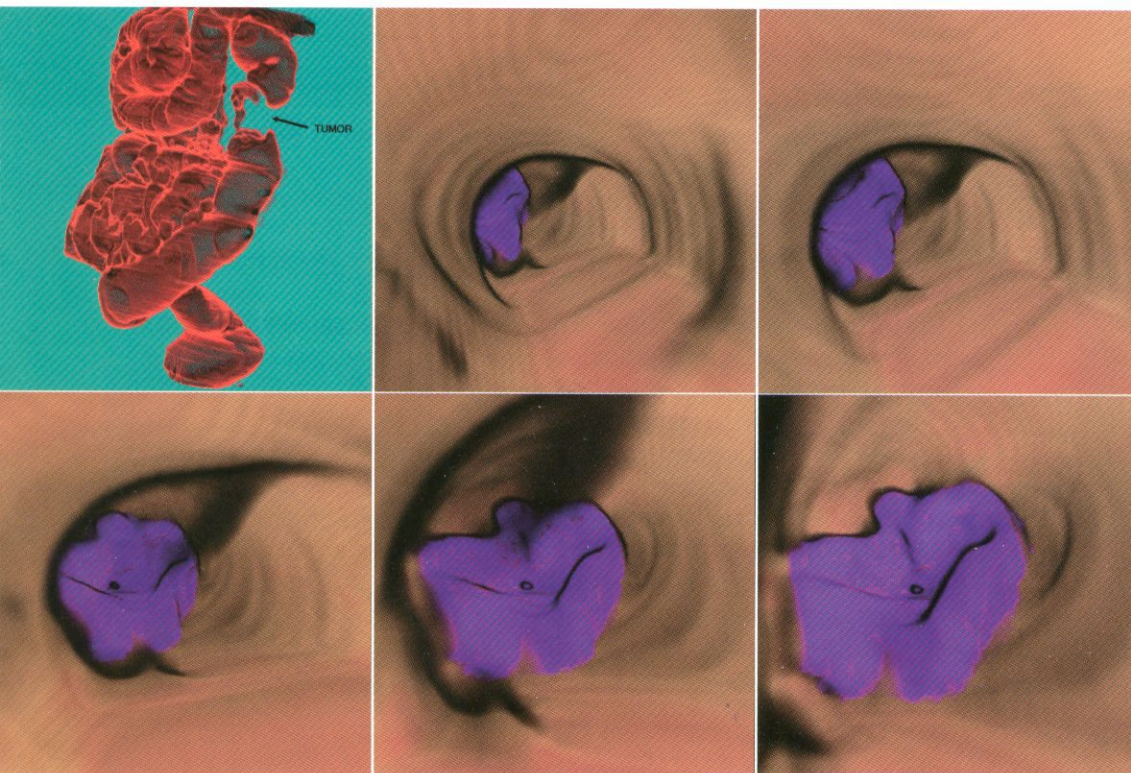




Voyager™

Visualization Tool for the Q-series Scanner

■
A CT endoscopy
visualization
package providing
real-time fly-through
capability.



Description

Picker's Voyager package is a real-time visualization tool that renders spiral CT data to provide fly-through images within and around hollow anatomic organs.

Voyager utilizes 4-D Angio™ volume rendering to simultaneously provide endoluminal examination of organs as well as visualization of extramural structures such as lymph nodes and tumor extent that is beyond organ walls. All of this is completed on Picker's Voxel Q™ visualization system, a multivendor, multimodality, DICOM compatible workstation.

Voyager imaging is a noninvasive, cost-effective tool for screening patients for diseases such as obstructive airway, polyps, extramural lesions and as a treatment planning tool. An intuitive interface guides the user through the anatomy to create movie loop presentations. The resultant movies enhance communication to referring physicians by providing volume rendered CT endoscopic images instead of static two-dimensional views. By using Picker's epi-Client™, Voyager movies can be easily transferred to VHS tape for communicating results to remote locations.

Product Data

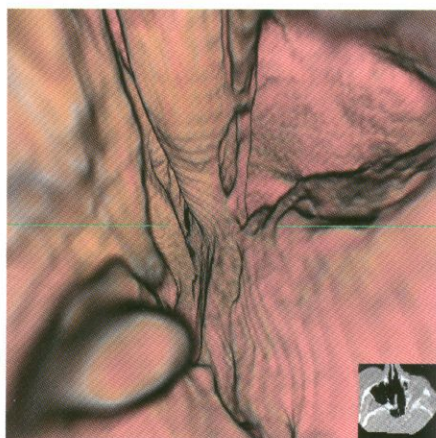
Specifications/Techniques

Maximum X-Y Plane Spiral Spatial Resolution (each frame)	15 Lp/cm
Maximum Length of Single Run Organ Coverage (1.5 Pitch Factor)	105cm
Reformatting Capability (Compositing)	4-D Angio
Reformatting Time	<1 Sec./View
Study Acquisition/Preparation Time (Movie Loop)	10 Min.
Applicable Anatomy and Suggested Techniques:	

Voyager	kV	mA /Rev.	Scan Time /Rev.	Pitch Factor	Collimated Slice Thickness	Image Index
Bronchus / Esophagus	120 kV	150 mA /30 revs	1sec./ rev.	1.0	5mm	1mm
Colon	110 kV	100 mA /45 revs	1sec./ rev.	1.25	5mm	2mm
Aorta	120 kV	150 mA /30 revs	1sec./ rev.	1.25	5mm	2mm

* Does not apply to PQS and PQ 2000S systems.

Features



Paranasal Sinus

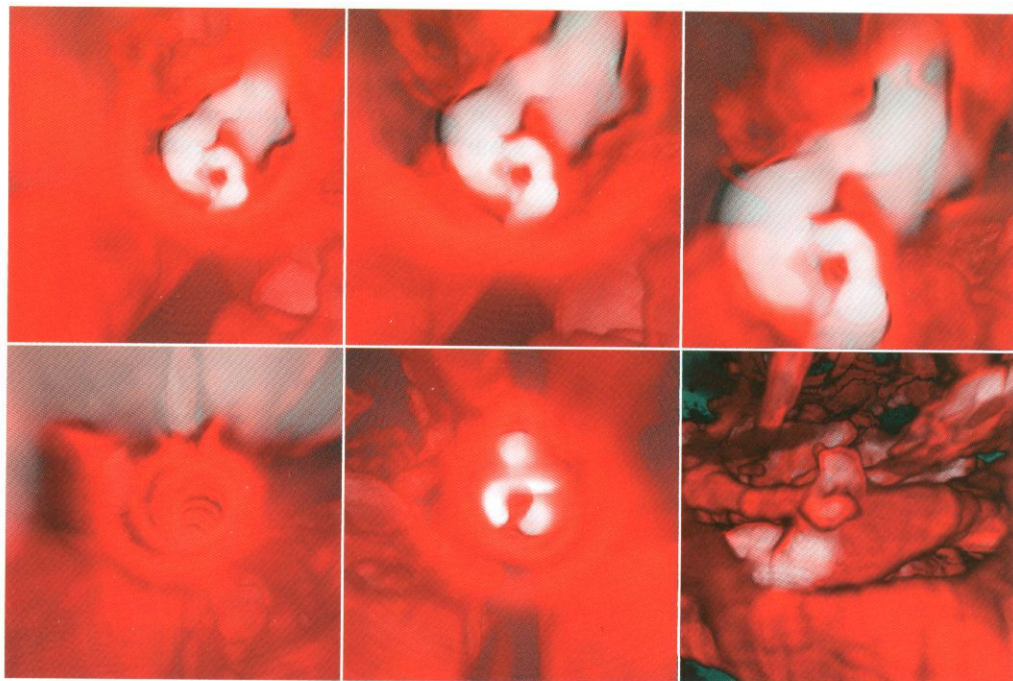
- Voyager 4-D Angio reformations allow visualization of soft tissue as well as the organ surface.
- Color can be automatically assigned to various tissues or structures to enhance presentation and communication.
- Perspective reformatting with cut screen options provide versatility in viewing modes.
- CSD technology provides dose efficiency, superior spatial resolution and continuous detector calibration; necessary ingredients for extended 3-D reformations.
- PQ-series CT scanner's ability to acquire long, single acquisition datasets with an extended pitch, increases speed and coverage capabilities, while maintaining z-axis resolution and increasing CT endoscopy capabilities.
- Voyager can also create images using shaded surface display (SSD).
- AutoNavigation automatically determines the center of the organ being examined and plots an appropriate path down the structure of interest.
- AutoAlert automatically prevents traversal of an organ wall during routine navigation, ensuring a course through the center of the structure.

Background

Voyager visualization technology evolved as a result of the exclusive design of Picker's Q-series high-speed spiral CT scanners and Voxel Q visualization system.

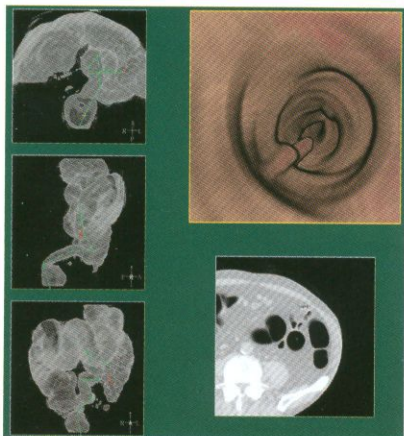
Only Voyager takes advantage of the increased data collection and improved data interpolation which are the results of Picker's Continuous Spiral Detector (CSD™) technology. Voxel Q displays Voyager images using the fastest, most accurate reformatting of CT image data available.

Voyager's unique capabilities are further enhanced by Picker's exclusive method of compositing called 4-D Angio. 4-D Angio gives the user a true three-dimensional image with an added fourth dimension - the variable opacity of any user-defined tissue. 4-D Angio provides fast, minimally non-invasive analysis.



Carotid artery with calcified plaque

Intuitive User Interface

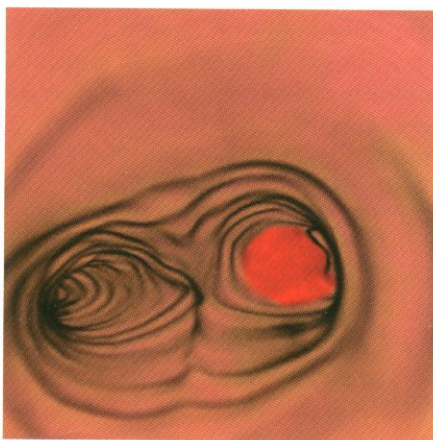


Colon polyp

An intelligently designed interface permits the operator to maneuver through the anatomy using volume rendered views, or by plotting a course from an MPR image. A simple point and click of the mouse guides the operator through the anatomy. The eye-point and location of the plotted path is displayed on volume rendered coronal, sagittal and axial images.

The operator can also maneuver using the parallel display on the MPR reference image. With the parallel display, the course can be advanced directly from the MPR image. Constant “in-flight” adjustments can be made from any of the reference viewports. This flexibility ensures the fastest, most accurate, easiest course is selected.

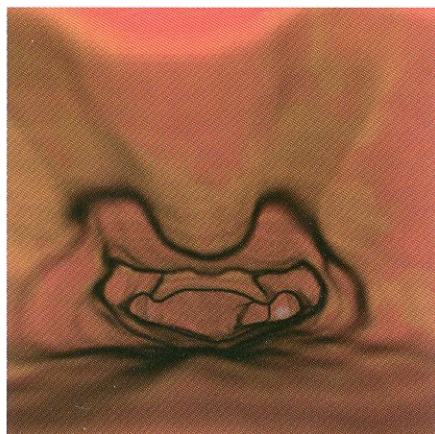
Clinical Benefits



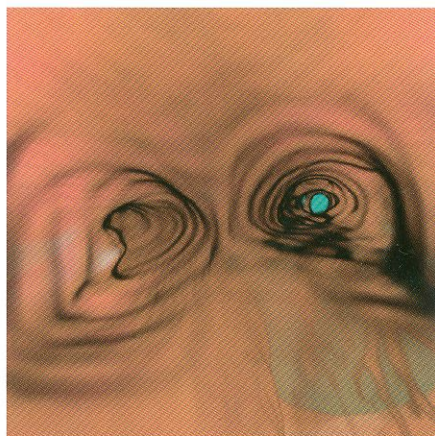
Bronchus with carcinoid tumor

Routine use of Voyager as a screening tool can decrease exam times and complications associated with conventional endoscopic examinations. Because Voyager uses 4-D Angio compositing, you can identify both endoluminal and extramural structures such as tumors, lymph nodes and surrounding normal anatomy. The direct benefit is precise tissue characterization for diagnosis and planning interventions such as transbronchial biopsies and surgery. This results in faster, more accurate invasive procedures, decreasing costs and obviates the need for some unnecessary invasive procedures.

Clinical Applications



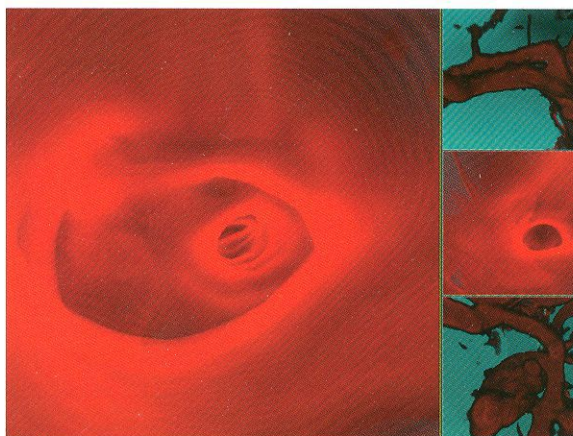
Larynx



Bronchus with stenosis

Voyager imaging can explore any hollow organ providing diagnostic information not previously possible. Voyager CT endoscopy is useful for pre-endoscopy evaluation for lesion screening and planning endoscopic or surgical procedures. Voyager images assist with surgical planning and as a post-endoscopy compliment to examine regions that were inaccessible during traditional endoscopic examination. Voyager permits noninvasive examination of hollow anatomic structures such as:

- Bronchus
- Colon
- Stomach
- Vessels
- Upper respiratory tract/larynx
- Paranasal sinus
- Bladder
- Spinal canal



Middle cerebral artery

Prerequisites

- Voxel Q III visualization system (HP Performance Package, 128 ORM memory board, 5 GByte Disk)
- 4-D Angio
- ZAP™-70, ZAP-100 or ZAP-180 spiral package

Notes: * *Voyager has not been cleared as a screening device nor as a replacement for any endoscopic or angiographic procedure.*

* *4-D Angio has not been determined to be equivalent to conventional angiography and is applicable to many other procedures beyond angiography.*

Picker International, Inc.
 World Headquarters
 595 Miner Road
 Cleveland, Ohio 44143
 U.S.A.
 Tel: 1-216-473-3000
 Fax: 1-216-473-2413

Picker International, Ltd.
 Longacres House
 Norton Green Road
 Stevenage, Hertfordshire
 SG12BA
 England, United Kingdom
 Tel: 44-143-831-1777
 Fax: 44-143-831-1888

Picker International GmbH
 Robert-Bosch-Strasse 11
 65719 Hofheim-Wallau
 Germany
 Tel: 49-6122-9140
 Fax: 49-6122-8536

**Picker International
 Canada, Inc.**
 7956 Torbram Road
 Brampton, Ontario L6T 5A2
 Canada
 Tel: 1-905-791-1494
 Fax: 1-905-791-7297

**Picker International
 Latin America**
 2300 W. Glades Road
 Suite 305-E
 Boca Raton, Florida 33431
 U.S.A.
 Tel: 1-561-393-0550
 Fax: 1-561-394-0085

Picker International, Inc.
 3 Tai Seng Drive
 #06-00 GEC Building
 Singapore 1953
 Republic of Singapore
 Tel: 65-383-4910
 Fax: 65-383-4939

Picker International, Inc.
 Room 1303-4
 C C Wu Building
 302-308 Hennessy Road
 Wanchai, Hong Kong
 Tel: 852-2835-5668
 Fax: 852-2838-4302

