2D Digital Radiography
3D Computed Tomography
Inspection Services Group

4nsi.com  xrayinspectionservice.com
North Star Imaging (NSI) manufactures, sells and services state-of-the-art X-ray Imaging systems and CT equipment for industrial use. Our company also designs and develops the software applications used in our systems. NSI provides system solutions from basic low production or R&D, to high resolution/high production/high energy. Our standard range of products are extremely flexible to meet varied customer requirements.

NSI began in the field of industrial X-ray testing in 1986 in Minnesota. The company built its first Digital Radiography equipment in 1991 and first Computed Tomography system in 2002. From 2006, NSI widened its services and added an Inspection Services Group (ISG) offering need based consulting for anyone needing X-ray and/or computed tomography scanning. Aside from the ISG services, the company also has a Technical Service & Support team that is on call 24/7 to address immediate global customer service needs.

In 2010, the company was acquired by ITW, a global company with 51,000 employees across 56 countries. Then in 2012, NSI doubled the size of its facility in Minnesota and opened North Star Imaging Europe in Paris (France).

The global demand for powerful X-ray and CT equipment that provide precise and automatic material analysis with a non-destructive view of composite structures is what pushes NSI to constantly raise its bar of excellence in product innovation. The company has the widest product portfolio range in the industry today which keeps NSI way ahead of its competition. NSI offers seven (7) standard X-ray and CT/micro CT systems including the newly launched CXMM 50, an X-ray test system designed specifically for 3D Metrology.

The corporate office is located in the city of Rogers, just outside Minneapolis, Minnesota. This facility has about 80 skilled employees including application specialists, mechanical engineers, software engineers, programmers, level III instructors and others. NSI is an ISO 9001:2008 certified company.

In 2015 NSI opened facilities in the West Coast (CA) and the United Kingdom.

In 2016 NSI opened an Asia office in Suzhou, China.
Today, North Star Imaging is one of the leading manufacturers of 2D Digital Radiography and 3D Computed Tomography systems in the world. Additionally, each worldwide location houses state of the art equipment for demonstration and need based X-ray/CT Inspection Services. No matter your location, NSI has local employees ready to help evaluate your needs, explain the technology and provide thorough training upon installation. Furthermore, each NSI location employs dedicated service personnel, so local help is never more than a phone call away.
What is Digital Radiography?

Digital Radiography, or DR for short, is a 2D X-ray inspection method using a digital X-ray detector in place of X-ray film. DR allows for real-time X-ray inspection of your part or object - no more waiting for film to process! You can make scan adjustments on the fly and also apply digital image enhancements quickly and easily – saving you time.

Digital Radiography detectors are designed to be used time after time, helping to eliminate the cost of consumables – saving you money.

Our Digital Radiography systems are designed to make your business and your team as efficient as possible. Programmed and repeatable inspection sequences, easy to use software and superior image quality lets you focus more monitoring your product quality while also increasing throughput.

We offer DR Training
4nsi.com/training
What is Digital Radiography?

Battery Cylinder Head

Flat Panel X-ray Detector

Carburetor

Cylinder Head

Battery
What is Computed Tomography

3D Computed Tomography (CT) is a nondestructive scanning technology that allows you to view and inspect the external and internal structures of an object in 3D space. Computed Tomography works by taking hundreds or thousands of 2D Digital Radiography projections around a 360 degree rotation of an object. Proprietary algorithms are then used to reconstruct the 2D projections into a 3D CT volume, which will allow you to view and slice the part at any angle.

3D CT virtually eliminates interpretation errors and opens the door to many capabilities that are not available with any other technology.

CT capabilities include:
- Internal and external measurements
- 3D CAD comparisons
- Void analysis
- Surface reconstructions for reverse engineering
- Finite Element Analysis
- And much more

North Star Imaging Computed Tomography systems are the easiest to use in the industry. NSI’s efX-CT software uses five simple steps to guide you through the CT scanning process and have you inspecting your product in no time – increasing your quality and efficiency.

We offer CT Training
4nsi.com/training
What is Computed Tomography

Munitions Plastics IC Chips

Flat Panel X-ray Detector

100's to 1000's of DR images are collected

DR images are reconstructed into a 3D CT Volume
Applications & Markets

- Castings
- Aerospace
- Electronics
- Museum
The uses of Digital Radiography and Computed Tomography are very diverse.

There are few limits on what we can scan and what we can see; we’re working every day to push those limits.
The ImagiX is North Star Imaging’s most compact system. The system can be configured as a desktop unit or a freestanding system. The generous scanning envelope can handle products up to 5” (12cm) in size making it a great choice for laboratories, small electronics and R&D applications.
The X25 is quite possibly the most conveniently sized system on the market. The system offers all of the same creature features as the larger systems while still maintaining the ability to fit through a standard interior door. The X25 is well suited for small to medium sized objects as well as submicron inspection.

**SYSTEM CAPABILITIES**
- Ideal for submicron X-ray and CT applications
- X-ray Energies from 10kV-160kV
- Geometric Magnification: Up to 4000x
- Overall Maximum System Resolution: 0.5 micron
- 6” (15cm) diameter x 9” (22cm) tall nominal part envelope

**CT SOFTWARE**
- Comprehensive acquisition, processing and archival program with user-friendly interface
- High performance image processing and measurement functions
- Non-proprietary multiple image format output/input. DICONDE compliant
- Automated program functions for fast analysis
- Multiple window interface for display of raw image, processed image, density data, etc.
- Computed Tomography acquisition module
- Optional 3D Computed Tomography calibration, reconstruction and visualization
- Optional 4D Computed Tomography

**X-RAY SOURCE**
- Voltage Range: 10kV-160kV
- Minimum Focal Spot Size: 0.5 micron
- X-ray Tube Types: Nano-focus, Micro-focus, Open or Sealed, Transmission

**X-RAY DETECTOR**
- Digital X-ray Detector Types: Flat Panel (DDA)
- Grade Options: Standard or CT Premium, 14bit or 16bit
- Detector Size: Up to 9” x 11” (22cm x 27cm)
- Characterized to ASTM E2597 Standard

**MANIPULATOR**
- Maximum Sample Weight: 25lbs (11kg)
- Focal distance: variable up to 39” (99cm)
  - Manipulator Travel:
    - Vertical = 9” (22cm)
    - Horizontal (x-axis) = 6” (15cm)
    - Rotation = 360°
- Vertical image coverage: variable up to 11” (27cm)
  - (*Exact measurements vary depending on X-ray source, detector, and optional configurations)
- Part Manipulation Control:
  - All drives variable speed joystick controlled

**CABINET**
- External Dimensions: 73” Wide, 38” Deep, 71” Tall (185cm Wide, 96cm Deep, 180cm Tall)
- Transportable through standard 36” (92cm) wide doors (removable light curtains)
- Cabinet Features: Cable access port with cover, interior lighting, powered sliding access door(s), leaded glass viewing window, safety light curtains
- Steel/lead/steel construction
- Meets or exceeds 21 CFR 1020.40 and EN 61010-2-091 2012
- Touch screen operation
- Vibration isolation system
- System includes one ergonomic desk and chair

» Each axis is independently controlled
- Control-X: Programmable CNC controlled automated scanning with automatic image processing and archiving capabilities

**METROLOGY AND SUBMICRON RESOLUTION**

The X25 is quite possibly the most conveniently sized system on the market. The system offers all of the same creature features as the larger systems while still maintaining the ability to fit through a standard interior door. The X25 is well suited for small to medium sized objects as well as submicron inspection.
The X50 is one of NSI’s most popular models for electronics, aerospace components and medical devices. It offers an excellent balance of power and space sensitivity. The system can handle products up to 12” (30cm) in size while seated nicely in your failure analysis lab or busy production line.
The X5000 is the most versatile system offered by North Star Imaging. The system boasts a large scanning envelope and excellent ergonomics for loading sizable objects while still maintaining the sensitivity to inspect even the smallest of items.

**SYSTEM CAPABILITIES**
- X-ray Energies from 10kV-450kV
- Geometric Magnification: Greater than 2000x
- Overall Maximum System Resolution: better than 500nm
- Meets ASTM E2597 Standard
- 32" (81cm) diameter x 48" (121cm) tall nominal part envelope

**CT SOFTWARE**
- Comprehensive acquisition, processing and archival program with user-friendly interface
- High performance image processing and measurement functions
- Non-proprietary multiple image format output/input. DICONDE compliant
- Automated program functions for fast analysis
- Multiple window interface for display of raw image, processed image, density data, etc.
- Computed Tomography acquisition module
- Optional 3D Computed Tomography calibration, reconstruction and visualization
- Optional 4D Computed Tomography
- Available with vortexX, subpixX, and mosaiX

**X-RAY SOURCE**
- Voltage Range: 10kV-450kV
- Minimum Focal Spot Size: < 500nm
- X-ray Tube Types: Nano-focus, Micro-focus, Mini-focus, Open or Sealed, Transmission or Directional or Dual Head
- Optional Dual Tube configuration

**X-RAY DETECTOR**
- Digital X-ray Detector Types: Flat Panel (DDA), Linear Diode Array (LDA), Image Intensifier
- Grade Options: Standard or CT Premium, 14bit or 16bit
- Detector Size: Up to 16" x 16" (40cm x 40cm)

**MANIPULATOR**
- Maximum Sample Weight: 250lbs (113kg) (400lbs (181kg) optional)
- Focal distance: variable up to 62" (157cm)
- Manipulator Travel:
  - Vertical = 46" (121cm)
  - Horizontal (x-axis) = variable up to 32" (83cm)
  - Tilt = +20°
  - Rotation = 360°

**CABINET**
- External Dimensions:
  - 240kV model: 107" Wide x 80" Deep x 92" Tall (271cm Wide, 203cm Deep, 233cm Tall)
  - 450kV model: 126" Wide x 91" Deep x 102" Tall (320cm Wide, 231cm Deep, 259cm Tall)
- Cabinet Features: Cable access port with cover, interior lighting, powered sliding access door(s), leaded glass viewing window (240kV model only), internal camera monitoring system, safety light curtains
- Steel/lead/steel construction
- Meets or exceeds 21 CFR 1020.40 and EN 61010-2-091 2012
- Touch screen operation
- Includes one ergonomic desk and chair

Motorized detector travel for variable focal distance adjustment
Part Manipulation Control:
  - All drives variable speed joystick controlled
  - Each axis is independently controlled
  - NSI CNC motion control software for automated scanning with automatic image processing and archiving capabilities
  - Option: Rotational stage indexes outside of the cabinet for ergonomic part loading/unloading
The X6000 is specifically designed for castings and other large and heavy products. The system features a programmable C-arm manipulator for automated and repeatable inspection sequences. The massive access door and external indexing rotational stage make loading quick and easy.

**SYSTEM CAPABILITIES**
- X-ray Energies from 10kV-225kV
- Shielded to 160kV or 225kV
- Geometric Magnification: Greater than 2000x
- Capable of scanning large components
- 48” (121cm) diameter x 60” (152cm) all nominal part envelope

**CT SOFTWARE**
- Comprehensive acquisition, processing and archival program with user-friendly interface
- High performance image processing and measurement functions
- Non-proprietary multiple image format output/input. DICONDE compliant
- Automated program functions for fast analysis
- Multiple window interfaces for display of raw image, processed image, density data, etc.
- Optional 2D, 3D & 4D Computed Tomography acquisition module

**X-RAY DETECTOR**
- Digital X-ray Detector Types: Flat Panel (DDA)
- Flat Panel Detector Size: Up to 16” x 16” (40cm x 40cm)

**MANIPULATOR**
- Maximum Sample Weight: 400lbs (181kg)
- Focal distance: variable up to 48” (122cm)
- Manipulator Travel:
  - Vertical = 68” (173cm)
  - Horizontal = 48” (122cm)
  - Lateral = 46” (117cm)
  - C-Arm Tilt = +60/-60°
  - Rotation = 360°
- Vertical imaging coverage: variable up to 72” (183cm)
  (*Exact measurements vary depending on X-ray source, detector, and optional configurations)
- Motorized detector travel for variable focal distance adjustment
- Part Manipulation Control:
  - All drives variable speed joystick controlled
  - Each axis is independently controlled
- Rotational stage indexes outside of the cabinet for easy part loading/unloading

**X-RAY SOURCE**
- Voltage Range: 10kV-225kV
- X-ray Tube Types: Transmission or Directional Micro-focus, Mini-focus
- Optional Microfocus Rod Anode or Center Tube Design

**CABINET**
- External Dimensions: 139” Wide x 120” Deep x 132” Tall (353cm Wide, 304cm Deep, 335cm Tall) (varies depending on shielding)
- Cabinet Features: Cable access ports with cover, interior lighting, 52” x 90” (132cm x 228cm) powered bi-parting sliding access door, two 15” x 24” (38cm x 60cm) leaded glass viewing windows, internal camera monitoring system, safety light curtains
- Steel/lead/steel construction
- Meets or exceeds 21 CFR 1020.40 and EN 61010-2-091 2012
- Touch screen operation
- Includes one ergonomic desk and chair

**OPTIONS**
- edX-CNC programmable CNC controlled automated scanning with automatic image processing and archiving capabilities
- Lateral detector motion
- Additional X-axis for long component scanning
The X7000 is North Star Imaging’s largest standard system. The optional independent horizontal (x-axis) travel of the tube and detector allow for unparalleled inspection capabilities of an elongated object. The system is great for composites, castings, pipes, tubes, welds and similar parts.

**SYSTEM CAPABILITIES**
- X-ray Energies from 10kV-450kV
- Geometric Magnification: Greater than 2000x
- Capable of scanning large components
- 60" (152cm) diameter x 60" (152cm) tall nominal part envelope

**CT SOFTWARE**
- Comprehensive acquisition, processing and archival program with user-friendly interface
- High performance image processing and measurement functions
- Non-proprietary multiple image format output/input. DICONDE compliant
- Automated program functions for fast analysis
- Multiple window interface for display of raw image, processed image, density data, etc.
- Computed Tomography acquisition module
- Optional 3D & 4D Computed Tomography acquisition module
- Available with vorteX, subpiX and mosaiX

**X-RAY SOURCE**
- Voltage Range: 10kV-450kV
- X-ray Tube Types: Transmission or Directional Micro-focus, Mini-focus
- Optional dual tube configuration

**X-RAY DETECTOR**
- Digital X-ray Detector Types: Flat Panel (DDA), Linear Diode Array (LDA)
- Flat Panel Detector Size: Up to 16” x 16” (40cm x 40cm)
- LDA size up to 36” (91cm)
- Optional dual detector configuration

**MANIPULATOR**
- Maximum Sample Weight: 800lbs (362kg)
- Focal distance: variable up to 72”
- Manipulator Travel:
  - Vertical = 60” (152cm)
  - Horizontal (x-axis) = variable up to 48” (123cm)
  - Tilt = ±20°
  - Rotation = 360°
- Vertical imaging coverage: variable up to 72” (183cm)
  - (“Also available in a standalone version)
  - (“Exact measurements vary depending on X-ray source, detector, and optional configurations)
- Motorized detector travel for variable focal distance adjustment
- Rotational stage indexes outside of the cabinet for easy part loading/unloading
- Part Manipulation Control:
  - All drives variable speed joystick controlled
  - Each axis is independently controlled
- Options:
  - Control-X programmable CNC controlled automated scanning with automatic image processing and archiving capabilities
  - Lateral detector motion
  - Dual tubes and/or dual detectors
  - Additional X-axis for long component scanning

**CABINET**
- External Dimensions: 191" Wide x 130” Deep x 137” Tall (485cm Wide, 330cm Deep, 348cm Tall) (varies depending on shielding)
- Cabinet Features: Cable access ports with cover, interior lighting, powered bi-parting sliding access door (60” x 90” (172cm x 228cm) door opening), internal camera monitoring system, safety light curtains
- Steel/lead/steel construction
- Meets or exceeds 21 CFR 1020.40 and EN 61010-2-091 2012
- Touch screen operation
- Includes one ergonomic desk and chair
Systems

Seamlessly acquire full internal and external measurements of your components with the CXMM 50, a true X-ray based coordinate measuring machine. Whether you need to measure the inside of a fuel injector or the coating thickness on a heart valve, the CXMM 50 was designed to give the user an unparalleled product development and quality control tool.

**SYSTEM CAPABILITIES**
- Geometric magnification max ~330x
- Overall maximum system detectability 2 μm

**CT SOFTWARE**
- Quickly acquire, process, and archive images with a user friendly interface
- Output/Input images in multiple non-proprietary formats. DICONDE compliant.
- Programmable motion control software for automated scanning with automatic image processing and achieving capabilities
- Reconstruct 3D models quickly using our 5-step guided wizard

**X-RAY SOURCE**
- X-ray tube: 225kV directional
- Voltage Range: 20kV - 225kV
- Minimum Focal Spot Size < 5 microns

**X-RAY DETECTOR**
- Flat Panel (DDA)
- Grade Option: CT Premium - 16 Bit
- Detector Size: 9.8” x 7.9” (25cm x20cm)

**MANIPULATOR**
- Maximum Sample Weight: 25lbs (11.3kg)
- Workpiece Travel:
  - Vertical = 13” (33cm)
  - Horizontal, X-axis = 13” (33cm)
  - Horizontal, Z-axis = 44” (112cm)
  - Rotation = 360°
- Nominal workpiece envelope: Diameter 12” (30cm), Height 12” (30cm)
- Max tube to detector distance: 52” (132cm)
- Control workpiece with the variable speed joystick and highly repeatable manipulator

**CABINET**
- External Dimension: 92’’ Wide, 54’’ Deep, 78’’ Tall (234cm Wide, 137cm Deep, 198cm Tall)
- Temperature Control with precision air conditioning system accurate to ±1 °C
- All cabinets are steel/lead/steel construction that meet or exceed 21 CFR 1020.40 and EN 61010-2-091 2012
- System includes one ergonomic desk and chair
- Brightly lit large leaded glass viewing window
- Easily access the X-ray source for routine maintenance through front panel
ENGINEERED FOR METROLOGY
Built-in temperature control and vibration isolated granite table

NONDESTRUCTIVE MEASUREMENTS
Measure the inside and outside of workpieces

VERIFIABLE ACCURACY
Ensures precise, accurate measurements in accordance with VDI/VDE 2630 part 1.3

225 kV
Max X-ray Energy

3.5µm + L/50
Accuracy*

30 cm x 30 cm
Nominal Workpiece Envelope

*Sphere distance error in accordance with VDI/VDE 2630 part 1.3. The given accuracies are valid for the operating conditions detailed in the test procedure.
Upgrades

Film to Real Time Digital Radiography

Benefits

• Less consumables = Reduced Costs
• Real time evaluation capability = Increase Productivity
• Higher resolution results = Increased Inspection Capabilities/Quality Control

Typical package includes:

• New digital flat panel X-ray detector (NSI will help you choose the best detector for your specific application)
• New software
• New real time workstation

Real Time Digital Radiography Performance Upgrade

Benefits

• Updated software = Increased Productivity and Higher Resolution Results
• Higher resolution results = Increased Inspection Capabilities/Quality Control

Typical package includes:

• New digital flat panel X-ray detector
• New X-ray tube (mini, micro, nano) (90kV to 450kV)
• New DR acquisition and processing software
2D Real Time Digital Radiography to 3D Computed Tomography Upgrade

Benefits
- Full 3D CT capabilities without the cost of a new CT system
- 3D Metrology and Reverse Engineering capabilities
- Complete 3D Inspection = Increased Inspection Quality

Typical package includes:
- efX-CT software – includes geometry definition, reconstruction and 3D visualization
- CT workstation with GPU reconstruction capabilities
- CT acquisition software
- High precision rotational stage
- New X-ray tube and/or X-ray detector optional

3D Computed Tomography Performance Upgrade

Benefits
- Increased reconstruction speed (up to 50x faster) = Increased Productivity
- Extremely easy to use CT software = Increased Productivity
- Higher resolution results with less noise = Increased Inspection Capabilities/Quality Control

Typical package includes:
- efX-CT Software - includes geometry definition, reconstruction and 3D visualization
- CT workstation with GPU reconstruction capabilities
- Advanced 3D Analysis Capabilities - Geomagic/VGStudio MAX/Avizo...
- New X-ray tube and/or X-ray detector optional
is a new generation DR software developed entirely by North Star Imaging. Exclusively featuring:

- High performance GPU driven image processing and measurement
- Automatic creation of customizable Technique sheets for operator records
- Easy CT acquisitions: continuous or step, Fan Beam, Cone Beam, vorteX
- Enhanced detector capabilities: larger size (mosaiX) or improved resolution (subpiX)
- Seamless integration with efX-CT software
- DICONDE compliant
- Automated program execution triggered by barcode (or similar) input

**efX-DR IMAGE PROCESSING SOFTWARE**
- Windows® based
- Non-proprietary image storage format (TIFF)
- High performance GPU image processing and measurement
- Live averaging
- Live histogram with multiple color tables
- Live line profile
- Live rotation between portrait and landscape modes
- Live measurements
- Live image offset and multiple gain calibration, defective pixel correction
- Live signal to noise and live contrast to noise measurement
- Filters to improve image quality
- Automatic creation of customizable Technique sheets for operator records
- Capture video into AVI files
- Supports digital flat panel detectors, LDA’s and digital/analog cameras at 8, 10, 12 and 16 bits
- Supports multiple X-ray sources
- Read and store images in TIFF 32 bit / 16 bit / 8 bit, BMP, JPEG, DICONDE
- Seamless integration with efX-CT software
- Optional CNC motion control and teach-based motion programming
- Optional Production Mode with barcode input and automated system operation

**efX-DR ACQUISITION WORKSTATION:**
- Windows® based
- Intel® Xeon® Processor
- 8 GB RAM
- 1 TB SATA High Speed Hard Drive
- 10/100/1000 network interface card
- 30” high resolution flat panel monitor

**OPTIONAL DETECTOR QUALIFICATION MODULE:**
- ASTM 2597, 2737 and BSS 7044 Rev B. specifications
- Simplifies reporting process to meet above guidelines
- Simple SRb calculation
efX-CT is the Easiest, Fastest and Most Complete Industrial CT Software on the Market. Exclusively featuring:

- GPU accelerated CT reconstruction module
- Automatic Parallelization for systems with multiple GPUs
- 5-step guided wizard for easy CT reconstruction
- Intuitive interface and OpenGL based 3D volume rendering
- Unique geometry definition independent of system/mechanical precision
- Non-proprietary data formats, handles broad range of input formats

efX-CT PACKAGE INCLUDES:
- Full software license
- High-end, multi-processor CT reconstruction and 3D visualization workstation
- Complete user guide, documentation and geometry tools

efX-CT SOFTWARE INCLUDES:
- User friendly interactive volume viewer
- 2D Viewer: efX-view for X-ray images and CT slices
- CT slices stack import
- Compatible 2D formats include BMP, TIFF, DICOM, DICONDE and most standard formats
- Automated focal spot drift compensation
- Volume format conversion capabilities
- Advanced CT mode for full access to all CT reconstruction parameters
- Filters on projections for noise and artefact correction
- Unique ultra-fast 3D preview of CT reconstructions
- Region of Interest CT reconstruction
- Job list – process all CT reconstructions in a queue
- Interactive density segmentation
- Real time multi-slicing (up to six planes) with measurements
- Volume resizing, cropping and reorienting
- Imperial and Metric measurement systems
- Beam hardening correction
- Surface extraction with export to STL, OBJ, DXF, WRL, PLY, etc.
- No limitation in reconstruction size and resolution
- Easy screen capture, video recording and exporting of x/y/z slices
- Easy repeat scans - configure once, reconstruct multiple
- Production Mode with automated reconstruction

efX-CT
- Windows® based
- Reconstruction Modules:
  - Conventional Cone-Beam (FDK)
  - VorteX
  - SubpiX
  - MosaIX
  - Fan-Beam

OPTIONS INCLUDE:
- GPU acceleration package with NVIDIA hardware
- High capacity high speed storage with hardware RAID support
- Geomagic, VGStudioMAX and/or Avizo software packages for advanced data processing/analysis
mosaiX utilizes a redesigned manipulator and a proprietary algorithm to stitch multiple images forming one seamless image with a much larger field of view. With mosaiX the effective imaging field of view is no longer limited by the detector panel size, and can now be expanded as large as the cabinet will accommodate.

subpix uses a redesigned motion system and a proprietary algorithm to generate images with improved resolution that is typically double of what the detector alone is capable of achieving.

vortex is a computed tomography technique that allows you to scan elongated objects that cannot fit into a single exposure, thus enabling higher magnification and increased resolution. The other major benefit of vortex is the elimination of cone beam artifacts, which are usually seen at the top and bottom of conventional CT scans that use short focal distances or wide cone angles.
Software Innovations

High Performance CT Workstation

The NSI 4G Ultimate CT reconstruction workstation is the most powerful workstation to date. It features four NVIDIA Quadro K6000 GPUs running in parallel and 256GB of RAM. This doubles GPU RAM and quadruples the System RAM from the previous generation 4G eXtreme. CT reconstruction times are 5x to 50x faster than any other CT workstation available today.

4D CT

4D X-ray Computed Tomography allows users to reconstruct a complete 3D CT model that includes time and motion, creating a truly dynamic volumetric dataset. Because this is an X-ray Computed Tomography process, both the internal and external structures of an object are obtained. This new and exciting technology makes it possible to study form, structure and now – function.
North Star Imaging’s Inspection Services Group provides real-time X-ray inspection and CT scanning services to virtually anyone needing to verify the integrity of internal components. The “inside view” that our team produces is unparalleled in the industry and is the foundation for all of the services that we provide. When you need high accuracy examination of internal components or wish to inspect the dimensions of any assembly, call on NSI’s Inspection Services Group. No other company offers a broader range of services or the depth of nondestructive testing expertise.
Applications Include:

- Failure Analysis
- Research and Development (R&D)
- Product Quality Compliance/Screening
- Internal and External Measurements
- Reverse Engineering
- Density Analysis
- Product Contamination
- 3D Metrology
- Museum Artifact Digitization
- Weld Quality Analysis
- Assembly Verification

You can be assured that NSI’s support team for the Inspection Services Group is always on top of their game. We needed their support and everything went well, as usual. We were able to manipulate the scans and gather the information we needed. We appreciate their quick turnaround in processing and as always their excellent customer service.

- CT Customer, Medical
1. CONSULT: Consult our application specialists to develop a plan of action.

2. SHIP SAMPLE: Ship your product to any of our worldwide locations.

3. SCAN: Whether it’s 1 or 1000, big or small, we can scan it all.
4. **DATA:** Rotate, virtually cross section and measure your part with our viewing software.

5. **RESULTS REVEALED:** Join us for a web meeting or visit our facility to answer your questions.
Preventative Maintenance Services

Our goal is to help you avoid interruptions by keeping your system up-to-date and running smoothly.

All preventative maintenance agreements include a 12 Point Inspection:

1. Clean and adjust X-ray Tubes, replace o-rings and adjust Controllers to manufacturers specs
2. Clean, inspect, set, compression and reapply dielectric grease
3. Vacuum system check and change oil if applicable
4. Clean cooler and test safety switches
5. Clean and verify adjustments on the HT generators to preserve tube filament life
6. Clean, inspect and lubricate manipulator
7. Test and Adjust shutter
8. Test and adjust Safety Interlocks and Safety Lamps
9. Test power and supplies and adjust to factory specifications
10. Inspect for proper cable drape
11. Verify cooler operation
12. Perform a Radiation Safety Survey with documentation
Preventative Maintenance Services

- Minimize downtime due to unnecessary failures
- Maximize equipment performance and extend life of system
- Reduced Maintenance Cost

Customers on contract receive:

- Discounts on parts and service labor
- Unlimited FREE phone support
- Priority scheduling

“The Service Representative assigned to me by NSI was amazing. I have been singing his praises to everyone in my organization. I thought I knew everything when it came to our system, but NSI’s technician knew so much more. I’ve compared him to Rain Man with the amount of knowledge he has!”

--Repair Visit Customer, Military
Services

On-site Training
Convenient and cost effective training with factory trained and authorized system specialists.

- New System operations training
- Configuration and Calibrations
- NSI efX DR and efX CT Software and supporting applications training
- Basic Maintenance Training
- Technique development specific to customers’ parts/products
Technical Service Offerings

- Repair Services
- Replacement or spare parts purchase
- Upgrades
- Custom application development or certification runoff support

We offer replacement X-ray tubes, detectors and additional components

- System Relocation
- Radiation Surveys
- Technique Development
- Software Maintenance Contract
NSI’s customer service is exceptional -- When I have had to call for assistance everyone has been very helpful and goes above and beyond”. We’re extremely satisfied with the products/services provided by North Star Imaging from their Inspection Services, to the software application used for scanning. Their products/services make our job so much easier. The scans are easy to read, clear, and provide incredible detail.

- CT Customer, Oil and Gas

ISO 9001:2008

NSI Quality Policy:
The people of ITW North Star Imaging are committed to understanding and achieving our customer’s expectations and providing world class imaging products and services driven by a culture of continual improvement.

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