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Ingenia Ambition X

MR Systems

Excel in your daily MR services
helium-free



Excel in your daily MR services, helium-free

Every day, healthcare moves forward with new clinical pathways, innovations and supporting technologies. In radiology, meeting the need for high productivity, an improved patient experience while ensuring excellence in imaging can be daunting. The perception is often that MR represents a trade-off between productivity and image quality. The new Philips Ingenia Ambition offers cutting-edge MR imaging techniques to help you excel clinically every day. Based on its new, revolutionary fully sealed BlueSeal magnet, the solution lets you experience more productive¹ helium-free MR operations.

The Ingenia Ambition delivers superb image quality even for challenging patients, and performs MRI exams up to 50% faster with Compressed SENSE acceleration for all anatomies in both 2D- and 3D scanning². Fast overall exam-time is achieved by simplifying patient handling at the bore with the touchless guided patient setup. Furthermore, the Ingenia Ambition offers an immersive audio-visual experience to calm patients and guide them through MR exams. In a study conducted using our in-bore solution, Herlev Gentofte University Hospital in Denmark managed to reduce the number of rescans by up to 70%³, allowing radiologists to review more patients per day.

¹ Compared to the Ingenia 1.5T ZBO magnet.

² Compared to Philips scans without Compressed SENSE.

³ Compared to the average of the other 5 Philips Ingenia MR scanners without Ambient Experience and In-Bore Connect. Results from case studies are not predictive of results in other cases. Results in other cases may vary.



BlueSeal magnet

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BlueSeal

Ingenia Ambition

Transition your department towards more productive helium-free MR operations¹

Built around the unique, fully sealed BlueSeal magnet, the Ingenia Ambition is designed to simplify your MR installation, reduce lengthy and costly disruptions in your MR services, and help your department transition to productive helium-free operations. Based on a decade of innovation, this revolutionary magnet operates with only seven liters of liquid helium and is fully sealed – freeing up your mind and operations from potential helium complications.

With BlueSeal magnet, Philips aims to help MR facilities overcome potential helium-related issues of classic magnet design and eliminate radiology department's dependency on scarce helium supply. What's more, the system can achieve hours of continuous high-performance scanning and offers a leading field-of-view of 55cm for a wide bore 1.5T system.



Forget about helium

Micro-cooling technology.
Fully sealed.



Designed to facilitate low siting and other construction costs

No vent-pipe. 900 kg lighter¹.



Toward uninterrupted MR operations

Adaptive intelligence.
EasySwitch solutions.



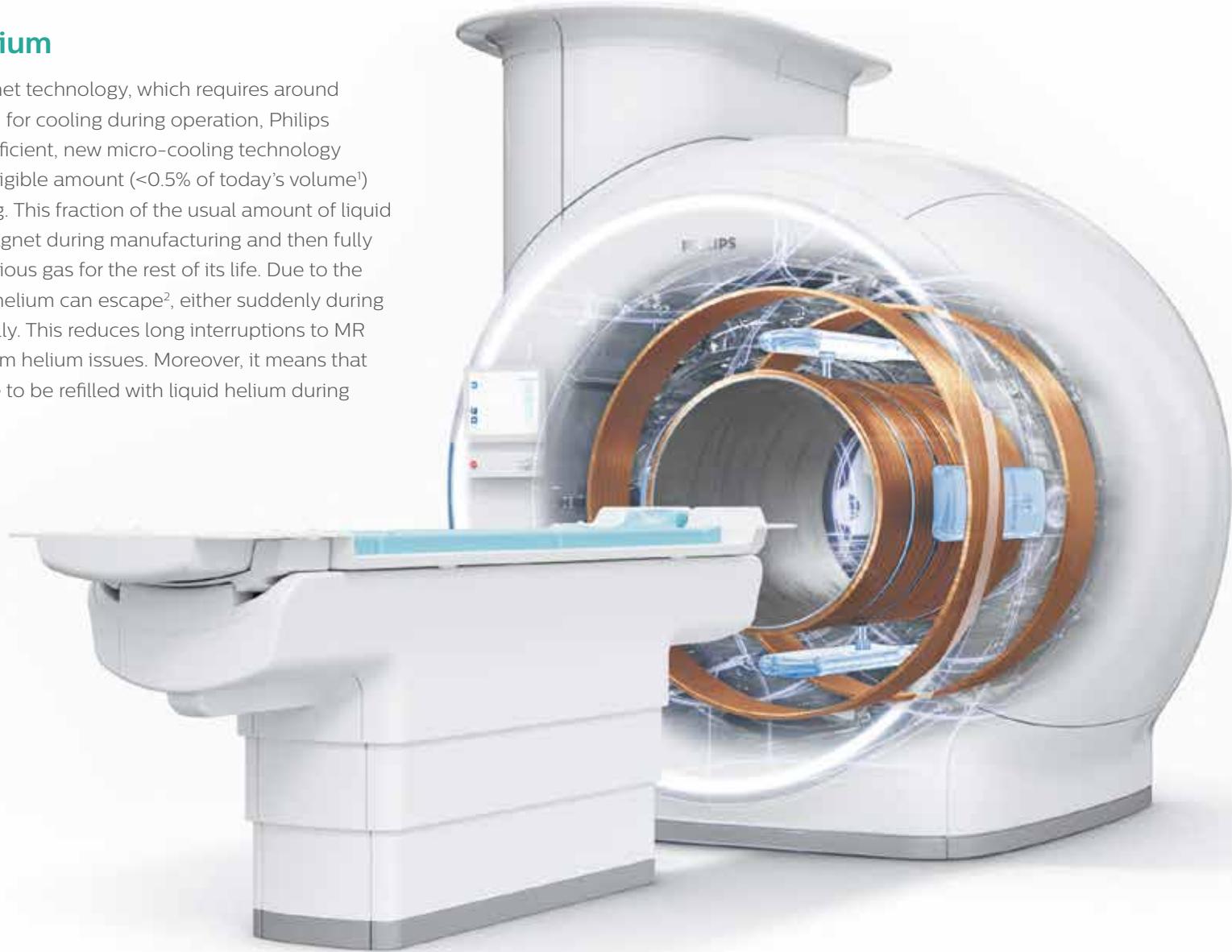
High-performance by design

55cm FOV.
Hours of continuous scanning.

¹ Compared to the Ingenia 1.5T ZBO magnet.

Forget about helium

In contrast to classic magnet technology, which requires around 1500 liters of liquid helium for cooling during operation, Philips BlueSeal uses an highly efficient, new micro-cooling technology which requires only a negligible amount (<0.5% of today's volume¹) of liquid helium for cooling. This fraction of the usual amount of liquid helium is placed in the magnet during manufacturing and then fully sealed, enclosing the precious gas for the rest of its life. Due to the magnet being sealed, no helium can escape², either suddenly during a loss of helium or gradually. This reduces long interruptions to MR services that can result from helium issues. Moreover, it means that the magnet does not have to be refilled with liquid helium during its lifetime.



1 Compared to the Ingenia 1.5T ZBO magnet.

2 Even in the rare case of the magnet becoming unsealed, the negligible amount of helium escaping would not materially affect the oxygen level within the room..

Designed to **facilitate** low siting and other construction costs

BlueSeal magnet is designed as a solution, which could dramatically reduce installation costs. On a classic magnet, long vent pipes must be installed to meet safety requirements and direct helium to an outside vent in case of a magnet quench. Because no helium can escape¹ due to the magnet being sealed, BlueSeal does not need a vent pipe, significantly reducing construction costs. Philips BlueSeal is also lightweight with a minimum siting limitation of 3,700 kg. This is around 900 kg lighter than its predecessor², a decrease in weight that can potentially facilitate easier siting, reduce floor adaptations and further lower construction costs.

Classic magnet



BlueSeal magnet



¹ Even in the rare case of the magnet becoming unsealed, the negligible amount of helium escaping would not materially affect the oxygen level within the room.

² Compared to the Ingenia 1.5T ZBO magnet.



Toward uninterrupted MR operations

With classic MR systems, irrespective of the extreme caution exercised by all MR users, if a metallic item becomes stuck in the magnet¹ requiring a voluntary quench or if the magnet undergoes a sudden involuntary loss of field, this can disrupt a facility's MR services for weeks causing massive revenue loss.

The BlueSeal magnet takes the next step toward uninterrupted, more productive² daily MR operations. Relying on unique digital controllers and 24/7 e-Alerts connectivity³, Philips BlueSeal qualifies as the first magnet driven by adaptive intelligence to support a set of unique service functionalities called EasySwitch.

The EasySwitch solutions aim to minimize unexpected downtime in case of MR operational issue. The BlueSeal's magnetic field can for instance be easily turned off if an item becomes stuck in the bore. Once the problem is resolved, a hospital or Philips personal⁴ can initiate an automated ramp-up and bring the magnet back to field, minimizing operational downtime.

The magnet is also equipped with both a water-cooled compressor and an air-cooled compressor. The air-cooled compressor is used as a back-up when there is no cold water supply. The BlueSeal magnet's adaptive intelligence will switch to the air-cooled compressor and switch back again when the cooling water provision is restored.

High-performance by design

BlueSeal magnet would not be such a game-changer if it only revolutionized MR operations. In parallel, Philips placed a great deal of emphasis on creating a magnet design that delivers exceptional clinical performance. Thanks to highly efficient cooling properties from its micro-cooling system, Ingenia Ambition can achieve hours of high-performance scanning with zero homogeneity change.

Furthermore, the magnet offers a leading homogeneous field-of-view of 55cm and highly linear gradients. The results? A wealth of new clinical capabilities that help you answer the most challenging demands and become the preferred partner within your referral network.

¹ Marketech June 2017 study (across vendors) showed that 69% of U.S respondents and 93% of German respondents experienced at least one event where an item became stuck in the magnet within the last 3 years.

² Compared to the Ingenia 1.5T ZBO magnet.

³ Requires remote connectivity.

⁴ Requires appropriate service contract.

Delivers speed without sacrifice – **every time**

- ▶ Accelerate exams by **up to 50%**
- ▶ Patient setup in under one minute¹
- ▶ Designed for single-operator workflow, with a smart touch
- ▶ Standardization and efficiency across your MR fleet



¹ Based on in-house testing.

² Compared to Philips scans without Compressed SENSE.



A **confident** diagnosis boosted by new clinical capabilities

- ▶ Answer complex clinical questions in neurology
- ▶ Capture MSK information with **up to 60%** higher resolution²
- ▶ Shorten breath holds by **up to 40%** and increase patient compliance²
- ▶ Expand your imaging capabilities in oncology

Dramatically improves **patient experience**

- ▶ Reduce acoustic noise for your patient
- ▶ Guide your patients through the examination
- ▶ Provide an immersive visual experience
- ▶ Increase patient comfort



Delivers speed without sacrifice – **every time**

The Philips Compressed SENSE unique acceleration technique allows you to speed up the entire MRI examination without compromise, every time.

Thanks to innovative sensing technology and in-room guidance, Ingenia Ambition delivers new workflow capabilities to minimize interactions with the system, freeing you up to care for your patient and drives fast exams.

The system is designed to be less dependent on user expertise and can be handled by a single operator more efficiently¹, helping you address your staffing challenges. With Ingenia Ambition, we aim to help you scan more patients per hour

Accelerate exams by **up to 50%**

Leveraging our long-standing leadership in scanning speed (i.e. SENSE), Philips now presents a breakthrough in productivity: Compressed SENSE accelerates 2D- and 3D scans by up to 50% with virtually equivalent image quality¹. As a result, Ingenia Ambition does not only accelerates sequences, but the entire patient exam. You can now consider adding patient slots to your daily schedule, and your staff has more time to focus on what matters most: enhancing patient care. This new paradigm in productivity applies to all anatomies and anatomical contrasts in both 3D and 2D scans. It's speed done right, every time.

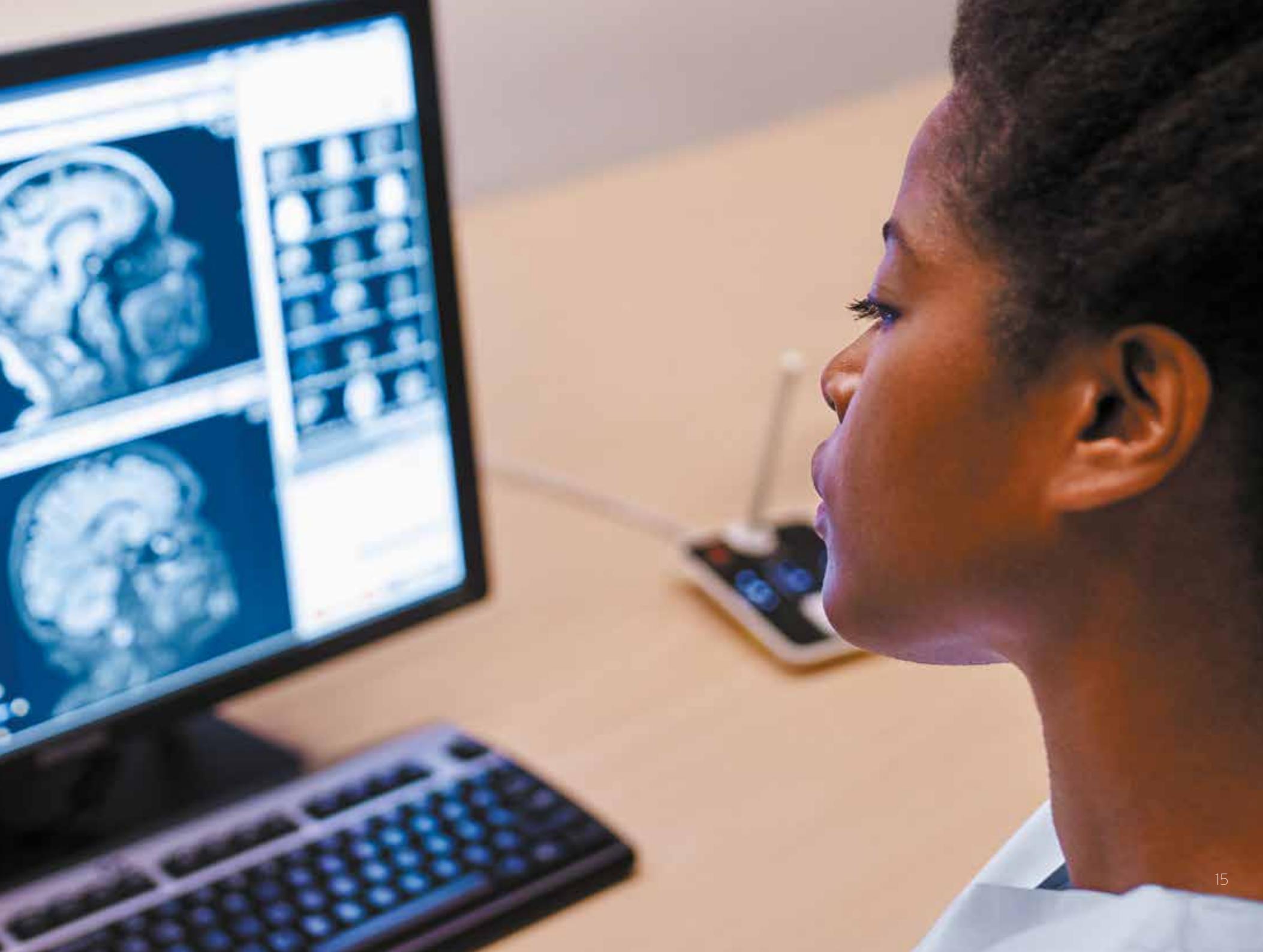
“Our goal is to reduce scan time, but we want the same image quality as before.,

Sabine Sartoretti, MD, Head of Neuroradiology, Institute of Radiology and Nuclear Medicine, Kantonsspital Winterthur, Switzerland

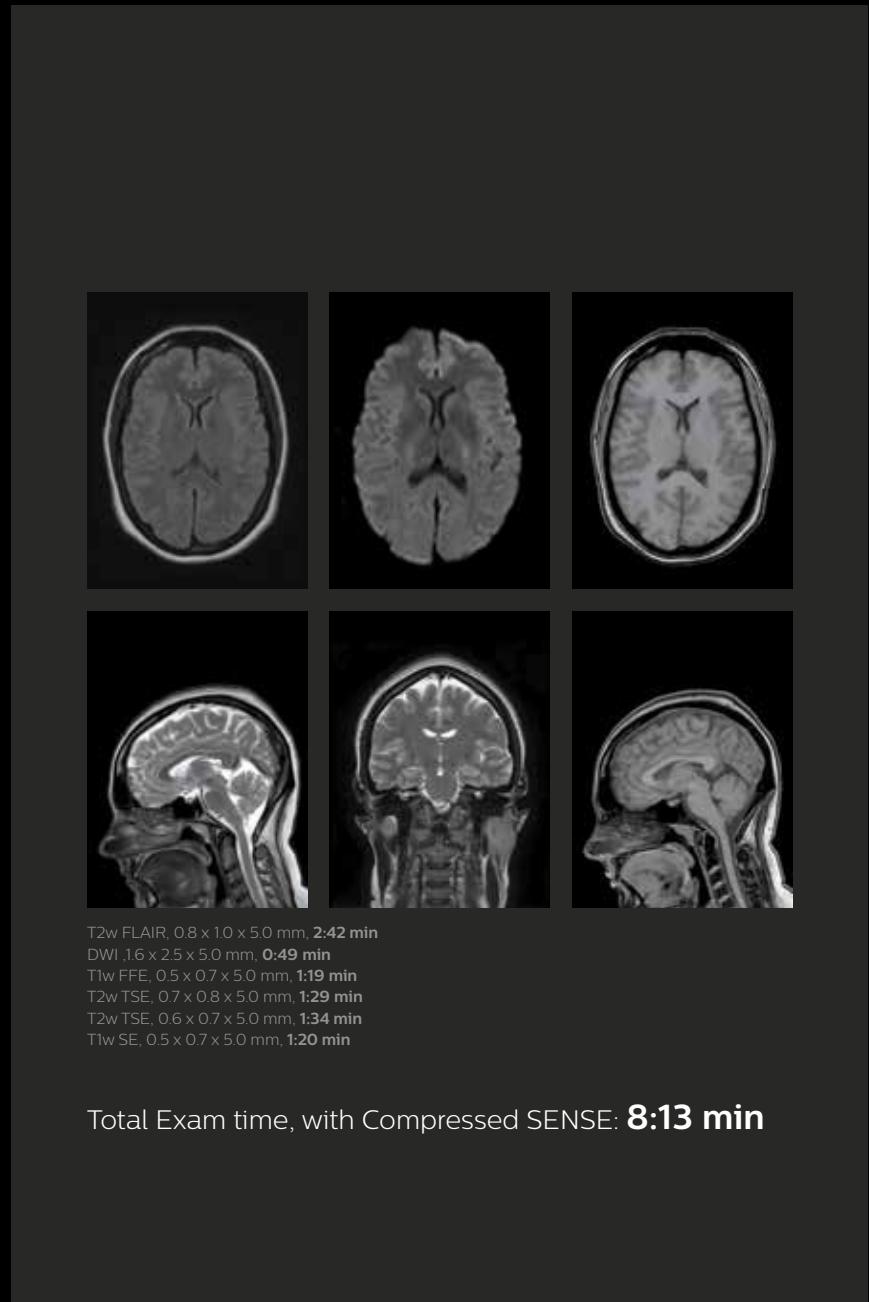
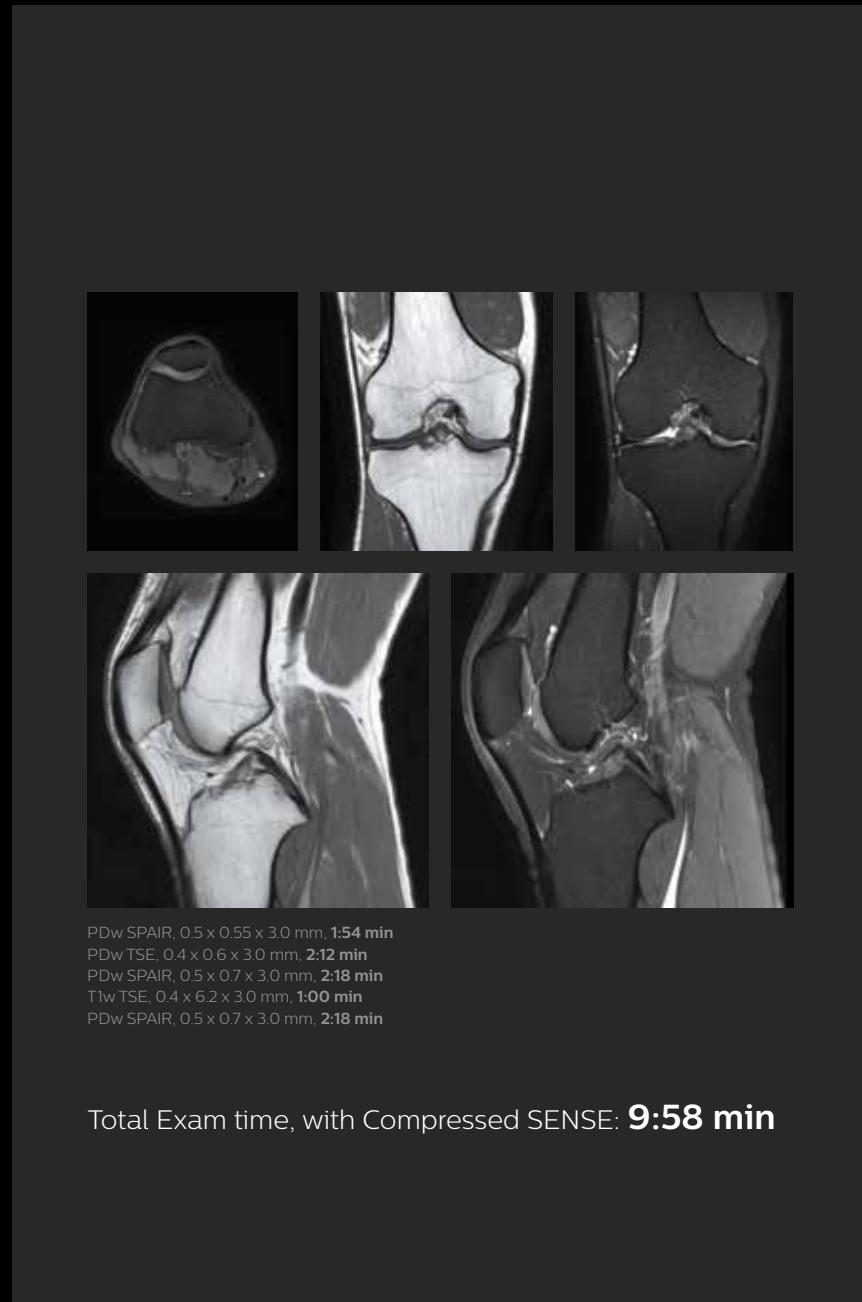
“Compressed SENSE increases the examination efficiency thanks to a shorter scan time with no change in image quality.,

Sachi Fukushima, RT, Kurashiki Central Hospital, Japan

1 Compared to Philips scans without Compressed SENSE.



Complete MSK and brain exams up to 50% faster with virtually equal image quality¹



Faster 2D and 3D scans with virtually equal image quality¹



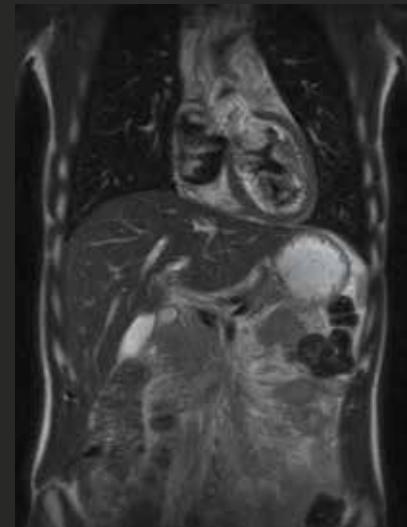
2D T2W TSE
with Compressed SENSE
 $0.8 \times 0.8 \times 3.0 \text{ mm}$, **1:54 min**



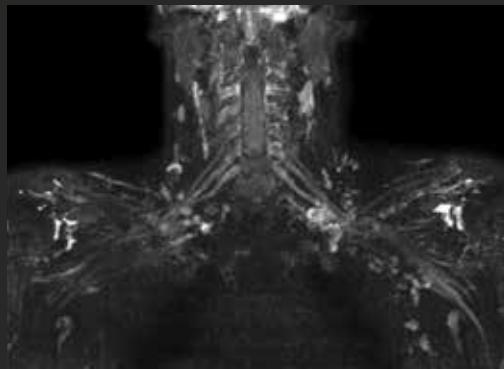
2D T1W TSE
with Compressed SENSE
 $0.7 \times 0.9 \times 3.0 \text{ mm}$, **2:22 min**



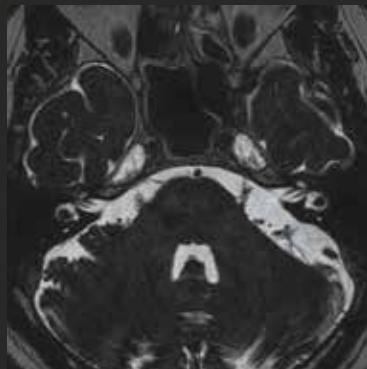
2D PDw TSE
With Compressed SENSE
 $0.3 \times 0.5 \times 3.0 \text{ mm}$, **2:12 min**



2D T2w TSE – large FOV
with Compressed SENSE
 $1.4 \times 1.6 \times 6.0 \text{ mm}$, **14.6 sec**



3D NerveVIEW
with Compressed SENSE
 $1.1 \times 1.3 \times 1.2 \text{ mm}$, **2:58 min**

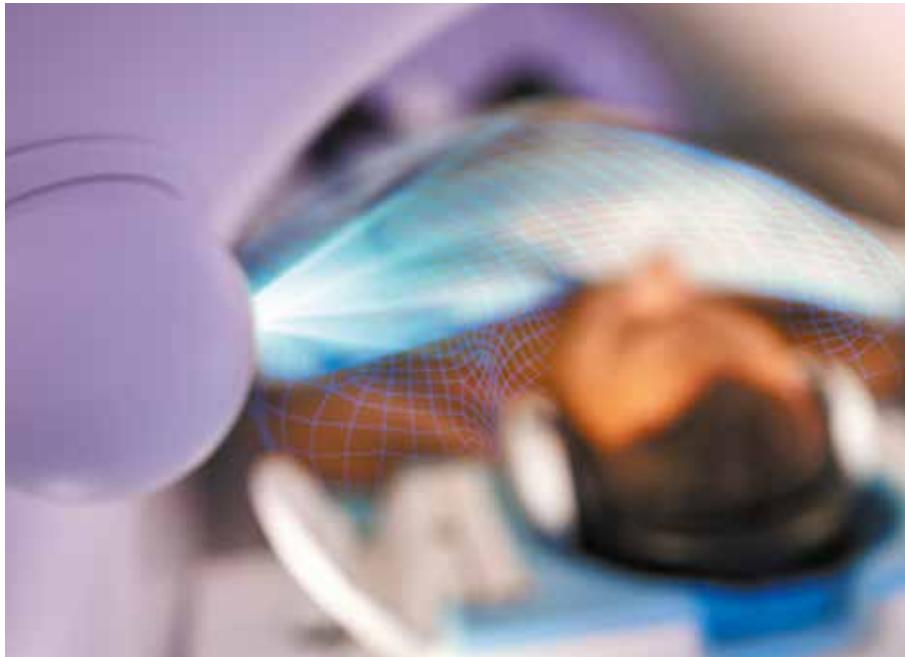


3D T2W TSE
with Compressed SENSE
 $0.5 \times 0.6 \times 0.6 \text{ mm}$, **2:23 min**



bTFE – LVOT
with Compressed SENSE
 $1.6 \times 2.0 \times 8.0 \text{ mm}$, **7.6 sec**

¹ Compared to examinations without Compressed SENSE. Results from case studies are not predictive of results in other cases. Results in other cases may vary.



Patient setup in **under one minute**¹

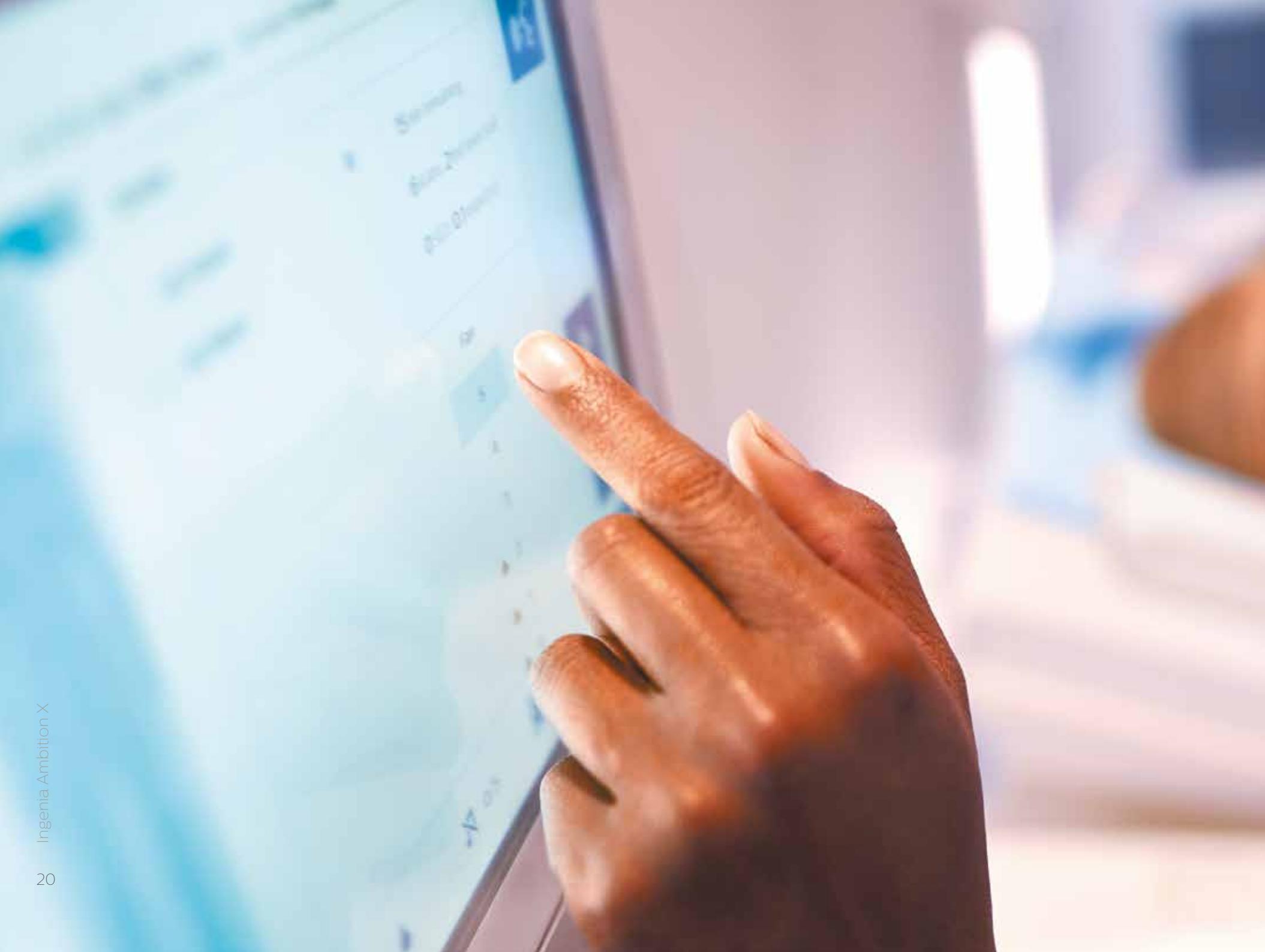
VitalScreen offers guidance and insights on the details of the current patient study. This 12-inch interactive touchscreen provides information on exam duration, which coil to use, patient positioning, physiology signal captors (VCG) and – if applicable – contrast usage and breathhold guidance.

Moreover, the operator no longer needs to set up an old-fashioned respiratory belt, but receives a continuous and robust respiratory signal without any interaction via VitalEye. This revolution in patient sensing helps you to keep a caring eye on your patient and provides superior image quality², even for challenging cases, thanks to touchless patient sensing. The quality of the physiology signal is significantly better than with a belt-based approach thanks to automatic detection of breathing.

1 Based on in-house testing.

2 Compared to belt-based signal.





Designed for single-operator workflow, with a smart touch

Running an efficient MR department means constant multi-tasking by the technologists. To organize the schedule and provide excellent patient care, technologists must do a whole lot more than 'just' scanning. For instance, they have to juggle positioning the current patient, debriefing the previous patient and instructing the next patient. And they need to prepare contrast, refill supplies, perform administrative tasks, consult with the radiologist, and much more besides.

The Ingenia Ambition is designed to make system operation by a single person more time efficient¹, reducing superfluous activities and allowing the operator to focus where it matters. From the moment your patient is set up through to the time the images are ready for reading, the Ingenia Ambition offers the opportunity to run your examinations in one smart touch. With the new VitalScreen, you can easily adjust your imaging strategies and start your exam from the patient side with a single touch. When you close the door of the exam room, Ingenia Ambition starts to scan instantaneously using SmartStart. From there, SmartExam² adaptive intelligence is planning and running the ExamCard protocol in the background. Finally, SmartLine automatically post-processes your images and transfers them to the PACS, ready-for-reading. This is how simple an exam can be on Ingenia Ambition.

¹ Compared to the Ingenia 1.5T ZBO magnet.

² SmartExam is not available to patients with MR Conditional Implants.

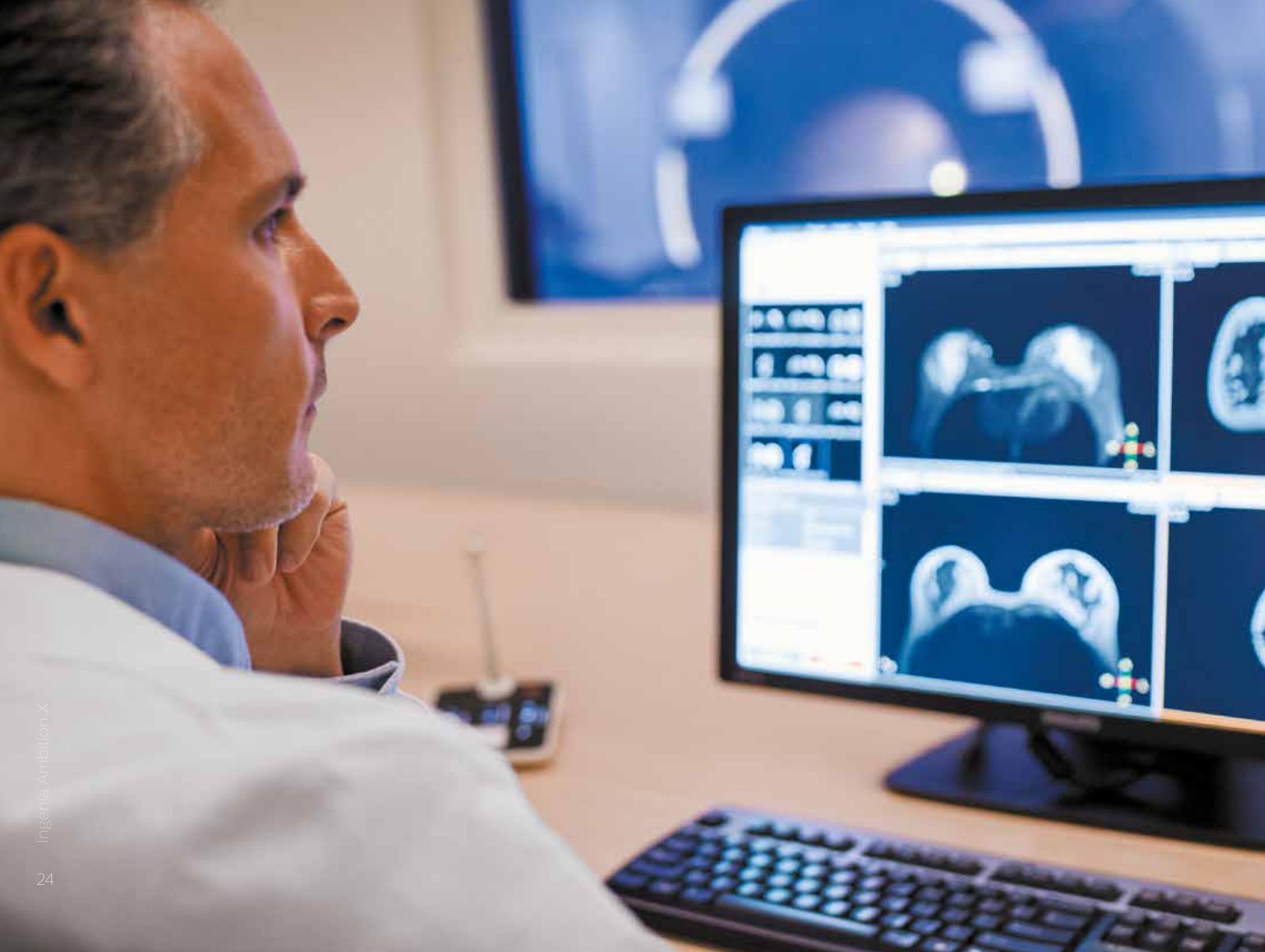
Standardization and efficiency across your MR fleet

As the number of MRI systems in radiology departments is increasing, you need a range of different tools to reduce waste, enhance efficiency and experience the economies of scale you expect. PerformanceBridge Protocol Manager¹ lets you manage ExamCard protocols and distribute them to all the MRI systems in the fleet. Part of the PerformanceBridge fleet of solutions, this breakthrough in protocol management leverages a wealth of utilization data, drill-down functionalities, and PerformanceBridge Advisor to drive meaningful performance improvements.

In today's imaging departments, patient scheduling can also become complex and lead to inefficiencies as clinical capabilities vary from system to system. The MR AppLicense solutions¹ standardize and simplify the availability of software applications so they can be shared and managed across the fleet.

1 Conditions apply. Selected countries only.





A **confident** diagnosis boosted by new clinical capabilities

We have equipped the Ingenia Ambition with a wealth of new clinical capabilities – with the aim of helping you deliver consistently high-quality diagnostic outcomes, even for complex cases, while maintaining short and more predictable time slots. We foresee this as a path to confident diagnosis, letting you tackle existing, new and future clinical demands, while addressing the current upswing in patient volume experienced by radiology departments. Ingenia Ambition is designed to help you become the preferred partner within your referral network.

Answer complex clinical questions in neurology

Neurological disorders represent a heavy burden in today's society¹ and many radiologists still consider neuro indications such as Alzheimer, neuropathy or vascular diseases to be challenging². The Ingenia Ambition provides high-end quality neuro imaging at remarkable speed for diagnostic clarity and treatment guidance.

3D BrainVIEW and SpineVIEW let you acquire high-resolution data in multiple directions in one scan, including oblique. Both techniques are based on a 3D isotropic imaging method that can be boosted by Compressed SENSE to increase image resolution by up to 40% in the same scan time³. This helps you enhance confidence when diagnosing lesions.

The exploration of the brachial and lumbar plexus is also considered to be challenging. 3D NerveVIEW improves visualization of nerves by providing you with spectacular high resolution T2w acquisition with reduced signal from fat and vessels⁴. Beyond this subset of clinical capabilities, the Ingenia Ambition is fully equipped with a set of novel imaging and visualization strategies that may empower you to resolve complex neuro questions with more certainty.

1 Neurological Disorders: Public Health Challenges. WHO, 2006.

2 TMTG Market Survey 2016.

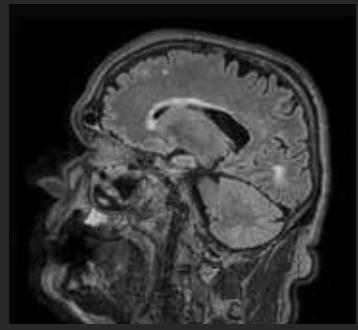
3 Compared to Philips scans without Compressed SENSE.

4 By use of MSDE black blood pre-pulse with STIR/SPAIR, compared to our STIR/SPAIR sequence without MSDE pre-pulse.

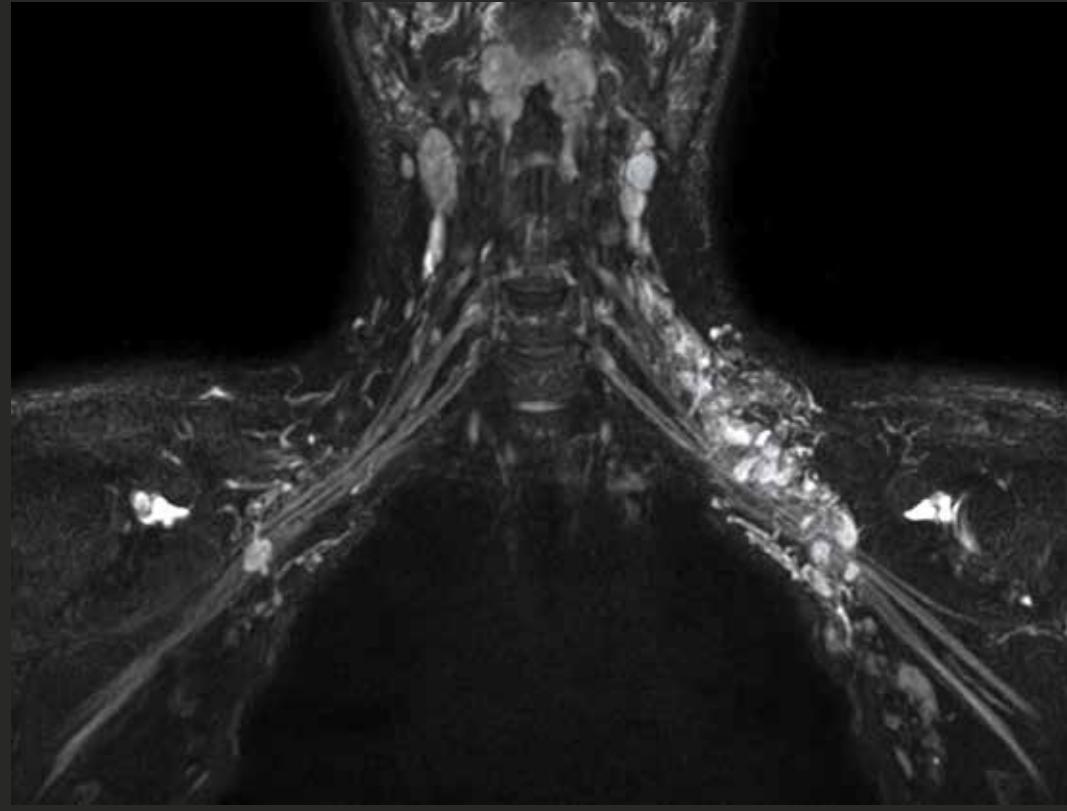
High-end quality neuro imaging at remarkable speed



3D VIEW T1W TSE
with Compressed SENSE
1.0 x 1.0 x 1.0 mm, **3:25 min**

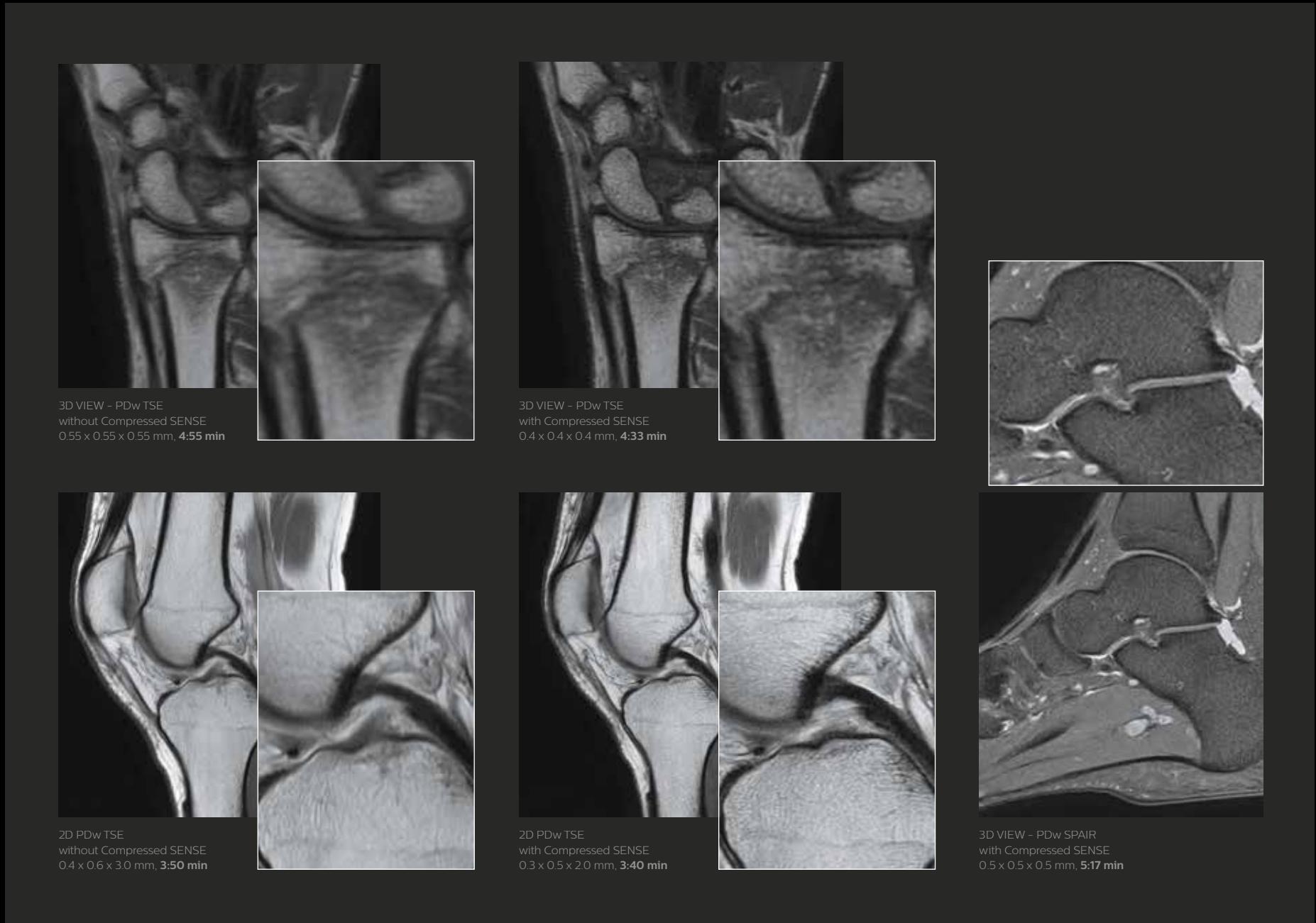


3D VIEW T2W FLAIR
with Compressed SENSE
1.2 x 1.2 x 1.2 mm, **3:07 min**



3D NerveVIEW
with Compressed SENSE
1.2 x 1.2 x 1.2 mm, **4:17 min**

Up to 60% higher resolution in the same scan time¹



¹ Compared to examinations without Compressed SENSE. Results from case studies are not predictive of results in other cases. Results in other cases may vary.

Capture a wealth of structural and physiological information in MSK – with up to 60% higher resolution¹

Leveraging dStream digital broadband architecture and Compressed SENSE MSK, the Ingenia Ambition delivers superb visualization of soft tissue and bone, helping you capture fine bone structure, cartilage and meniscal details. You can now acquire 3D submillimeter (0.7 mm or less) isotropic images in less than 5 minutes with excellent SNR, meeting 3.0T resolution standards on a 1.5T scanner.

Say yes to patients with MR conditional implants

Patients with MR conditional implants are often denied MRI exams. This is because it is not always easy for clinicians to implement the implant limits on the MR scanner. This can reduce diagnostic options for this growing population of patients and cut off a stream of potential referrals to your institution.

To simplify your scanning process for patients with MR conditional implants, ScanWise Implant² software provides step-by-step guidance to enter the condition values of the implant manufacturer. Your MR system then automatically applies these values for the entire examination. ScanWise Implant² empowers you to serve this growing patient population with confidence, helping to increase your referrals.

¹ Compared to Philips scans without Compressed SENSE.

² Only for use with MR Safe or MR Conditional Implants by strictly following the Instructions for Use.

Shorten breath holds by up to 40% and increase patient compliance in abdominal and cardiac imaging

Abdominal and cardiac imaging can be challenging for patients with respiratory conditions or pediatric patients, because of the multiple and sometimes lengthy breath holds. Philips Compressed SENSE enables up to 40% faster scan time, resulting in breath holds down to just 5s, with virtually equivalent image quality for cardiac and abdominal imaging¹.

Combined with the visual and auditory breath hold guidance available on our In-bore experience, Ingenia Ambition offers a unique solution to support comfortable abdominal and cardiac imaging for all your patients, especially pediatrics and geriatrics. This has potential to enhance the patient experience and compliance throughout the whole MR examination.

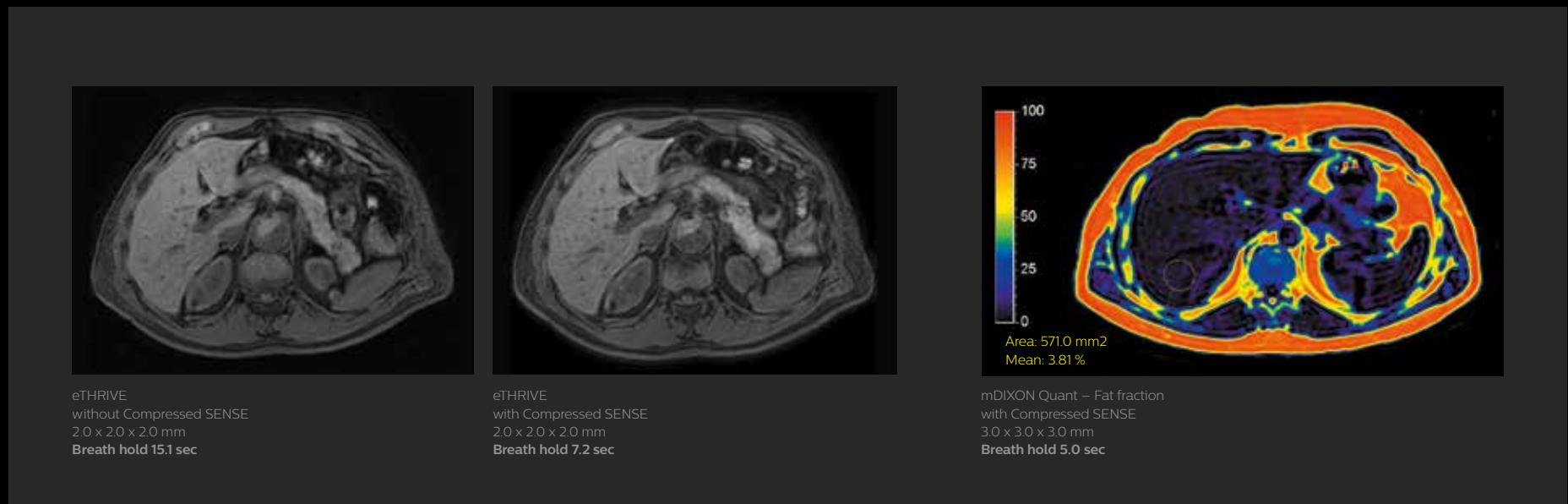
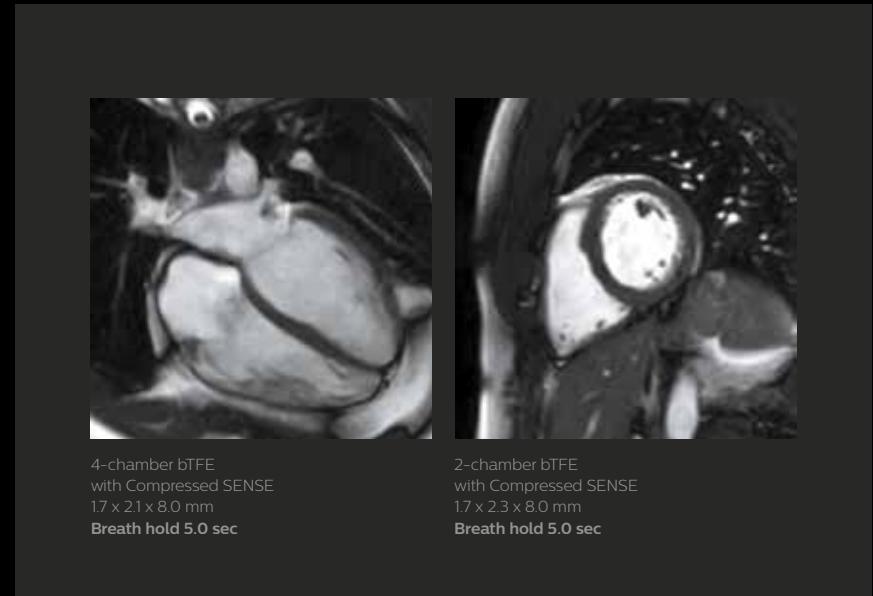


¹ Compared to Philips scans without Compressed SENSE.

Up to 40% shorter breath holds¹

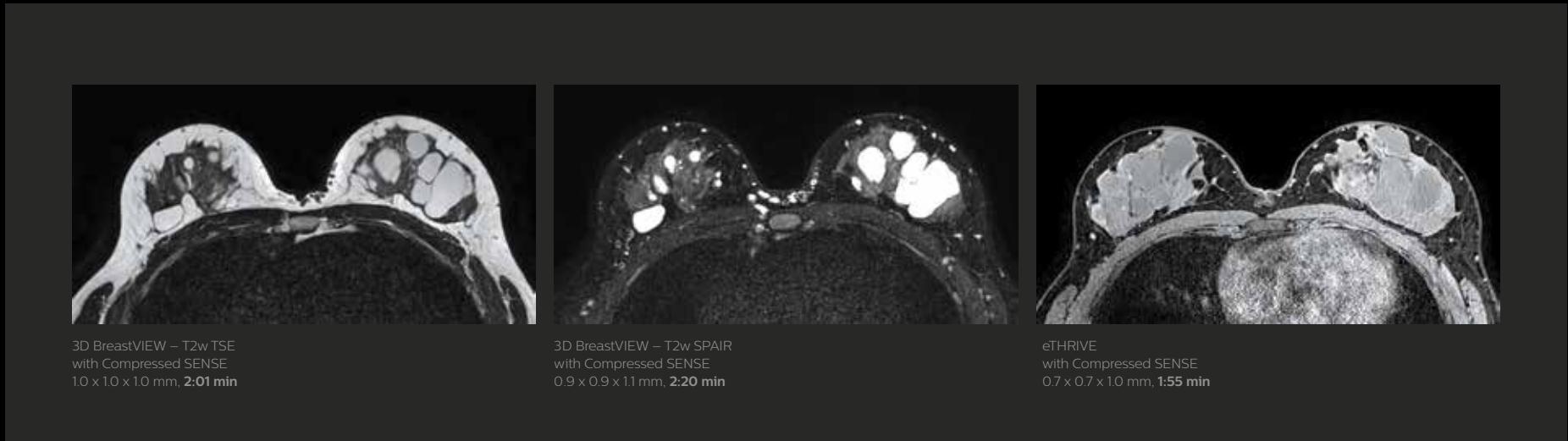


5 sec breath holds



¹ Compared to examinations without Compressed SENSE. Results from case studies are not predictive of results in other cases. Results in other cases may vary.

Up to 25% higher resolution¹



Generate additional high b-value cDWI images without extra scans



Enhance clinical confidence in breast and pelvic imaging – **up to 25% higher resolution in the same scan time¹**

After lung cancer, breast and prostate cancers have the second largest incidence in women and men respectively. With the aging population, their incidence is expected to grow even further. Ingenia Ambition can enhance your confidence, offering exceptional MR imaging for characterization, staging and therapy monitoring in breast and prostate cancer patients.

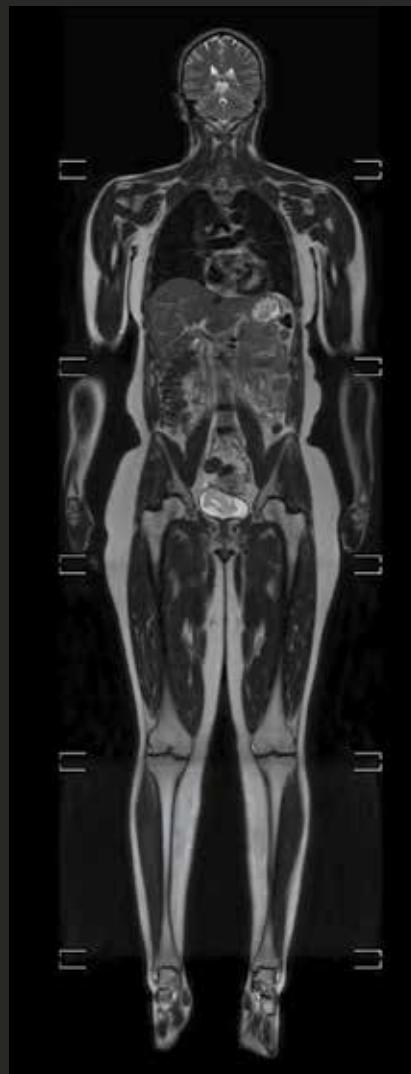
With Compressed SENSE, you can obtain up to 25% higher resolution in similar scan time in breast and pelvic imaging, which can potentially help detect smaller lesions and enable better delineation of lesions¹. The MR Advanced Diffusion Analysis solution brings the information you extract from your diffusion scans to the next level. In addition to generating computed high b-value DWI images without extra scans, it also opens the possibility to extract information on tissue perfusion with IVIM analysis and tissue microstructural complexity with Kurtosis analysis. Moreover, the IntelliSpace Portal enables you to standardize your prostate and breast reporting, respectively with PI-RADS v2 and BI-RADS.

Expand your imaging capabilities in oncology with whole-body MRI **under 30 minutes**

Clinical demand for whole-body MRI in myeloma patients is continuously growing, supported for instance by the recent guidance from the National Institute for Health and Care Excellence (NICE)¹. Breast and prostate cancers are other important indications where staging and therapy monitoring with whole-body MR makes sense. This creates a new opportunity for you to expand your imaging services for your referrals. The Ingenia Ambition provides high-quality whole-body ExamCard protocols under 30 minutes, drawing on our unique Compressed SENSE, mDIXON XD, and DWIBS whole-body diffusion techniques.

The BlueSeal magnet's large field-of-view and highly linear gradients support switching to fast, high-quality coronal whole-body DWIBS, a game changer for increasing referrals. Compressed SENSE enables up to 50% acceleration with virtually equivalent image quality², completed by other workflow simplification tools for easy multi-station pasting like MobiView and MobiFlex.

Whole-body MRI from head to toes under 30 minutes



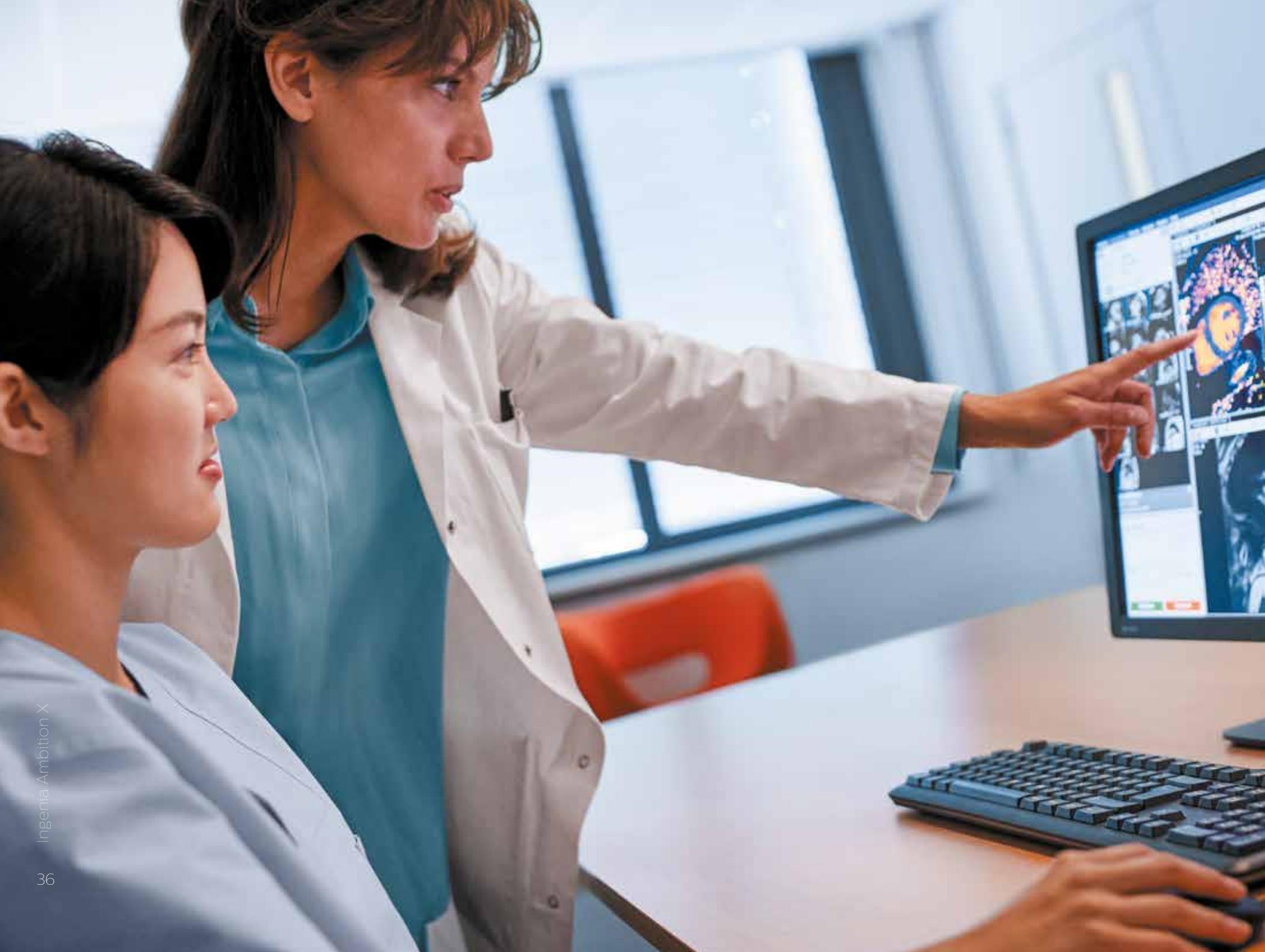
T2w TSE
1.2 x 1.5 x 6.0 mm
24.4 sec /stack



mDIXON XD FFE
2.0 x 2.0 x 2.0 mm
10.4 sec /stack



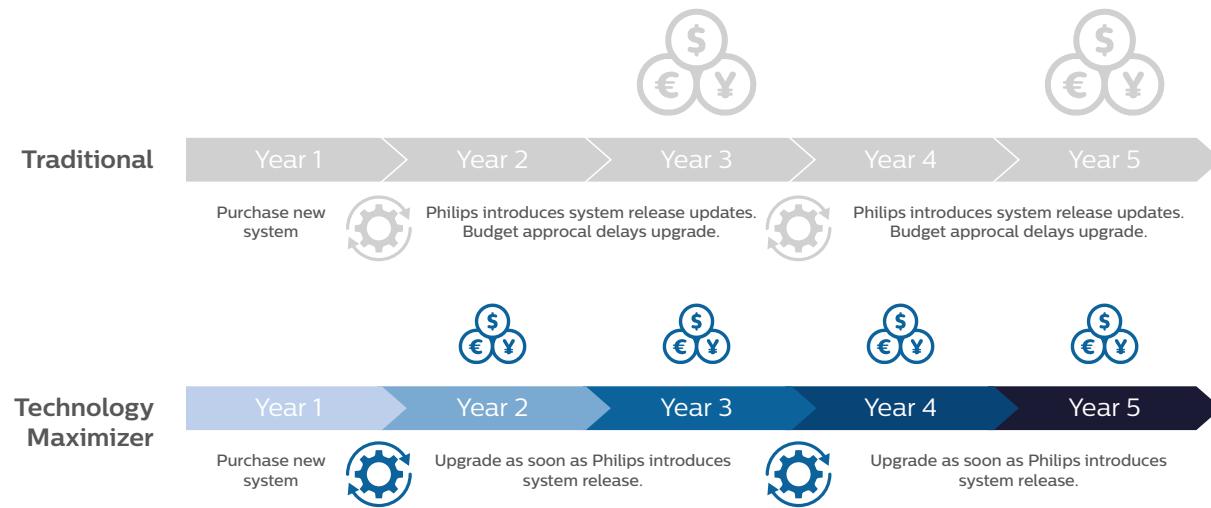
DWIBS
4.8 x 5.1 x 6.0 mm
1:57 min /stack



Boost your clinical capabilities with proactive upgrades

To maintain your Ingenia Ambition, keep it up-to-date and protected from obsolescence, opt for our Technology Maximizer program. This is designed to maximize the performance of your imaging equipment throughout its lifetime through proactive upgrades, keeping your MRI up to date.

Furthermore, with Technology Maximizer Pro, your MRI system will automatically receive the latest specialty applications for your favorite clinical domain(s). Your MRI system will not only run the clinical applications that you have selected at the time of your purchase, but also be eligible for future clinical applications introduced in subsequent years – and all for a predictable fee¹.



¹ Requires service contract for 5 year after installation. Selected countries only.



Dramatically improves **patient experience**

Your patients are at the heart of Ingenia Ambition – which includes an MR experience that enhances comfort and compliance. With up to 80% acoustic noise reduction¹, voice guidance, immersive in-bore visuals and a comfortable table, your patients are made to feel at ease, resulting in smooth, fast exams.

Reduce acoustic noise for your patient

The Philips unique ComforTone solution draws on our extensive experience to achieve up to 80% reduction in acoustic noise¹ with similar image quality and contrast within the same time slot. You can use ComforTone in routine exams such as brain, spine and MSK but can also apply it with high gradient settings. Thanks to our ready-to-use ExamCard protocols, ComforTone is simple to implement and use, requiring just a few clicks to get started.

Guide your patients through the examination

AutoVoice is a fully integrated and automated solution that guides your patients through the MR examination. It indicates scan duration, announces table movements and offers breath hold guidance, helping you enhance patient comfort. The automated breath hold commands are synchronized with the patient's respiratory cycle and can be selected to fit patient conditions, such as expiration versus inspiration. AutoVoice is available in several languages and customizable for local pronunciation or for a staff member's voice if desired. You can also adapt texts and settings to meet individual operator needs and export your customized preferences to other Philips MR scanners.

Provide an **immersive visual experience**

Philips takes a patient-centric approach to MRI exams. Designed to offer a relaxing sensory experience, our unique Ambient Experience provides positive distractions for patients by incorporating dynamic lighting, projection and sound, contributing to a positive, engaging environment to benefit quality of care.

From the moment a patient is moved into the scanner (the point at which people report the most stress), through completion of the scan, the Philips In-Bore Connect solution can help patients to relax, follow directions and minimize motion. In a study, conducted using our in-bore solution, Herlev Gentofte University Hospital in Denmark managed to reduce the number of rescans by up to 70%². A case study at Radiologisches Zentrum am Kaufhof, Lübeck, Germany showed that the number of patients needing sedation was reduced by 80%³.

¹ Compared to scanning without ComforTone.

² Compared to the average of the other 5 Philips Ingenia MR scanners without Ambient Experience and In-Bore Connect.

³ The tranquilizer referred to is a valium-based derivative called "Diazepam". Results from case studies are not predictive of results in other cases. Results in other cases may vary.

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Increase patient comfort

Ingenia Ambition offers a comfortable table experience thanks to the ComfortPlus mattress. On average, 90% of patients in severe discomfort find it easy to lie still on the ComfortPlus mattress. Overall comfort for this group of patients can increase by up to 36%. The clinical images obtained using the comfort mattress are of a similarly high quality to those acquired with a standard table mattress.

Protect patient-data from cyber-attacks

Philips recognizes the importance of securing your medical devices and protecting your patient data. With Ingenia Ambition, Philips has applied the principle of the defense-in-depth strategy to its MR Release 5 systems, implementing a security strategy that comprises multiple layers: Firewall, operating system (OS) and application hardening, malware protection, authorization user management and authentication, audit logging and patient data encryption. To underline the security concept on the Philips Ingenia Ambition, it received an Authority to Operate (ATO) from the U.S. Defense Health Agency (DHA) based on the compliance requirements and risk assessments as required through the Risk Management Framework (RMF) process.

¹ Compared to using a standard mattress.



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