

OASIS™  
The ultimate Patient MRI – open

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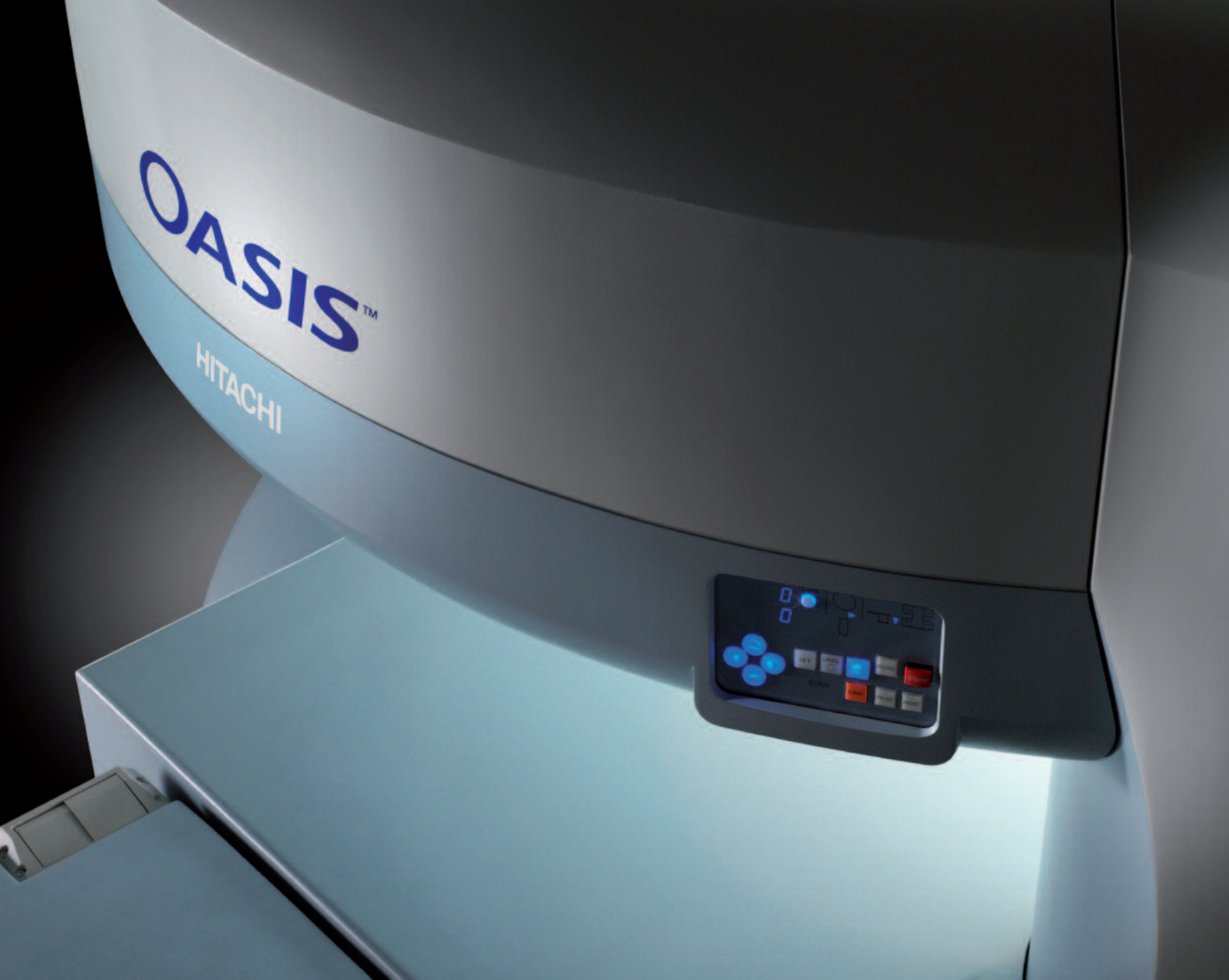
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**HITACHI**  
Inspire the Next





**OASIS™**  
The ultimate Patient MRI - open

For both you and Hitachi, the patient comes first! Hitachi Medical Systems presents OASIS™, a genuinely open and vertical high-field MRI system that can be used for all patients and covers all of your application requirements.



Hitachi Medical Systems Europe is the European headquarters of the Hitachi Medical Corporation whose corporate head offices are located in Tokyo, Japan; a company renowned for technological innovation. Our broad experience and expertise in magnet, gradient and RF technology makes us a recognised leader in open MRI. We meet the latest in design and quality standards with truly comprehensive, patient-friendly systems that combines outstanding image quality with advanced clinical applications and unbeatable economical performance.



# OASIS™ – Technology and Performance

OASIS™ combines high-speed gradients, multi-channel RF technology and unmatched Zenith RF coils with a genuinely open MRI system.

## Hitachi Technology

This powerful 1.2T vertical field MRI system delivers outstanding image quality for all of your high-field applications. Its intuitive software makes the most demanding of protocols and applications easy to understand, navigate and use. OASIS™ also supports DICOM interaction, IHE and the security features that are required to operate in a dynamic medical imaging environment. Moreover, peripheral devices can also easily be integrated into the system.

## Hitachi Design

OASIS™ demonstrates Hitachi’s unique and extensive experience in the design of patient-centric MRI systems. The 270° patient view, large vertical gap, asymmetric table alignment and high-capacity table provide the most comfortable scanning environment, regardless of the patient’s body type.

## Hitachi Image Quality

The clinical demand for high-level imaging on your schedule can be met by the OASIS™ range of diagnostic applications, all of which ensure the highest image quality in all clinical aspects.

## Hitachi Economy

OASIS™ achieves reliability for the administrator. The scan control and reconstruction engine allow efficient acquisition management. Rapid image reconstruction, smooth workflow and high patient throughput are assured. The outstanding design and technology facilitate installation in room spaces equivalent to those used for 1.5T horizontal closed bore systems, thus making siting economical.

## Hitachi Uptime

With more than 5000 installations of “Open MRI” worldwide, and over 20 years leading the development of open MRI technology, our highly valued customers rely on our excellent product reliability and services each and every day, with the number of highly satisfied customers rising year by year. How can we help you?







# OASIS™ – Open Architecture Superconductive Imaging System

OASIS™ – open architecture superconductive imaging system. Cutting-edge technology combined with patient-centric product design leads to both better diagnosis and higher productivity.

OASIS offers:

- **Highest field strength, 1.2T open design**  
delivers outstanding image quality, comparable to that of a 1.5T high-end horizontal bore system
- **Cost-effective siting**  
fits in almost all conventional 1.5T rooms
- **HOSS™ (High Order Shim System)**  
provides excellent magnet homogeneity for the best image quality and the highest patient throughput
- **Excellent image quality and RF fat saturation**  
to meet your diagnostic clinical needs
- **Unique zenith coil technology**  
20 years of experience in vertical magnetic field coil technology, with the highest number of channels in open MRI, enabling parallel imaging
- **Unique open view and patient comfort level**  
for all your patients, ensuring high patient throughput
- **Widening access by patient groups**  
ensures access to those previously unsuited or prevented from accessing horizontal bore systems

# OASIS™ – genuine patient-centric design

OASIS™ provides vertical high-field, superconductive open MRI – clinical advancement developed with the patient’s experience in mind, as patients at their ease produce the best image quality.

## HOSS™ High Order Shim System

Compensates for the effect of the patient’s body on the main magnetic field. Regional shim allows the most convenient positioning for both patient and user, giving outstanding imaging results. HOSS™ technology is the hardware platform of the future, opening up even more advanced imaging capabilities.

The clinical benefits include:

- Excellent image quality for all sequences
- Outstanding homogeneity over 45cm DSV
- Best RF fat saturation – with no compromises

## PACT Patient Active Comfort Technology

- Truly open MRI with an unobstructed view
- Patient area lighting to reduce anxiety
- Industry-leading patient table (82cm width, 225kg load capacity and in-gantry lateral movement)
- SoftSound™ gradient technology to reduce acoustic noise
- Multiple coil connections to lower patient examination time



# OASIS™ – cutting-edge Technology with a Mission

OASIS™ features the world’s first 1.2T open architecture vertical field magnet that delivers advanced clinical performance by applying best-in-class Hitachi technologies to achieve superior image quality and the highest patient comfort level.

## HOSS™ High Order Shim System

- ensures:
- perfect image quality even in off-centre regions of the body
  - high magnetic field homogeneity with large and small fields of view
  - uniform RF fat saturation and enhanced imaging capabilities

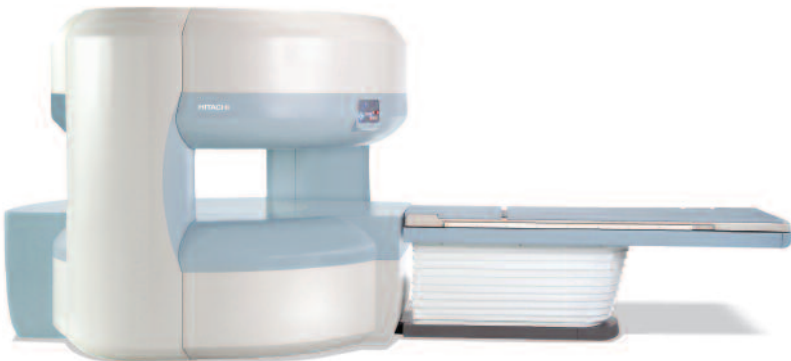
## Gradient System

Innovative Hitachi gradient amplifiers and vertical field gradient coils provide the power to scan at high spatial resolution in shortened scan times.

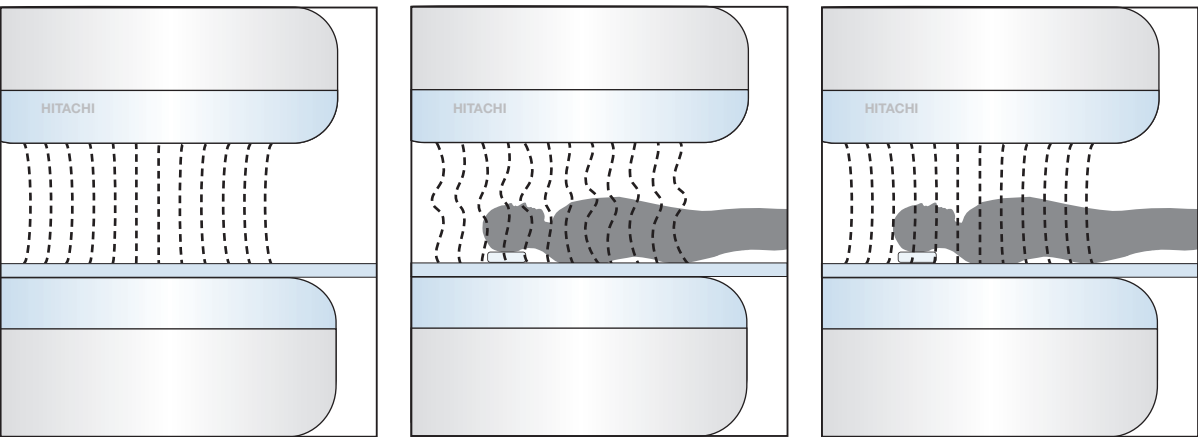
- Peak strength: 33mT/m strength
- Maximum slew rate: 100T/m/s
- Active shimming
- Water cooling
- Eddy current compensation
- SoftSound™ noise reduction

## Zenith RF Coil Technology

OASIS™ image quality is optimised by using a combination of multi-channel RF and Zenith coils. Zenith coils utilise solenoid technology which is known to have a superior signal-to-noise ratio. These coils are unsurpassed in terms of patient comfort, as well as ensuring seamless workflow and supporting a broad range of clinical applications.



## HOSS™



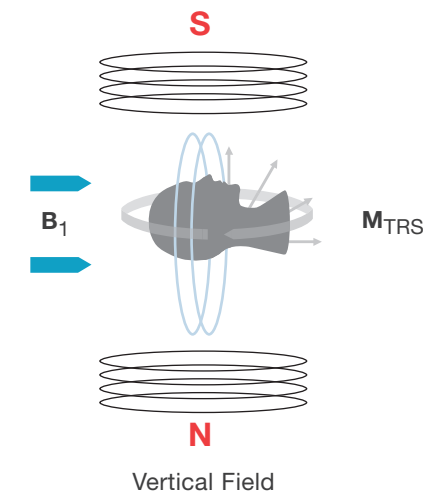
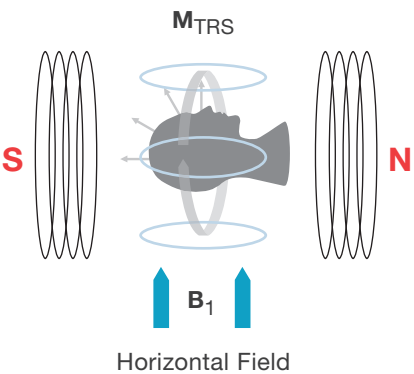
In a uniform (homogeneous) magnetic field, fat and water peaks have a constant frequency separation (at 1.2T approximately 179Hz).

Without **HOSS™**, the patient's body makes the magnetic field non-uniform, making fat saturation inconsistent.

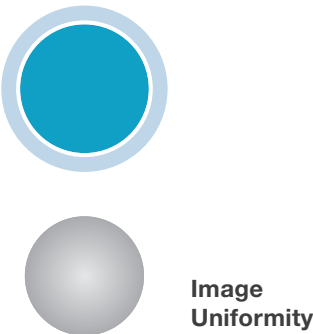
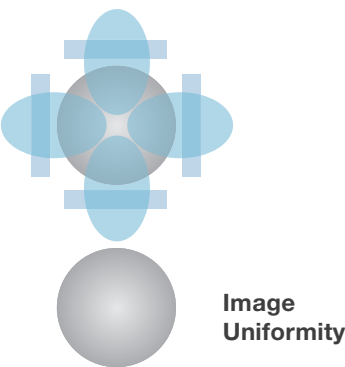
With **HOSS™**, the effect of the patient's body is reduced, promoting consistent fat saturation even across large FOV's.

## Zenith Coils

### RF Field Orientation



### Image Uniformity Result



# OASIS™ – Imaging Features tailored to the Needs of the Patient and you

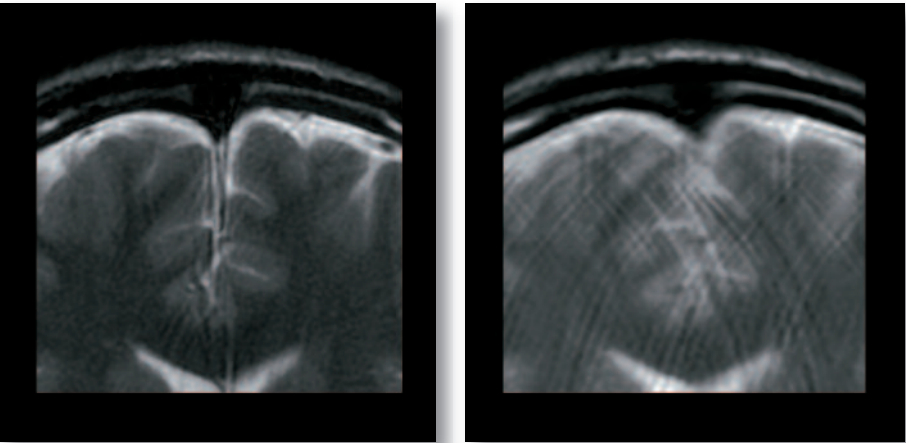
OASIS™ , the most powerful, patient-friendly whole-body MRI, offers a broad range of advanced clinical imaging capabilities. All neurological, vascular, body and orthopaedic imaging tools are available.

## RADAR™ Radial Acquisition Regime

- compensates for motion and flow artefacts
- available for all coils and planes

Transverse T2-weighted brain scan image using RADAR™ technique

Transverse T2-weighted brain scan image not using RADAR™ technique

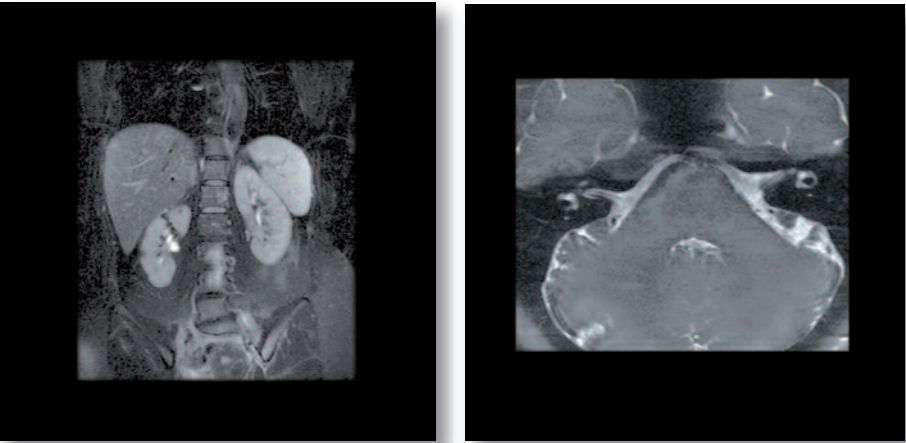


## RAPID™ Rapid Acquisition through Parallel Imaging Design

- Parallel imaging scan feature:
- increases temporal resolution and image quality
  - reduces scan time
  - optimises vertical field RF coils

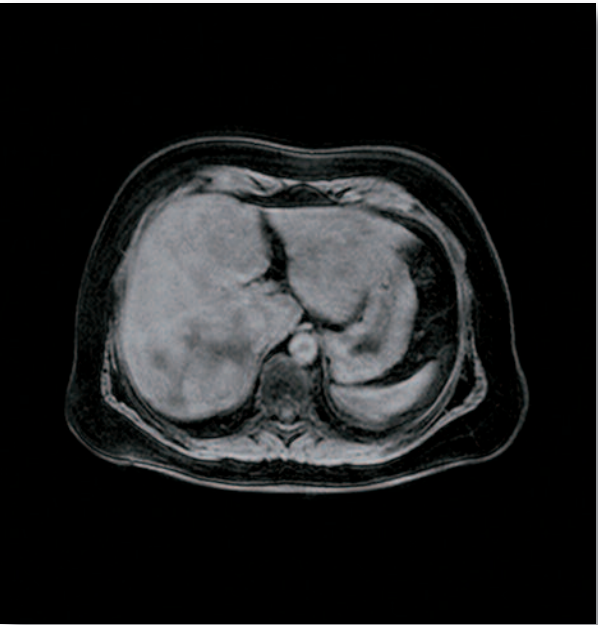
Decreased scan time – breath-hold. Coronal abdominal image with a high-resolution matrix, excellent fat saturation and scan time of only 17 seconds

Increased spatial resolution. High-resolution transverse FSE image of internal acoustic canal with 1024 x 1024 matrix acquired in 2:33 minutes



## TIGRE™ 3D T1-weighted gradient echo with segmented fat saturation

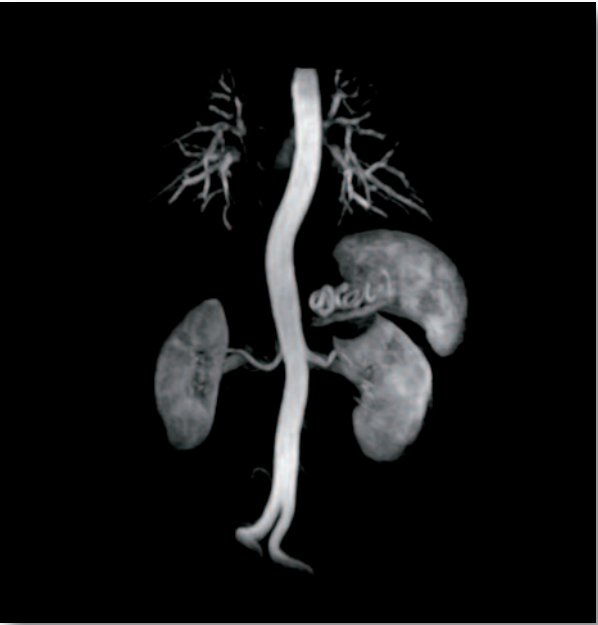
- 3D dynamic imaging for thin slice complete organ coverage:
- optimises RF fat suppression
  - ensures excellent image quality, especially in abdominal and breast applications



Abdominal, Dynamic TIGRE™, Liver haemangioma

## TRAQ™ Time-resolved MRA

- enables ultra-fast 3D dynamic scans in the observation of blood kinetics



Renal Artery CE MRA, MIP



**FLUTE™**  
**Fluoro Triggered MRA**

- 2D monitoring pulse used to observe bolus, fast switching to 3D when bolus is at area of interest.

Carotis FLUTE™



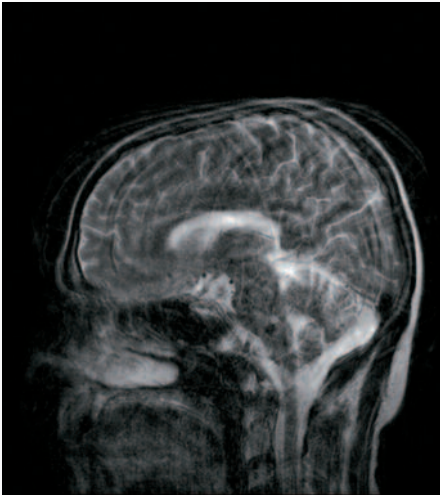
**VASC™**  
**Non-contrast MRA**

- provides an excellent alternative to peripheral bolus MRA for patients with renal insufficiency

VASC™, Non Contrast  
 Vascular Imaging

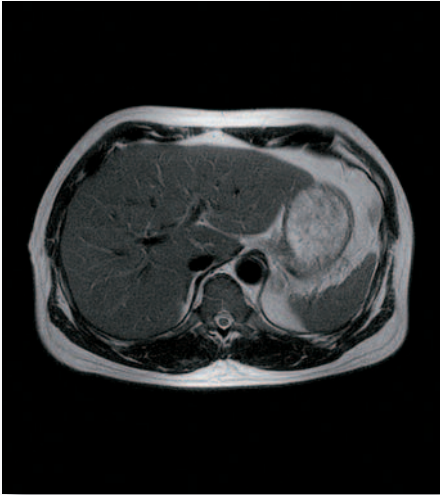


**Neuro**



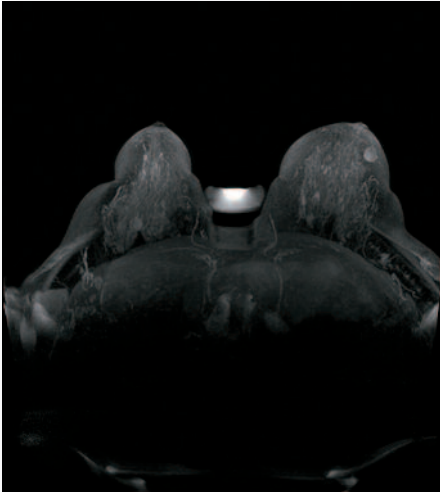
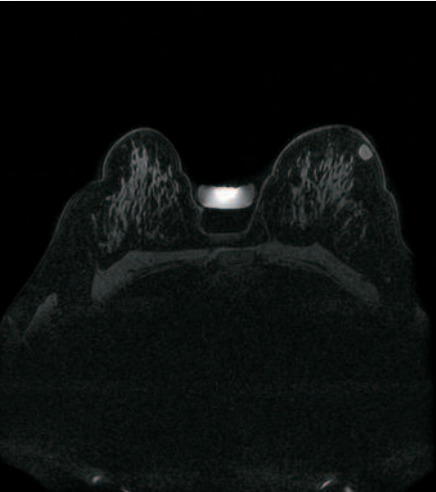
Brain T2 sagittal using  
 RADAR™ technique,  
 excellent motion  
 supression  
 Brain T2 sagittal  
 not using RADAR™  
 technique

**Body**



HOSS™,  
 Spinal cord 45cm FOV  
 HOSS™,  
 Abdominal RADAR™ no  
 breathhold

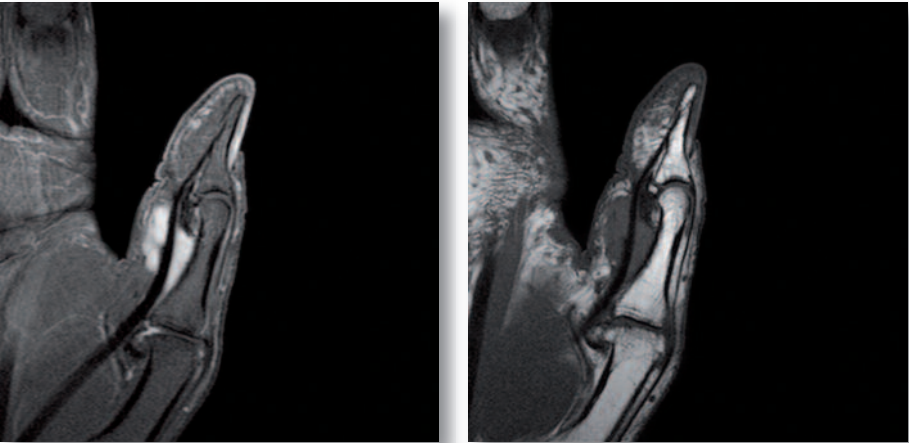
**Breast**



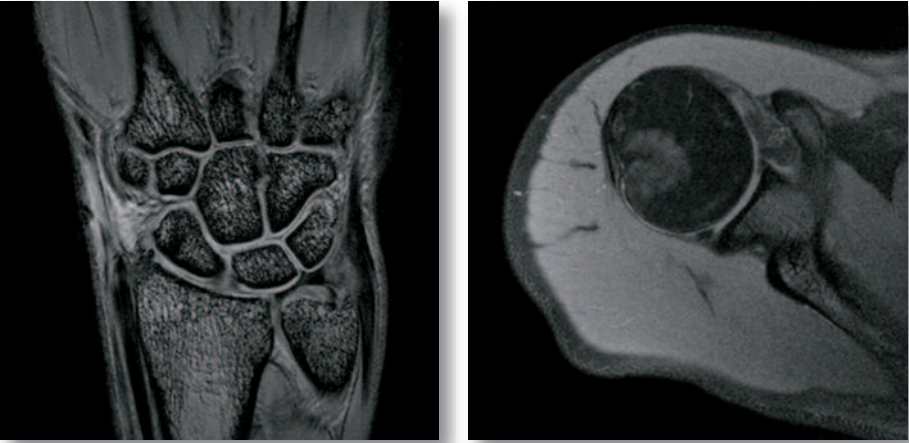
Breast, dynamic TIGRE™  
 Breast TIGRE™, MIP

Orthopedic

Thumb, FS T1 + Contrast  
Thumb T1

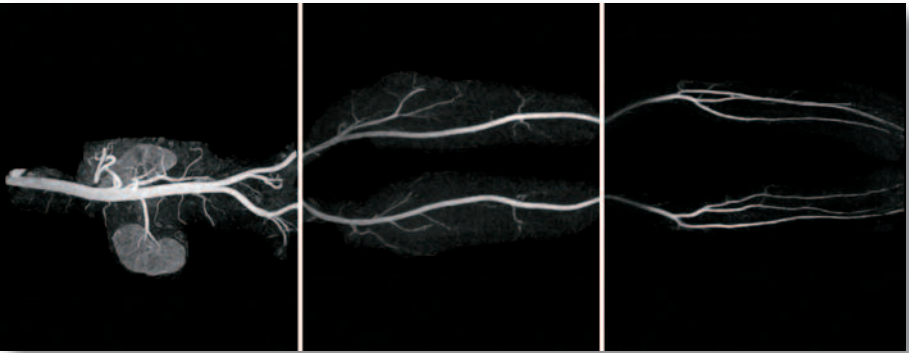


Wrist, 3D GE coronal  
Shoulder PD Fat Sat



Vascular

Contrast Enhanced Vascular  
Angiography



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The ultimate patient MRI - open





## OASIS™ – and you

OASIS™ offers optimal, effortless Workflow so that you can focus on your Patient.

### ORIGIN™ MR Operating Software

Windows XP-based operating software serves as a familiar environment for moving easily through demanding clinical applications and protocols. From patient registration through scan set-up to image archiving, ORIGIN™ mouse-driven operating software is easy to learn and use.

### VERTEX™ Computer System

The OASIS™ computer architecture integrate an advanced scan/reconstruction engine and a dual core CPU configuration. This parallel processing design provides maximum workflow and patient throughput benefits that complement the advantage patient comfort offers in keeping scans on schedule.

### Scan/Reconstruction Engine

The OASIS™ scan reconstruction engine incorporates an FPGA Digital RF receiver and dedicated CPUs for parallel multi-channel reconstruction, resulting in the fastest reconstruction times available on the market (up to 5500 images p/sec).



## Hitachi Medical Systems' Values and Services

Hitachi Medical Systems combines high technology with the Asian tradition of long-term thinking, a high level of consciousness for quality aspects and the subsequent understanding of service.

In building valuable, long-term relationships with our customers, we have achieved an understanding of their different needs and expectations. This has strengthened our commitment to deliver high-quality products which fulfil the requirements of each unique clinical speciality.

We provide a one-to-one service to secure first-class customer satisfaction. The close working relationships among sales, applications and many other key members of Hitachi Medical Systems guarantee appropriate reactions and fast responses.

We always endeavour to go the extra mile. We succeed because we welcome new ideas, products and services.

Services such as our 360° educational programme, the Hitachi Medical Systems Technology Academy, offering tailor-made, added-value services and solutions for professionals in all fields of medicine and other interested groups.



We abide by our corporate philosophy which believes that we have a social responsibility to protect our environment, so that the next generation has a firm grounding on which to build a secure future.