POLESTAR™ iMRI NAVIGATION SUITE
Seamless Integration of Surgical Navigation and Intra-operative Imaging Technologies
What if technology enabled you to...

- verify extent of resection
- preserve healthy tissue during surgery
- maximize OR utilization
- eliminate complications arising from brain shift throughout the surgery
- reduce the likelihood that the patient will require repeat surgery
- view and navigate a 3D orientation of the surgical region
- integrate a variety of physiological and functional imaging methods
- close with confidence

and-shoulders above the rest as a center of neurosurgical excellence.
Proven Imaging and Navigation in ONE Comprehensive Suite

Intra-operative Imaging

- Image fusion of pre-operative diagnostic scans (CT, MR, PET, & fMRI) with intra-operative images
- Available scanning sequences — T1, T2, Flair, and e-steady (combination of T1 & T2)
- Intra-operative scanning times from 8 seconds to 13 minutes
Computer-Assisted Navigation

- Allows navigation without registration
- Compare feature — allows simultaneous viewing and navigation on multiple series
- Provides active and passive instrument tracking
- Allows for co-navigation on diagnostic and intra-operative images with compare feature
“PoleStar™ has clearly changed my surgical management of certain brain tumors.”

DR. JOHN RUGE
Lutheran General Hospital,
Chicago, IL

“There is no real neuronavigation without intra-operative imaging.”

DR. RENE L. BERNAYS
University Hospital, Zurich,
Switzerland

It’s All About The Image.

CASE 1
GLIOBLASTOMA MULTIFORME

CASE 2
LOW GRADE GLIOMA

Procedure begins
“The new software advances allow highly detailed, ‘side-by-side’ comparisons of the pre-op, intra-op and post-op images, allowing us the best possible resection for our patients.”

DR. GEORGE K. BOVIS
Lutheran General Hospital,
Chicago, IL

Case 3
Pituitary

Case 4
Cavernous Angioma

Procedure completed. OR ready for next procedure.
Setting the Standard in Intra-operative Imaging

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"The PoleStar™ has been a major asset to our practice."

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Procedure completed.
OR ready for next procedure.

CASE 4
CAVERNOUS ANGIOMA

CASE 3
PITUITARY

Cranial Imaging

The PoleStar™ iMRI Navigation Suite does not require a dedicated OR.

When iMRI is not in use, the full Medtronic suite is available, including spine, orthopaedic, ENT, and cranial procedures with standard instruments.

Medtronic enables microscope navigation with the PoleStar™ iMRI Navigation Suite for Zeiss®, Leica®, Möller® and Olympus® platforms.

* Future application

AXIEM™ Compatible
Local Radio Frequency (RF) Shielding for the PoleStar™ iMRI Navigation Suite

- Maximizes OR utilization
- Reduces overall project costs and complexity
- Significantly reduces OR downtime due to construction
- Enables an intra-operative MRI program for any institution
- Does not require dedicated OR
- Maintains surgical throughput by allowing for additional surgical procedures

StarShield™ — Local RF Shielding

The PoleStar™ iMRI Navigation Suite does not require a dedicated OR. When iMRI is not in use, the full Medtronic suite is available, including spine, orthopaedic, ENT, and cranial procedures with standard instruments.

* Future application

CRANIAL
- Biopsy Pediatric Surgery
- Shunt Placement
- Tumor Resection

ORTHOPAEDIC
- Knee Joint Replacement
- Hip Joint Replacement
- Trauma Hip Resurfacing*

SPINE
- Spinal degenerative disease
- Open procedures
- Percutaneous procedures
- Deformity
- Trauma
- Cervical

FUNCTIONAL NEUROSURGERY
- DBS™ Lead Placement with Planned Trajectory using FrameLink™ and Stealth-Merge™ Application

ENT
- Functional Endoscopic Sinus Surgery
- Lateral Skull Base

University Hospital, Neurosurgery Department - Frankfurt, Germany

StarShield™ allows for easy patient access, providing an illuminated interior and available ports for anesthesia lines.

Expanded Functionality


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Technology when you need it, standard surgical utility when you don’t.

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CASE 3
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PoleStar™
Setting the Standard in Intra-operative Imaging

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Cranial Imaging

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Complete Multidimensional Surgical Imaging

- A mobile imaging platform optimized for spine and orthopaedic surgery
- Patented telescoping gantry
- "O" shaped gantry allows for 2-D fluoroscopy and 3-D imaging
- Robotic positioning for ease of use
- Digital flat panel detector provides improved image quality and larger field of view

Spinal Imaging
The PoleStar™ iMRI Navigation Suite is the first system to offer a comprehensive solution for hospitals looking to provide surgical navigation, intra-operative imaging, or both.
Leading innovator in image-guided surgery (IGS) and computer-assisted surgery (CAS), commanding more than 60% of the global IGS/CAS market

More than 2,100 systems installed worldwide

Flexible, empowering education and training

Continued investment in R&D programs for optimized products

Extensive network providing comprehensive customer support

85 computer-assisted surgery patents and more than 40 patents pending
We understand the reality of today’s healthcare environment where clinical value must translate into profitability.

Hospitals and surgeons are feeling the competitive and financial pressures to:
• Increase referrals and grow patient base
• Enhance image and be a community resource
• Maximize patient throughput
• Expand effective communications campaigns

In addition to providing clinically relevant navigation and iMRI solutions, Medtronic Navigation offers marketing expertise and communications tools designed to help surgeons and institutions promote their practice to their target markets. We offer a PoleStar™ Communications Kit that contains a variety of professionally developed tools to help institutions realize their business goals.

Medtronic rounds out its post-sale support by offering reimbursement coding references and documentation for iMRI and navigation procedures.

For further details regarding return-on-investment, please contact your local Medtronic account representative.

By choosing Medtronic, you’re gaining a business partner.

You’re backed by our market presence, financial stability, investment in research and development, diversity of product portfolio, and innovation leadership.

PoleStar™ iMRI Navigation Suite Service Solution

Medtronic Navigation delivers the highest level of support in the industry.

A Medtronic Navigation Service Solution for the PoleStar™ iMRI Navigation Suite incorporates software upgrades, 24/7 system support, and comprehensive training into one complete package to maintain your hospital’s position at the leading edge of navigation technology.

Medtronic ensures a successful installation by adhering to hospital guidelines, working within the hospital structure, assigning appropriate resources, and providing ongoing training. From a clinical standpoint, Medtronic is committed to support of initial surgeries and will provide ongoing training, education and biannual system check ups.
World Leader in surgical navigation technology and intra-operative imaging

Medtronic Navigation is the world’s leading supplier of integrated surgical navigation products. With more than 2,100 StealthStation® Systems installed worldwide, Medtronic Navigation surpasses the installed base of all other manufacturers of navigation systems.

With a focus on customer-centered design, comprehensive customer support, and a well-funded research program, Medtronic Navigation is committed to providing new and current customers with leading-edge technology that will assist in improving surgical outcomes today and in years to come.

Technical Scanner Specifications

- **Magnet Specifications**
  - Design: Open Magnet
  - Type: Permanent Magnet
  - Field Strength: 0.15T
  - Aperture: 10.6" (27 cm)
  - Field of View: 6.3" x 7.9" x 7.9" (16 cm x 20 cm x 20 cm)
  - Fringe Field: 5 Gauss @ 5.5' to 7.2' (approx. 1.7 to 2.2 m from magnets’ isocenter)

- **Gradient Specifications**
  - Gradient Strength: 25 mT/m

- **RF System Specifications**
  - RF Transmission Power: 5KW

- **Imaging Modes**
  - T1 Contrast
  - T2 Contrast
  - FLAIR Contrast

- **Scanner Dimensions**
  - Height: 40.4" (1.03m)
  - Depth: 50.0" (1.3m)
  - Width: 31.5" (.8m)
  - Weight: 1490 lbs. (678 kg)

Medtronic Navigation
826 Coal Creek Circle
Louisville, CO 80027 USA
www.medtronicnavigation.com
www.polestarN20.com
Toll-free: (888) 580-8860
Telephone: +(720) 890-3200
Fax: +(720) 890-3500

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iMRI Navigation Suite
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