PHILIPS

Ingenia Ambition

MR Systems

The new reality in MR

Enjoy helium-free MR operations that support speed, comfort and clinical confidence

The new reality in MR

Enjoy helium-free MR operations that support speed, comfort and clinical confidence

In today's world, you may feel more pressure and uncertainty affecting your MR services. In radiology, meeting the need for high productivity, an improved patient experience while ensuring excellence in imaging can be daunting. By freeing up your MR operations from potential helium complications, Philips Ingenia Ambition can help you unlock your capacity to provide outstanding services to referring physicians and patients, reliably and productively. This can lead to a better patient and staff experience. Just think what your new reality in MR could be.

The Ingenia Ambition delivers superb image quality even for challenging patients, and performs MRI exams up to 3 times faster with Philips SmartSpeed acceleration for all anatomies in both 2D- and 3D scanning[1].
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%[2], allowing radiologists to review more patients per day.

1 Compared to SENSE imaging.
2 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

Never a better time to switch to helium-free MR operations 5

Ingenia Ambition

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1 Compared to SENSE imaging.

Never a better time to switch to **helium-free MR operations**

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

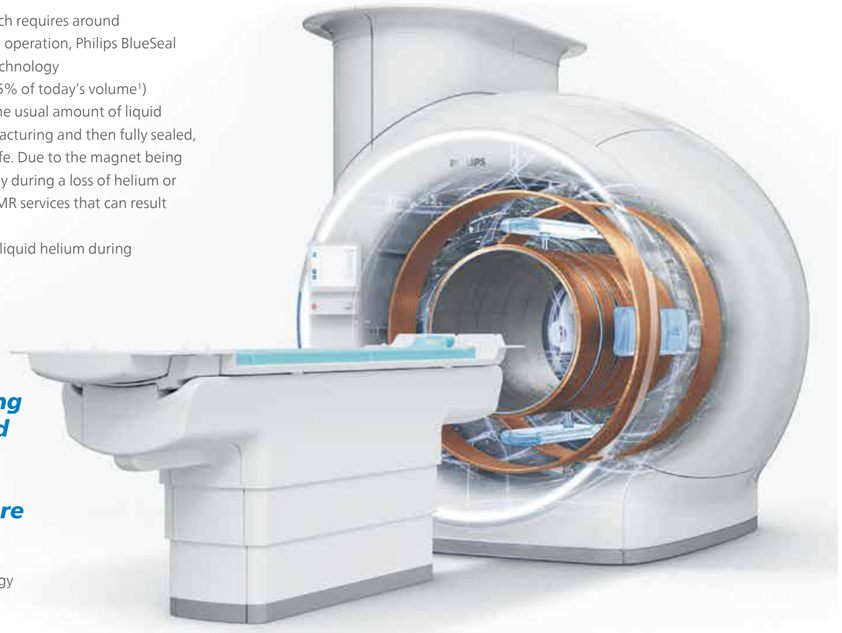
EASY SITING

TOWARDS UNINTERRUPTED MR

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 volume[1]) 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 escape[2], 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.



> ***"We won't have any problems of refilling during the machine's lifetime and we can forget about the helium. This will save us money and help us be more environmentally friendly***

Dr. Maria del Mar Travieso, Head of Radiology Department, Hospitales San Roque, Spain

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..

Easy siting, **lower 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 escape[1] 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 predecessor[2], 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.

Resolve small incidents in just a few hours

< 6 hours*

Magnetic item becomes stuck in the bore

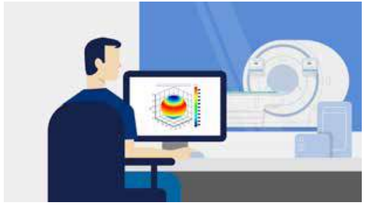
Easily discharge the magnet, from behind the MR console, by hospital personnel

Remove item from bore and inspect the bore for possible damage

1.5 - 4 hours*

Easily re-energize the magnet, from behind the MR console, by hospital personnel

Continue patient planning and scanning



Philips Service engineer inspects the magnet homogeneity, at a time that is convenient for you

* Can vary based on system and site conditions

Towards **uninterrupted MR operations**

Despite the extreme caution exercised by MR users, 54% of imaging facilities experienced 1 or 2 magnetic items becoming attached to the MRI magnet within the last 3 years[1].

With classic MR systems, when a magnetic item becomes stuck in the magnet you need to call the service engineer to ramp down the magnet, or perform a voluntary quench. This disrupts a facility's MR services and causes massive revenue loss. For MR users, almost 30% report their MR machine still not to be operational after 3 days[1]. The required refill of Helium also costs a lot of money.

The BlueSeal magnet takes the next step toward uninterrupted, more productive[2] daily MR operations. Relying on unique digital controllers and 24/7 e-Alerts connectivity[3], Philips BlueSeal qualifies as the first magnet driven by adaptive intelligence to support a set of unique service functionalities called EasySwitch.

The EasySwitch solutions are designed to minimize unexpected downtime and avoid major disruptions to your radiology practice. With EasySwitch, if a magnetic item becomes stuck in the bore, the magnet can easily be discharged and re-energized by hospital personnel from behind the MR console. This means small incidents can be resolved in just a few hours. In addition, EasySwitch allows your BlueSeal magnet to be pro-actively discharged to prepare for a natural disaster or other emergency situations.

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.

> ***"In the event of a major disaster like an earthquake we can get these machines up and running again relatively quickly making them excellent from the perspective of hospital risk management too."***
>
> **Prof. Hashimoto**, Tokai University Hospital, Japan

1 Marketech June 2017 study (across vendors). 2 Compared to the Ingenia 1.5T ZBO magnet. 3 Requires remote connectivity.

Patient-centered productivity

- Reduce operator workload
- Guided exam set-up
- Automated workflow
- Superior image quality

Up to 3 times faster MRI exams[2]

- With no loss in image quality
- Add extra patient slots in your schedule
- Easily fit in unplanned patients
- Reduce overtime

A **confident** diagnosis

- Answer complex clinical questions
- Achieve **up to 65%**[2] higher resolution
- Shorten breath holds by **up to 40%**
- Confidence for MR Conditional implants

Dramatically improve **patient experience**

- Provide an immersive visual experience
- Guide your patients through the examination
- Comfort in every detail
- Reduce acoustic noise

Enhance the value of your MR investment

- Prevent issues before they occur
- Protect your MR equipment
- Standardize your MR fleet
- Tailored financing solutions

1 Based on in-house testing.
2 Compared to SENSE imaging.

Patient-centered productivity

With a growth in the elderly population and constant demands to do more with less, the pressure on healthcare providers is immense. This pressure is also evident in radiology departments and imaging centers. The increasing use of MR to diagnose a variety of conditions and illnesses has led to demands for greater efficiency, even as departments try to manage a shortage of MR operators and variability in staff expertise. Too often, it seems that productivity is at odds with giving patients the time and attention they desire.

With Smart Workflow, you can achieve high productivity while enabling your staff to focus on patients. It reduces and simplifies the number of steps needed in a conventional MR exam workflow, using technology to guide and coach where required, and automate where possible. An end-to-end workflow solution that directly boosts efficiency through reduced variability and task automation, while supporting a better patient and staff experience, resulting in patient-centered productivity.

> *“The entire workflow is smooth: Patient positioning and setup; launching the scan as soon as we leave the exam room; the intuitive touchscreen on the gantry; Touchless patient sensing... All of these things are much better than on our old system.”*

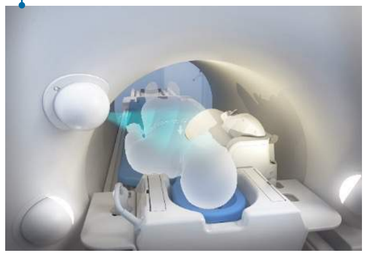
Laura Barlow, RTMR
MRI Technologist
Supervisor at the University of British Columbia

Smart Workflow
in the exam room

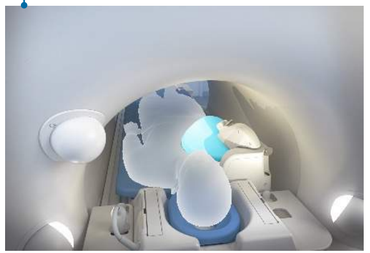
Guided exam set-up
Coaching and visual guidance are provided at the front of the magnet façade

Auto patient centering
Region of interest is automatically placed in the iso-center of the magnet

AI



Touchless respiratory-triggering
Patient’s breathing is detected without any operator interaction



Auto coil element selection
Optimal elements are selected automatically based on the anatomy planning

In-room exam start
Exam start can be initiated with a single touch of at the patient’s side

* According to the definition of AI from the EU High-Level Expert Group.

“We don’t have to manually direct the patient to breathing and not breathing. We can go ahead and let the machine do the work of the breathing instructions while we continue our planning of the exam.”

Carlos Avila, RT
Technologist at Miami Cardiac & Vascular Institute

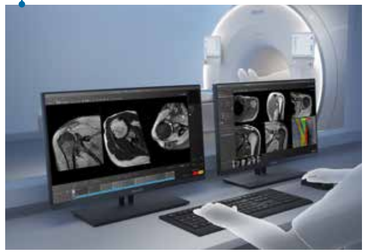
Smart Workflow
in the control room

Confidence for MR Conditional implants

Step-by-step guidance to enter the condition values as specified by the implant manufacturer

Automated planning, scanning and processing

Fully automated geometry planning, coil element selection and execution of complete MR exams

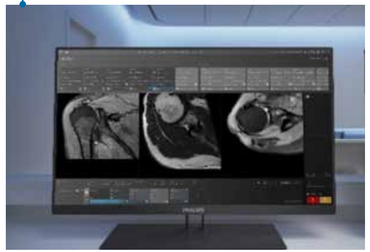


Up to 3 times faster imaging[1]

Breakthrough acceleration technique delivering image quality and speed without compromise

Automated patient coaching

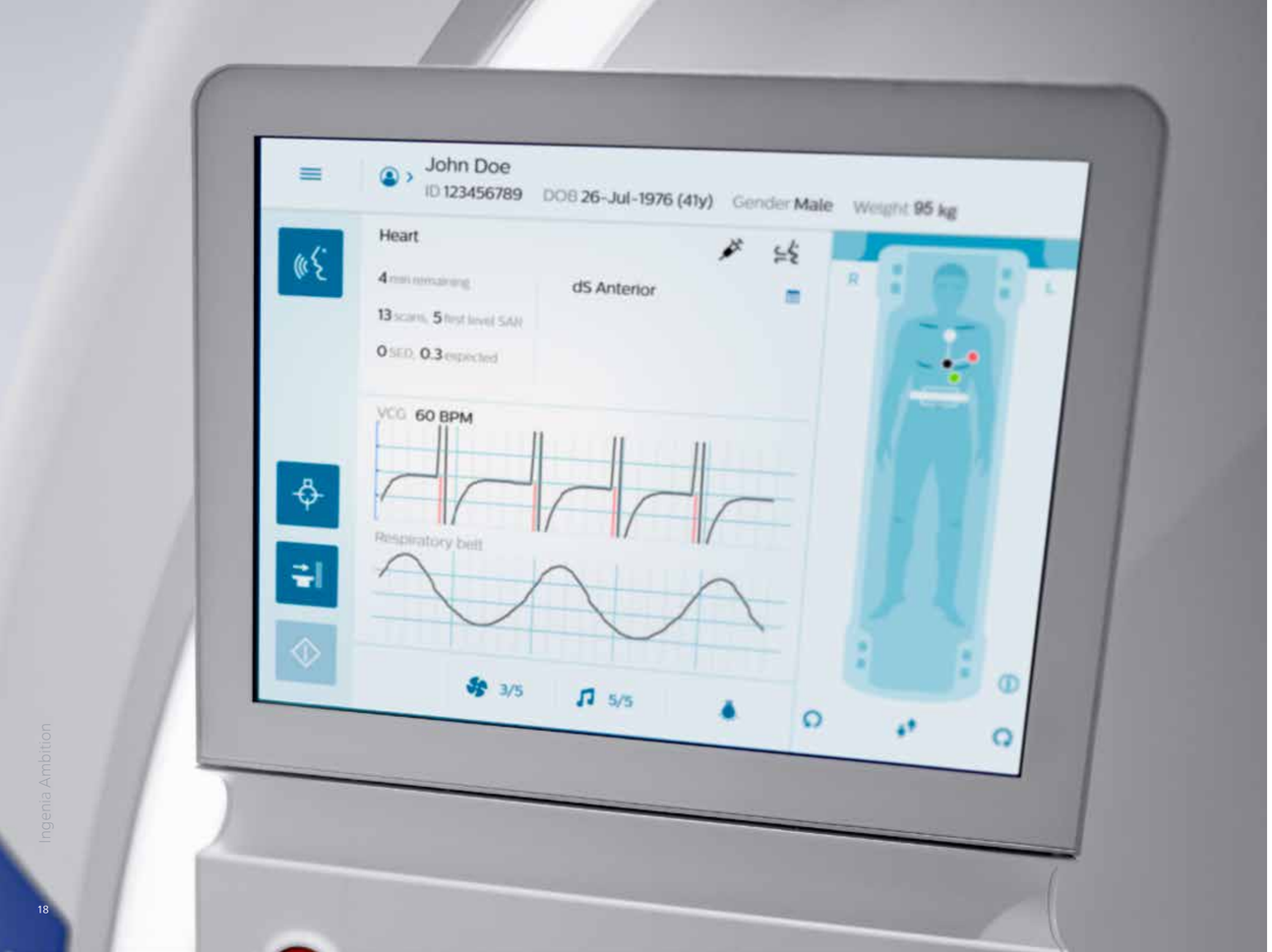
Patients are guided via announcements of scan duration, table movements and breath hold instructions



Plan your day in advance

Dashboard to plan examinations before patient arrival, allowing you to stay on schedule

1 Compared to SENSE imaging.
* According to the definition of AI from the EU High-Level Expert Group.



A virtual coach **guiding exam set-up**

Increase staff confidence and speed up patient set-up through automated real-time guidance and insights on the details of the current patient study. Achieve high quality results, independent from staff's expertise level. VitalScreen provides guidance at your staff's fingertips. Two 12-inch interactive touchscreens on the scanner provide coaching and visual guidance on recommended patient position, study laterality, coil and accessory placement. Moreover, feedback is provided on important exam details, including physiology signals (both VCG and respiratory) and – if applicable- contrast usage and breath- hold guidance.

Put your patients at ease, while manual steps in the workflow are automated

Free up your staff from monotonous, manual steps and enable them to focus on the patient through automatic placement of the region of interest in the scanner iso-center. The manual use of a laser light visor for iso-center positioning has become obsolete. VitalScreen automatically detects landmarks for selected anatomies and places the region of interest in the iso-center of the magnet. Once the patient is positioned on the table, only the push of a button is required to position the patient in the center of the bore.

Increase productivity and free up time for other tasks

Start exams as soon as possible, eliminating extra steps for your staff and decreasing the time the patient has to spent in the magnet, resulting in a more positive patient experience. VitalScreen allows staff to initiate the exam with a single touch of a button at the patient side. The exam starts immediately after the operator has closed the exam room door, so no time is wasted.

Continuous and robust respiratory signal providing **superior image quality**

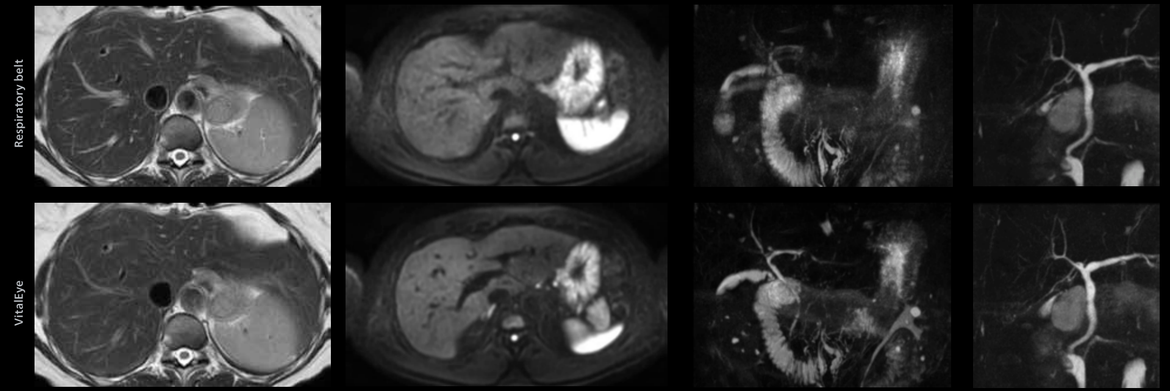
Relieve your staff from the burden of positioning – and re-positioning – a respiratory belt. Positioning a belt shifts the operator's focus from the patient to the technology at a moment when it is critical that the patient is comfortable and reassured. Enjoy optical sensing and AI[1] to automatically detect patient respiratory patterns. VitalEye touchless patient sensing provides a fast detection of patient's breathing without any operator interaction. With VitalEye, the technologist no longer needs to set up an old-fashioned respiratory belt but receives a continuous and robust respiratory signal without any interaction. This revolution in touchless patient sensing helps your staff to keep a caring eye on your patient. The quality of the physiology signal detected by VitalEye is better than a belt-based approach providing superior image quality, for a broad range of patient sizes.

> ***"It always works, and it's always there."***
>
> **MR operator**, University of Bonn, Germany

1 AI stands for Artificial Intelligence, according to the definition of AI from the EU High-Level Expert Group.

Touchless patient sensing

Superior image quality with VitalEye[1], consistently



1 Compared to Philips belt-based signal. Requires an unobstructed line of sight Results from case studies are not predictive of results in other cases. Results in other cases may vary.

Departmental workflow in the control room

MR Workspace is the key to help alleviate technologists' workload so they can focus beyond just the monitor and on what really matters: the patient. Designed with deep knowledge of day-to-day MR operations, MR Workspace supports efficiency and staff satisfaction in the control room through intelligence, guidance and ease of use. Technologists can prepare exams before patients arrive and aim to achieve consistent quality regardless of experience, by using Protocol Assistant, an AI[1]-driven solution that learns your protocol preferences and suggests the most appropriate ones based on clinical indication.

Advanced visualization includes step-by-step guidance so technologists can perform advanced visualization to obtain more[2] diagnostic information. Thanks to dual screen set-up technologists never lose sight of their current patient, even while parallel tasking. This allows to finish post-processing without toggling between screens and without delaying the next patient.

The intuitive interface, large display of clinical images and essential parameter reveal contribute to outstanding ease-of-use. In addition, MR Workspace helps to keep schedules on track and makes parallel tasking easy so technologists can focus on the current patient.

1 According to the definition of AI from the EU High-Level Expert Group.

2 The addition of step-by-step guidance and automation of routine and complex post-processing applications can now be performed by the technologist on the console, saved via bookmark functionality, and handed off to the radiologist. which reduces time to results.

With MR workspace we aim to support you to:

- Increase schedule efficiency
- Deliver consistent image quality
- Improve staff experience
- Reduce training time
- Provide faster time to results

Know what is coming your way every day

- Full visibility and control over daily schedule
- Examination preparation before patient arrival
- Alerts on patient conditions and schedule changes

Count on image quality. Every, single time

- Guided and automated workflow
- AI[1] Protocol Assistant suggests the most used protocol
- Real-time quality control

Give your staff what they need to do the job right

- 80% of examination planning is fully automated
- 70% of the display is dedicated to presenting clinical images in crisp detail
- Harmonized user experience with IntelliSpace Portal Advanced Visualization

Fast forward from learning to doing

- Integrated AI[1] assistance, task guidance, and automation
- Step by step coaching towards AV analysis
- 50% reduction in on-screen parameters

Be known for fast results

- Results sent to PACS in 30% less time[2]
- Automated AV segmentation, calculation, and map generation
- Comprehensive set of integrated high-end and routine AV applications

1 According to the definition of AI from the EU High-Level Expert Group.
2 Compared to R5 software.

Up to 3 times faster MRI exams with no loss in image quality[1]

Time is one of the most precious commodities you have in your MR department.

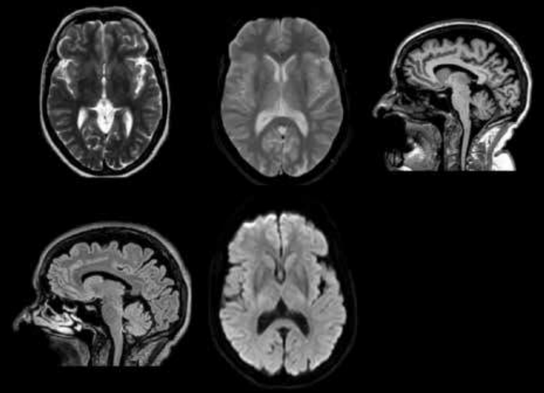
What if we told you there was a way to recover time you have been losing during your MR examinations? And use the time you do have more wisely? Imagine how that could help you make better use of your scarce resources and better meet the demands of referring physicians.

That's exactly what our acceleration technologies such as Philips SmartSpeed can do for your MR department.
SmartSpeed AI can speed up scan time nearly 3 times with no loss in image quality[1], free up time to improve your patient experience. You can use the time gained to scan more patients and reduce the cost per scan, to add unplanned patients to the schedule or free up time to improve your patient experience. It can also provide higher image quality[1] to enhance diagnostic confidence.

1 Compared to SENSE imaging.

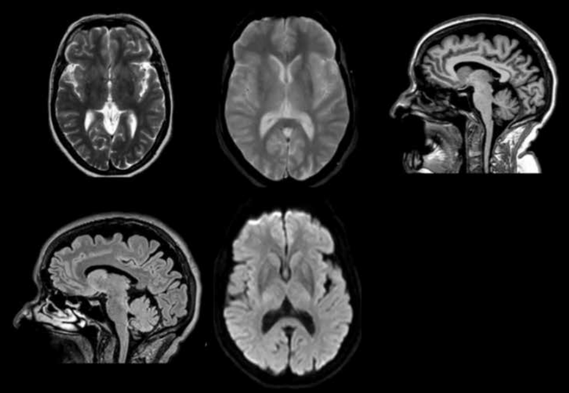
Up to 3 times faster MRI exams[1]

With no loss in image quality



Total scan time **16:32 min**

2D T2W TSE	0.6 x 0.75 x 5.0 mm	2:31 min
2D T2W FFE	0.9 x 1.1 x 5.0 mm	3:32 min
3D T1W TFE	1.1 mm	5:11 min
3D BrainView FLAIR	1.2 mm ISO	4:43 min
DWI b1000	1.5 x 2 x 5 mm	35 secs

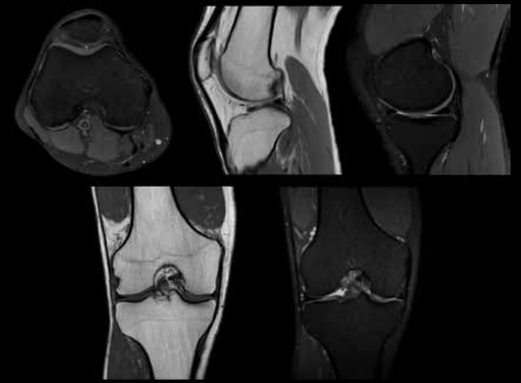


Total scan time **8:32 min** - SmartSpeed

2D T2W TSE	0.6 x 0.75 x 5.0 mm	1:25 min
2D T2W FFE	0.9 x 1.1 x 5.0 mm	2:00 min
3D T1W TFE	1.1 mm ISO	2:08 mm
3D BrainView FLAIR	1.2 mm ISO	2:24 min
DWI b1000	1.5 x 2 x 5 mm	35 secs

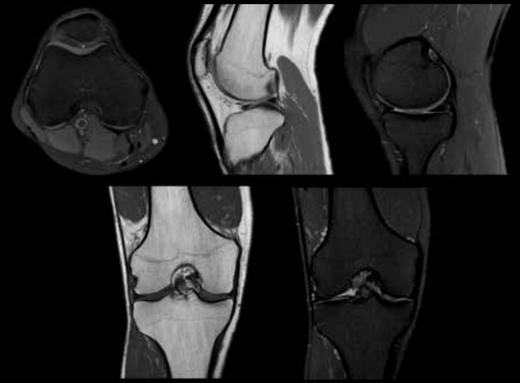
1 Compared to SENSE imaging.
Results from case studies are not predictive of results in other cases. Results in other cases may vary.

Knee ExamCard



Total Exam time **16:54 min**

PDw FatSat	0.5 x 0.5 x 3.0 mm	2:54 min
PDw TSE	0.4 x 0.6 x 3.0 mm	3:45 min
PDw FatSat	0.5 x 0.7 x 3.0 mm	4:33 min
T1w TSE	0.4 x 0.6 x 3.0 mm	2:55 min
PDw FatSat	0.5 x 0.7 x 3.0 mm	4:33 min



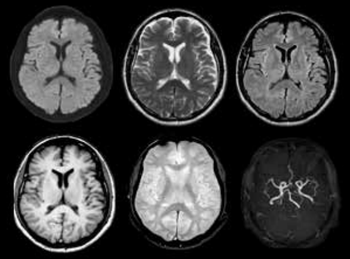
Total Exam time **9:58 min** Compressed SENSE

PDw FatSat	0.5 x 0.5 x 3.0 mm	1:54 min	34%
PDw TSE	0.4 x 0.6 x 3.0 mm	2:12 min	41%
PDw FatSat	0.5 x 0.7 x 3.0 mm	2:18 min	49%
T1w TSE	0.4 x 0.6 x 3.0 mm	1:00 min	66%
PDw FatSat	0.5 x 0.7 x 3.0 mm	2:18 min	49%

Results from case studies are not predictive of results in other cases. Results in other cases may vary.

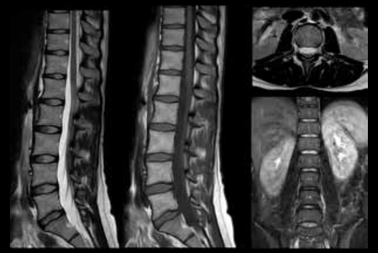
Fast push-button exams

Brain **2:57min** SmartSpeed



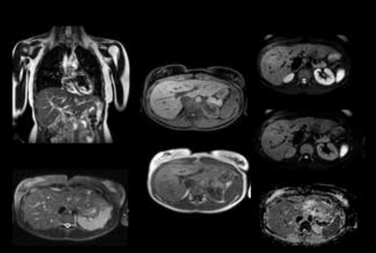
Ax DWI b1000	0.9 x 0.9 x 5.0 mm	0:14 min
Ax T2w TSE	0.8 x 1.1 x 5.0 mm	0:17 min
Ax T2w FLAIR	0.9 x 1.3 x 5.0 mm	0:42 min
Ax T1w FFE	0.9 x 0.9 x 5.0 mm	0:18 min
Ax T2* FFE	0.9 x 1.2 x 5.0 mm	0:23 min
MRA Inflow	0.6 x 1.1 x 0.7 mm	1:01 min

L-Spine **4:19min** Compressed SENSE



Sag T2w TSE	0.9 x 1.2 x 4.0 mm	1:04 min
Sag T1w TSE	0.9 x 1.2 x 4.0 mm	0:57 min
Ax T2w TSE	0.7 x 1.0 x 4.0 mm	1:00 min
Cor T2w SPAIR	1.0 x 1.5 x 4.0 mm	1:17 min

Liver[1] **6:40min** Compressed SENSE

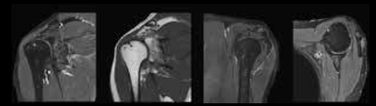


Cor T2w TSE	1.4 x 1.6 x 6.0 mm	0:15 min
Ax T2w SPAIR	1.4 x 1.6 x 6.0 mm	0:14 min
Ax T1w mDIXON All	1.3 x 1.7 x 5.0 mm	0:18 min
Ax T1w mDIXON Dyn	2.0 x 2.0 x 4.0 mm	0:16 min
Ax DWI	2.5 x 3.5 x 6.0 mm	0:54 min

1 SmartExam is not available for liver examination. Results from case studies are not predictive of results in other cases. Results in other cases may vary.

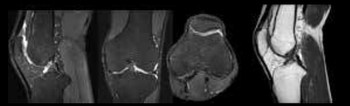
Enabled by SmartSpeed, Compressed SENSE and Smart Workflow

Shoulder **6:19min** SmartSpeed



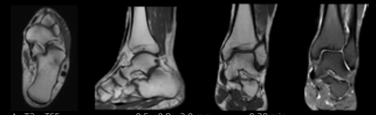
Cor PDw TSE FatSat	0.5 x 0.5 x 3.5 mm	1:34 min
Cor T1w TSE	0.4 x 0.4 x 3.0 mm	1:27 min
Sag PDw TSE FatSat	0.6 x 0.6 x 3.5 mm	1:30 min
Ax PDw TSE FatSat	0.5 x 0.5 x 3.5 mm	1:48 min

Knee **4:59min** SmartSpeed



Sag 3D PDw TSE	0.7 x 0.7 x 0.7 mm	3:44 min
Sag T1w TSE	0.5 x 0.5 x 3.5 mm	1:15 min

Ankle[1] **3:19min** Compressed SENSE



Ax T2w TSE	0.5 x 0.8 x 3.0 mm	0:39 min
Sag PDw mDIXON XD	0.5 x 0.9 x 3.0 mm	1:11 min
Cor T1w TSE	0.4 x 0.6 x 3.0 mm	0:35 min
Cor PDw SPAIR	0.5 x 0.8 x 3.0 mm	0:54 min

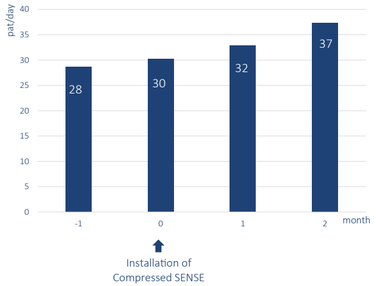
> ***The fast SmartTouch protocols are important to maintain high levels of productivity and clinical quality, independently of the technologist operating the system.***
>
> Dr. Baumann, Radiologie am St. Joseph-Stift, Bremen, Germany

1 SmartExam is not available for ankle examination. Results from case studies are not predictive of results in other cases. Results in other cases may vary.

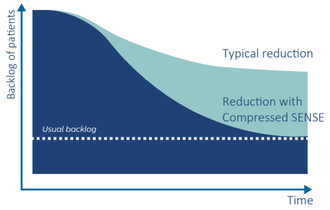
Add extra patient slots to your daily MRI schedule

Many radiology departments and imaging centers are looking for ways to increase the utilization of their MR equipment to meet the rising demand for MRI services. A full MRI exam performed with Compressed SENSE, for example, can save minutes compared to a conventional MRI exam. This could free up one or two extra exam slots in your daily schedule, which can result in much higher productivity and shorter waitlists without adding more operator hours.

Scan >5 patients/day extra within same scanning hours



Allowing you to reduce your backlog faster



Radiologie Dr Wagner in Gottingen , Germany can accommodate > 5 more patients per day, within the same scanning hours, after the introduction of Compressed SENSE.

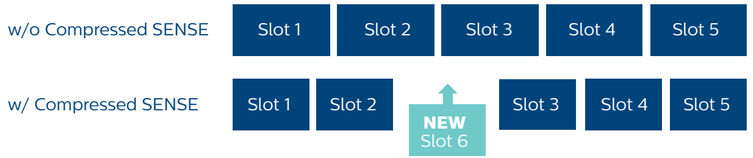
Results from case studies are not predictive of results in other cases. Results in other cases may vary.

Easily fit in unplanned patients

Do unscheduled patients disrupt your daily schedule and put extra stress on your staff? With Compressed SENSE you can create a buffer to easily handle emergency cases or urgent patients that are referred on the same day. This extra capacity can help you serve patients and referring physicians faster and make daily workflow go smoother.

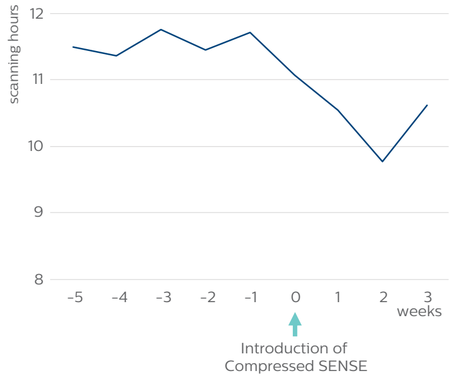
> ***“We can now provide a more flexible and faster MRI service to our patients and referring physicians. For instance, when a referring physician is requesting it, we can now quite smoothly insert an additional MRI examination without previous appointment on the same day.“***
>
> **Hideki Koyasu**, MD, Neurosurgical Clinic in Kanagawa, Japan

Easily fit in unplanned patients



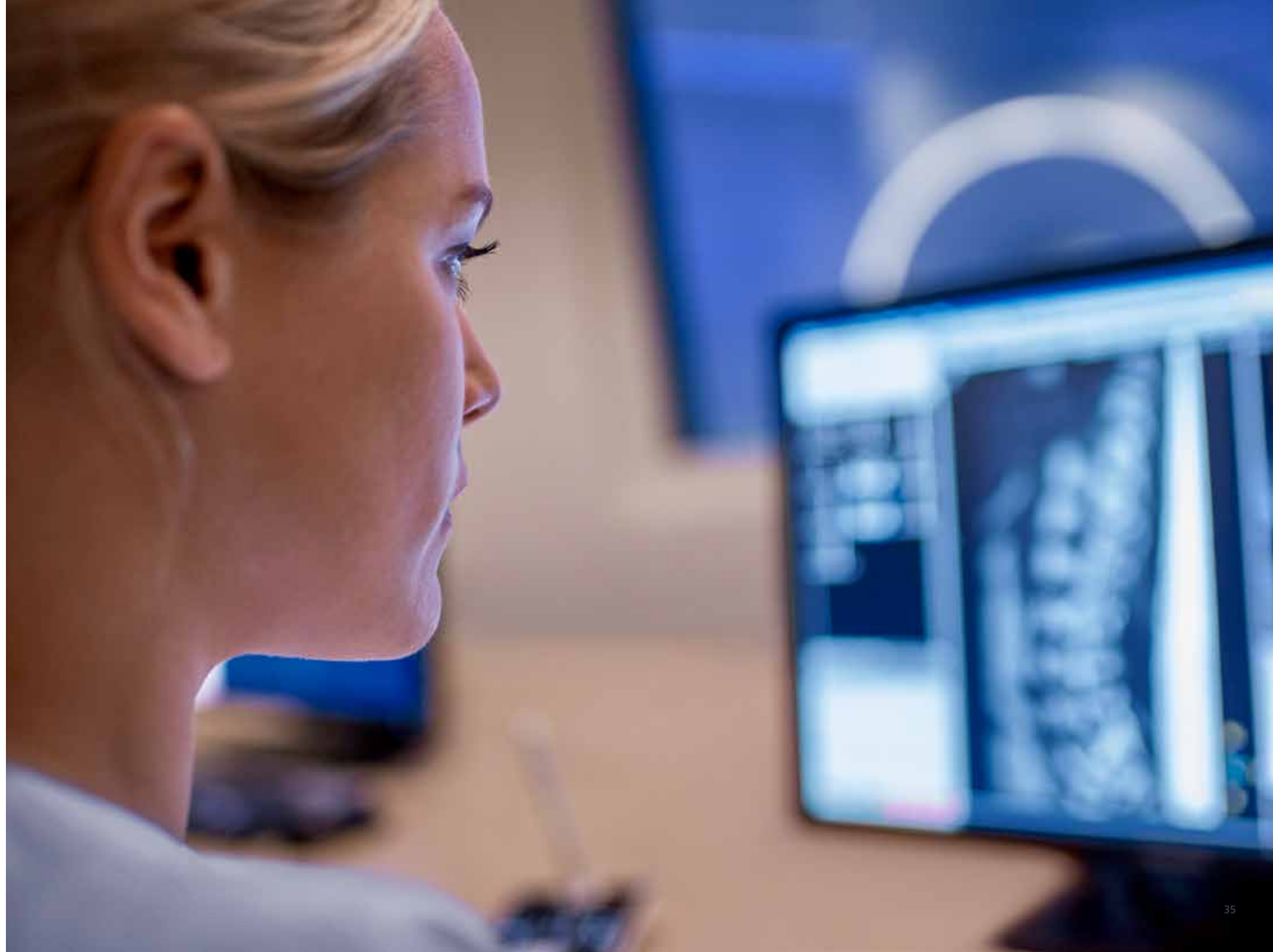
Reduction in overtime, while maintaining same patient throughput per day

Having to work overtime is a recurring issue for many radiology departments and imaging centers that can impact staff satisfaction and run-up operational costs. The stress caused by heavy workloads and overtime hours greatly contribute to burnout among radiology technologists, not to mention long-term mental and physical health issues.[1] By reducing MRI scan times and improving scheduling flexibility, Compressed SENSE helps patients and staff to get home on time. This can improve the experience for all involved.



ComputerTomography Institut in Innsbruck, Austria has been able to reduce overtime by more than one hour, keeping the same patient throughput per day, after the introduction of Compressed SENSE.

1 Vinu, Raj. Occupational stress and Radiography. NCBI. Nov-Dec 2006. https://www.ncbi.nlm.nih.gov/pubmed/17119177
Results from case studies are not predictive of results in other cases. Results in other cases may vary.



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 society[1] and many radiologists still consider neuro indications such as Alzheimer, neuropathy or vascular diseases to be challenging[2]. 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 time[3]. 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 vessels[4]. 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.

Capture a wealth of structural and physiological information in MSK – **with up to 60% higher resolution**[3]

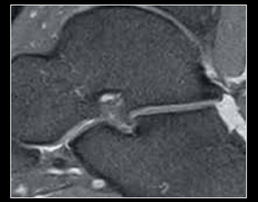
Leveraging dStream digital broadband architecture and Compressed SENSE MSK, the Ingenia Ambition delivers superb visualization of soft tissue and bone, helping you capture fine bone structure, cartilage and meniscal details. You can now acquire 3D submillimeter (0.7 mm or less) isotropic images in less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

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

Up to 60% higher resolution in the same scan time[1]

3D VIEW - PDw TSE
without Compressed SENSE
0.55 x 0.55 x 0.55 mm, **4:55 min**

3D VIEW - PDw TSE
with Compressed SENSE
0.4 x 0.4 x 0.4 mm, **4:33 min**



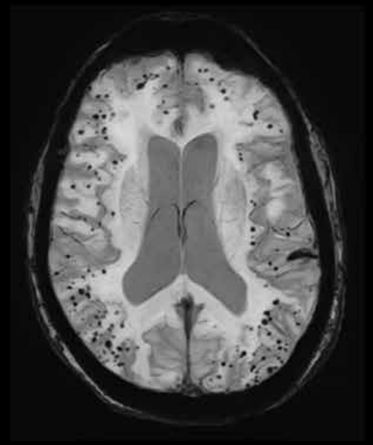
2D PDw TSE
without Compressed SENSE
0.4 x 0.6 x 3.0 mm, **3:50 min**

2D PDw TSE
with Compressed SENSE
0.3 x 0.5 x 2.0 mm, **3:40 min**

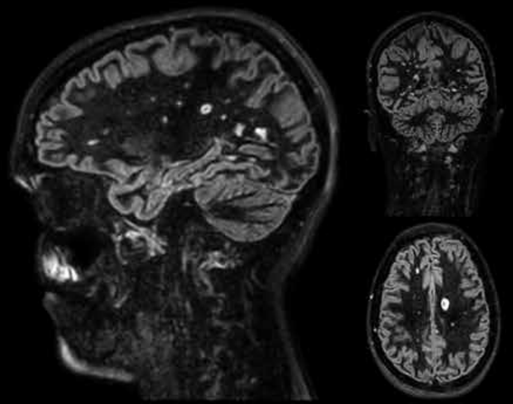
3D VIEW - PDw SPAIR
with Compressed SENSE
0.5 x 0.5 x 0.5 mm, **5:17 min**

1 Compared to SENSE imaging. Results from case studies are not predictive of results in other cases. Results in other cases may vary.

High end neuro imaging at remarkable speed

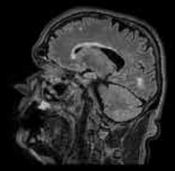


Axial SWIp
Compressed SENSE
0.8 x 0.8 x 2.0 mm, 3:39 min
Courtesy: Spaarne Gasthuis, Hoofddorp, NL



3D BrainVIEW DIR
Compressed SENSE
1.3 x 1.3 x 1.3 mm, 4:52 min
Courtesy: Spaarne Gasthuis, Hoofddorp, NL

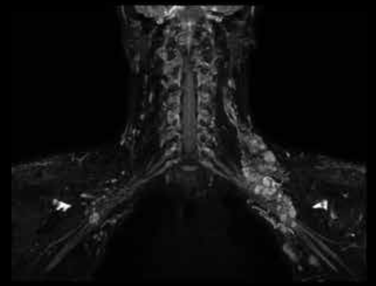
Sagittal BrainVIEW T1w TSE
Compressed SENSE
1.0 x 1.0 x 1.0 mm, 3:25 min
Courtesy: Radiologie360, Koln, Germany



Sagittal BrainVIEW T2w FLAIR
Compressed SENSE
1.2 x 1.2 x 1.2 mm, 3:07 min
Courtesy: Radiologie360, Koln, Germany

Results from case studies are not predictive of results in other cases. Results in other cases may vary.

Faster, high resolution scans[1]



3D NerveVIEW
Compressed SENSE 6
1.2 x 1.2 x 1.2 mm, 4:17 min

T2w TSE mDIXON XD (In Phase + Water only)
Compressed SENSE 3
0.8 x 1.1 x 3.0 mm, 3:47 min

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

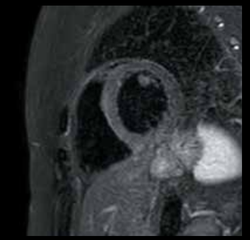
Shorten breath holds by up to 40% and increase patient compliance

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 imaging[1].

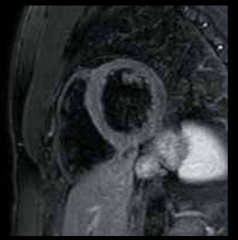
Combined with the visual and auditory breath hold guidance available on our In-bore experience, Ingenia Ambition offers a unique solution to support comfortable abdominal and cardiac imaging for all your patients, especially pediatrics and geriatrics. This has potential to enhance the patient experience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

1 Compared to Philips scans without Compressed SENSE.

Up to 40% shorter breath holds[1]



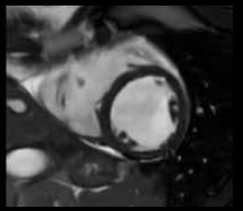
2D SPIR Black Blood
without Compressed SENSE
1.4 x 1.7 x 8.0 mm
Breath hold 12.0 sec



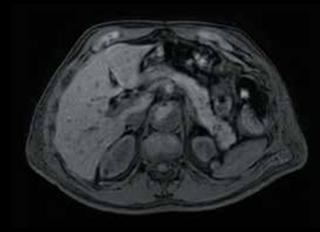
2D SPIR Black Blood
with Compressed SENSE
1.4 x 1.7 x 8.0 mm
Breath hold 6.9 sec

SmartSpeed Cardiac imaging

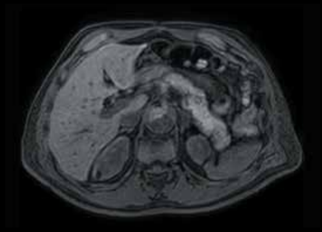
Cine 4-chamber bTFE
1.2 x 1.2 x 8.0 mm
Breath hold 6.0 sec



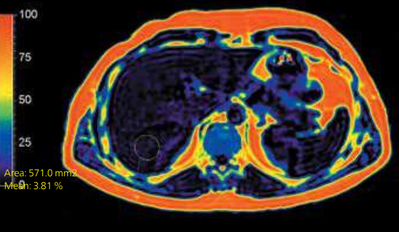
Cine short axis bTFE
1.0 x 1.0 x 8.0 mm
Breath hold 7.0 sec



eTHRIVE
without Compressed SENSE
2.0 x 2.0 x 2.0 mm
Breath hold 15.1 sec



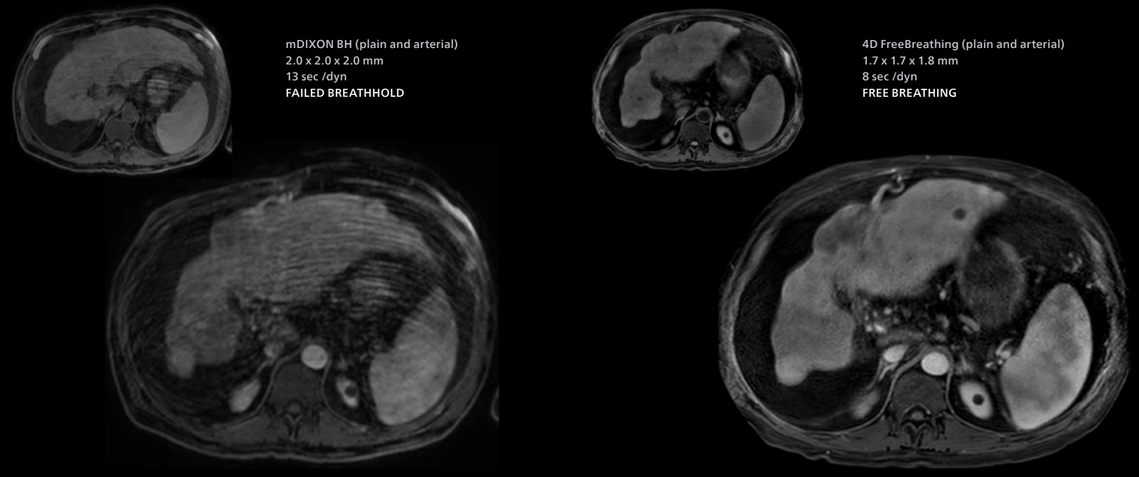
eTHRIVE
with Compressed SENSE
2.0 x 2.0 x 2.0 mm
Breath hold 7.2 sec



mDIXON Quant – Fat fraction
with Compressed SENSE
3.0 x 3.0 x 3.0 mm
Breath hold 5.0 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.

Free breathing, multi-phase liver studies



mDIXON BH (plain and arterial)
2.0 x 2.0 x 2.0 mm
13 sec /dyn
FAILED BREATHHOLD

4D FreeBreathing (plain and arterial)
1.7 x 1.7 x 1.8 mm
8 sec /dyn
FREE BREATHING

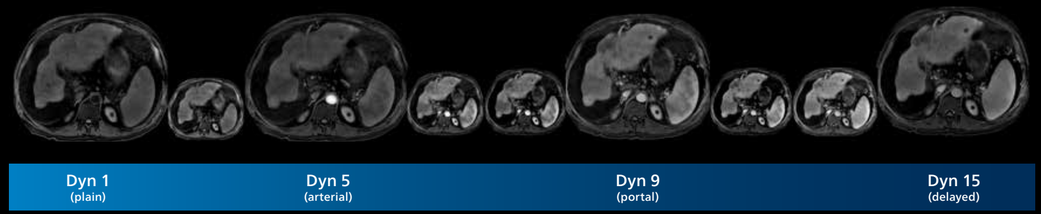
Results from case studies are not predictive of results in other cases. Results in other cases may vary.

Courtesy: Kantonsspital Winterthur, Switzerland, Ingenia 1.5T

Multi-phase contrast-enhanced **MRI Liver studies**

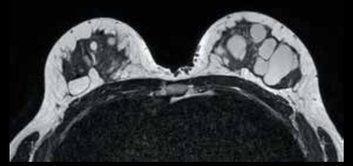
With 4D FreeBreathing, you can now offer free-breathing MRI liver exams to patients who have difficulty holding their breath or find it difficult to follow breathing instructions. It allows you to obtain excellent image quality from multi-phase liver studies, with a temporal resolution down to 3 seconds per phase1, performed without breath holds. 4D FreeBreathing is compatible with VitalEye external sensor for touchless respiratory triggering, delivering reliable results that can improve imaging confidence.2

1 Dynamics are reconstructed at prescribed temporal resolution and will contain data shared from earlier and later time points.
2 Compared to eTHRIVE in subjects unable to hold their breath.

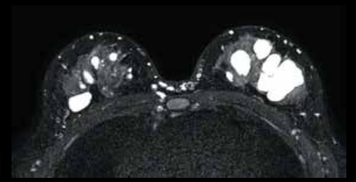


4D FreeBreathing, 1.7 x 1.7 x 1.8 mm, 3 sec /dynamic
Courtesy: Kantonsspital Winterthur, Switzerland

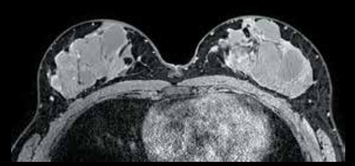
Up to 25% higher resolution[1]



3D BreastVIEW – T2w TSE
with Compressed SENSE
1.0 x 1.0 x 1.0 mm, **2:01 min**



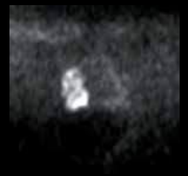
3D BreastVIEW – T2w SPAIR
with Compressed SENSE
0.9 x 0.9 x 1.1 mm, **2:20 min**



eTHRIVE
with Compressed SENSE
0.7 x 0.7 x 1.0 mm, **1:55 min**

Generate additional high b-value cDWI images without extra scans

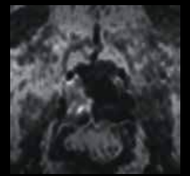
DWI b1000 - Calculated



DWI b2000 - Acquired
2.2 x 4.0 x 3.0 mm, **3:09 min**

DWI b3000 - Calculated

DWI b4000 - Calculated



DWI b5000 - Calculated

Easy slide bar to select your b-values

Ingenia Ambition

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.

Enhance clinical confidence in breast and pelvic imaging – **up to 25% higher resolution in the same scan time**[1]

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 lesions[1]. 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.

1 Compared to Philips scans without Compressed SENSE.

Consistent high quality for challenging cases

Despite the increased speed of image acquisition, repeating even one scan can put you behind schedule, increasing patient waiting times and staff overtime. The Ingenia Ambition offers a series of fast, robust scanning methods specially designed for challenging anatomies and patients – providing the consistent quality you need to achieve efficiency and satisfy your referrals.

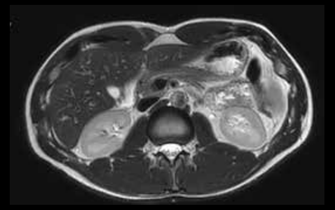
Bring a new dimension to fat suppression by providing uniform, complete and consistent fat-free imaging, even over large field-of-views and in challenging anatomies such as head/neck, spine or MSK.

Provide up to four image types in one single scan, including with/without fat suppression contrasts, in routine scan times and resolution simultaneously, you can easily replace your favorite routine TSE scans with it. mDIXON XD TSE will enable you to enhance your imaging strategies by simplifying your routine TSE procedures.

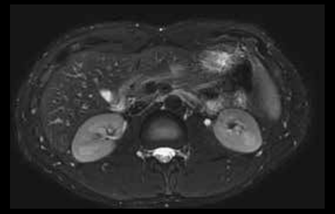
Deliver high resolution diagnostic images even in the case of severe patient motion by providing motion correction to a full range of anatomies, in short scan times.[1] MultiVane XD works in multiple orientations and for various contrasts (T1w, T2w, FLAIR) helping you to increase your diagnostic confidence.

1 Compared to MultiVane, thanks to compatibility with dS SENSE.

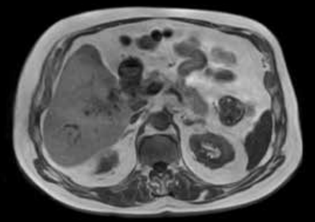
Sagittal T2w TSE mDIXON XD – In Phase + Water only
0.8 x 1.1 x 4.0 mm, **2:34 min /station**
Image courtesy: Spital Uster, Switzerland



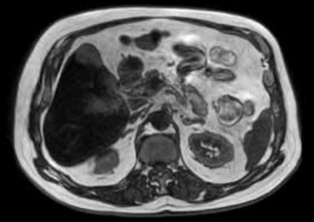
Axial T2w TSE
SmartSpeed Motion-free
0.4 x 04 x 5.0 mm, **2:15 min**



Axial T2w TSE FatSat
SmartSpeed Motion-free
0.4 x 04 x 5.0 mm, **2:48 min**

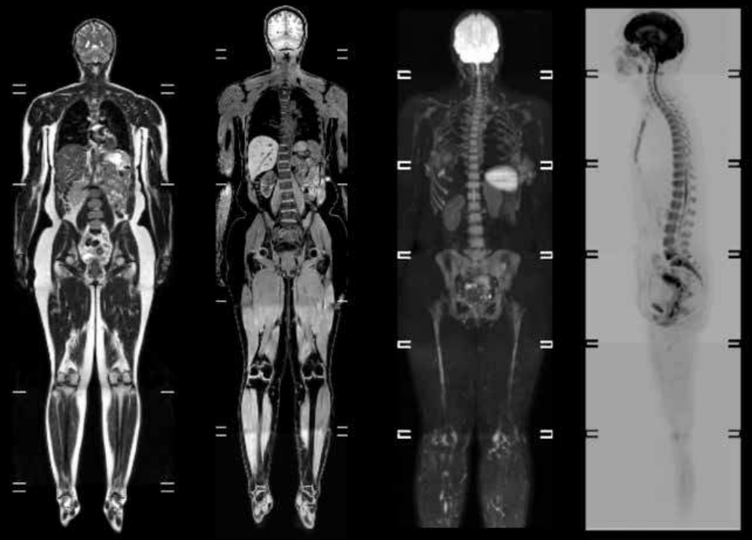


Axial T1w FFE mDIXON XD – In Phase
Compressed SENSE
1.2 x 1.6 x 6.0 mm, 16.5 sec
Courtesy: Radiologie360, Koln, Germany



Axial T1w FFE mDIXON XD – Out of Phase
Compressed SENSE
1.2 x 1.6 x 6.0 mm, 16.5 sec
Courtesy: Radiologie360, Koln, Germany

Whole-body MR in less than 15 minutes



Whole Body **14:02 min**

Cor T2w TSE	1.2 x 1.5 x 6.0 mm	2:27 min
Cor T1 mDixon	2.0 x 2.0 x 2.0 mm	0:53 min
DWIBS	5.0 x 5.0 x 6.0 mm	10:43 min

Ingenia Ambition

Results from case studies are not predictive of results in other cases. Results in other cases may vary.

Expand your imaging services for your referrals

The use of whole body MRI for staging and therapy monitoring of prostate and breast cancer is a valuable option for metastases imaging, especially for bone metastases. This creates a new opportunity for you to expand your imaging services for your referrals. The Ingenia Ambition provides high-quality eye to thighs ExamCard protocols under 15 minutes, drawing on our unique Compressed SENSE, mDIXON XD, and DWIBS whole-body diffusion techniques. Compressed SENSE enables up to 50% acceleration with virtually equivalent image quality[1], completed by other workflow simplification tools like SmartShim for automated image-based shimming method or easy multi-station pasting like MobiView and MobiFlex.
The Ingenia Ambition large field-of-view and highly linear gradients support switching to fast, high-quality coronal whole body DWIBS, a game changer for increasing referrals.

1 Compared to Philips scans without Compressed SENSE.

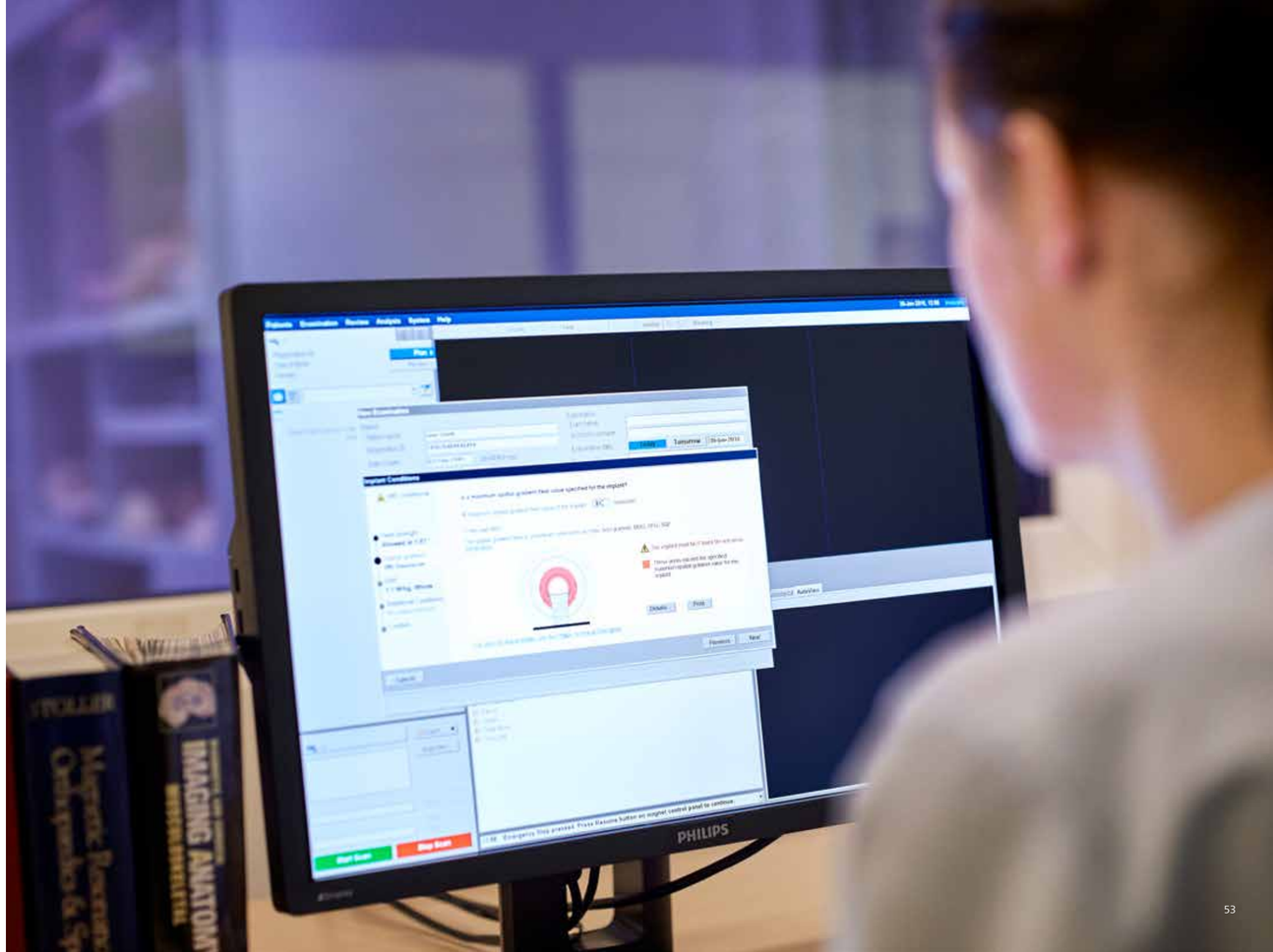
Confidence for **MR Conditional implants**

Confidently offer MR imaging to a growing and potentially under served subset of the patient population: those with MR Conditional implants. Advanced software boosts productivity by reducing time-consuming manual calculations, while also potentially increasing referrals. ScanWise Implant provides step-by-step guidance to enter the condition values as specified by the implant manufacturer. Your MR system then automatically applies these values for the entire examination helping you to simplify your scanning process and stay within the specified limits for patients with MR Conditional implants.

MR Conditional implants often have metal parts that cause artifacts, making it difficult to visualize soft tissue and bone in their vicinity. O-MAR XD (Metal Artifact Reduction for Orthopedic implants) reduces in- and through-plane susceptibility artifacts[1] caused by metal implants and supports the most relevant image contrasts (T1w, T2w, PDw, and STIR), so you can better visualize the area around MR Conditional orthopedic implants.[2] This allows you to offer post-operative MR imaging to patients with implants who could develop implant-related conditions.

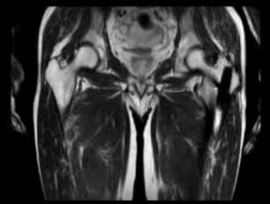
Is your daily schedule disrupted by the long scan times required to scan patients with MR conditional implants? It can be challenging to scan these patients because of the specified SAR levels required. By integrating Compressed SENSE into your ExamCard, you can reduce your total MRI exam time whilst keeping the SAR levels within the limits as specified by the MR Conditional implant manufacturer.

1 Compared to standard high bandwidth spin-echo based techniques.
2 Only for use with MR Safe or MR Conditional implants by strictly following the Instructions for Use.

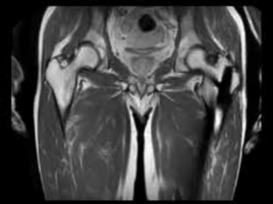


Short examination times

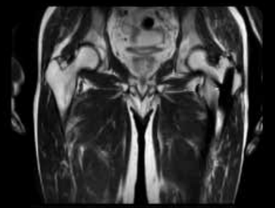
for MR Conditional implant imaging



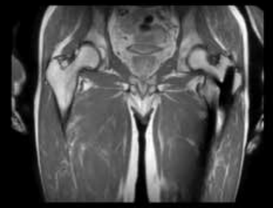
Coronal T2w TSE
1.3 x 1.4 x 3.5 mm
6:18 min



Coronal PDw TSE
1.4 x 1.8 x 3.5 mm
6:08 min



Coronal T2w TSE
SmartSpeed Implant
1.3 x 1.4 x 3.5 mm
3:42 min

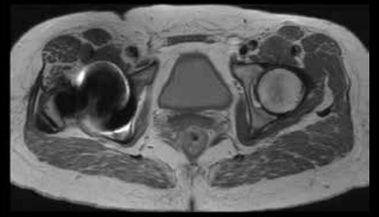


Coronal PDw TSE
SmartSpeed Implant
1.4 x 1.8 x 3.5 mm
3:04 min

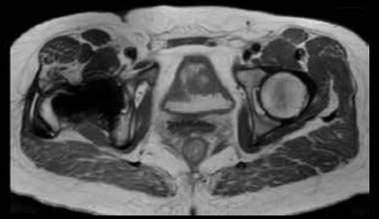
1 Compared to standard high bandwidth spin-echo based techniques.
Results from case studies are not predictive of results in other cases. Results in other cases may vary.

Reduced artifacts

for MR Conditional implant imaging



PDw TSE
1.1 x 1.4 x 3.0 mm
2:38 min



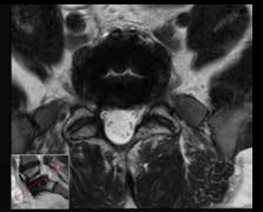
PDw TSE O-MAR XD
1.3 x 1.6 x 3.0 mm
7:55 min

Courtesy: MRI Specialists, Boynton Beach, Florida, USA.

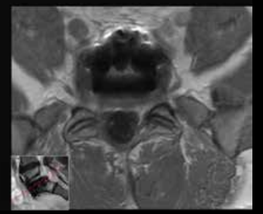
Reduce your total MRI exam time whilst keeping the SAR levels within the limits

T2w TSE
Compressed SENSE
0.8 x 0.9 x 4.0 mm
5:28 min

T1w TSE, post-gado
Compressed SENSE
0.9 x 1.0 x 4.0 mm
5:33 min



T2w TSE
Compressed SENSE
0.6 x 0.9 x 4.0 mm
7:11 min



T1w TSE, post-gado
Compressed SENSE
0.9 x 1.0 x 4.0 mm
4:44 min

Lumbar spine of a post-operative patient with a deep brain stimulator
Compressed SENSE + ScanWise Implant + selectable B1+rms, resulting in exam time **< 30 minutes**, complying with implant conditions and good IQ

Results from case studies are not predictive of results in other cases. Results in other cases may vary.

Courtesy: MRI Specialists, Boynton Beach, Florida, USA.

Dramatically improve the **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 reduction[1], voice guidance, Immersive in-bore visuals and a comfortable table mattress, Ingenia Ambition helps your patients feel at ease, resulting in smooth, fast exams.

1 Compared to scanning without ComforTone.

Provide an **immersive visual experience**

Your patients' scanning experience is significantly enhanced with Ingenia Ambition. Designed to offer a relaxing sensory experience, 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 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%[1]. A case study at Radiologisches Zentrum am Kaufhof, Lübeck, Germany showed that the number of patients needing sedation was reduced by 80%[2].

> ***"We've had a lot of patients provide compliments on the environment. We have the Ambient solution in there that creates a soothing environment."***
>
> **Carol Melvin**, MD, Miami Cardiac and Vascular Institute

1 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.
2 Results from case studies are not predictive of results in other cases. Results in other cases may vary. *The tranquilizer referred to is a valium-based derivative called "Diazepam".

Comfort in every detail

Because no detail is too small when it comes to helping your patients feel comfortable, Ingenia Ambition includes 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%.[1]

> ***“The most frequent comment we are getting from our technologists, is that for patients who have had scans on other Philips scanners, this new mattress is really significantly more comfortable.”***
>
> **Dr. Oswood**, Hennepin County Medical Center

Put your patients at ease and guide them through the examination

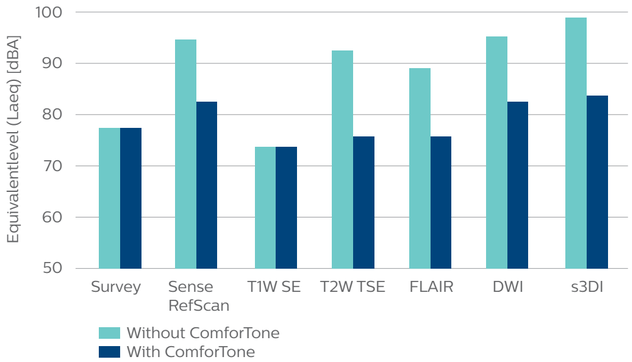
Be confident that your patients know what to do and what to expect through automated, consistent instructions, relieving some of the anxiety of an MR exam. AutoVoice supports exam compliance by guiding your patients through the MR examination. Including automatically announcing scan duration and table movements in your choice of 30 languages and dialects. In addition, providing breath hold instructions, with either manual timing or timing synchronized to fit the patient’s respiratory cycle.

> ***“AutoVoice enables us to shift our focus from having to manually give the breathing instructions to the patient to now planning the exam.”***
>
> **Carlos Avila**, RT, Miami Cardiac and Vascular Institute, USA

1 Compared to using a standard mattress.

Reduce acoustic noise for your patient

No matter how short the exam, a noisy MR scanner can make it seem unbearably long. The Philips unique ComforTone solution achieves up to 80% reduction in acoustic noise[1] with similar image quality and contrast within the same time slot. You can use ComforTone in routine exams such as brain, spine and MSK. Thanks to our ready-to-use ExamCard protocols, ComforTone is simple to implement and use, requiring just a few clicks to get started.



1 Compared to scanning without ComforTone
Results from case studies are not predictive of results in other cases. Results in other cases may vary.

Enhance the value
of your MR investment

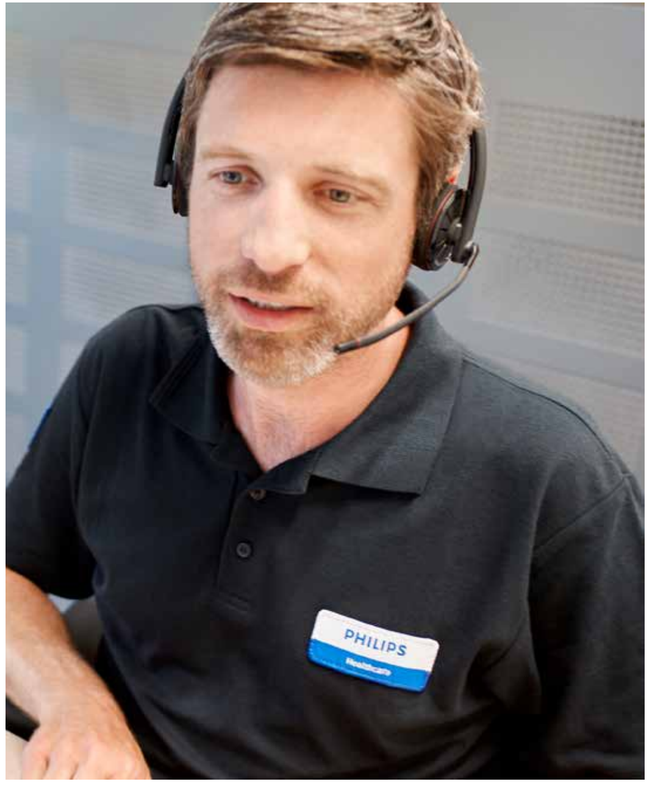
Imaging is both a clinical and an economic challenge. You need to manage a host of financial obligations and opportunities, all while keeping your focus on your patients. We can help, by putting together a package of offerings that keep total cost of ownership in check while providing you with tailored solutions for maintenance, fleet management, cybersecurity, education and financing.

500
parameters are monitored on an MR

+90,000
remote connections across
25,000
healthcare facilities in
139
countries[3]

25%
connected Philips MR service cases[2] are resolved before they cause downtime, due to proactive monitoring

›50%
of MR service cases are resolved remotely[1]



Prevent issues before they occur

Scanner downtime can disrupt your schedule and delay patient care. We offer maintenance agreements that are suited to your needs, enabled by the latest service innovations and including an uptime guarantee. We prevent issues before they occur through proactive remote monitoring, remote diagnostics and remote and field service support. With e-Alerts and other remote data, we monitor more than 500 parameters of your MR system from a distance, detecting and resolving issues without impacting your department's operations. In fact, more than 50% of MR service cases are resolved remotely.[1] Our Philips-qualified service experts can also proactively resolve issues on-site, fix your system before it causes any disruption, and provide reliable and knowledgeable support.[2]

Protecting your MR equipment from patient data breaches and cyber-attacks

Protecting patient health information requires constant vigilance. To keep health information and medical devices secure, we employ best practices in medical device security. Our multi-layered defense barriers include security policies, procedures, access controls, technical measures, training, and risk assessments. The Technology Maximizer Plus subscription program conveniently keeps your MR systems up-to-date through access to the latest cybersecurity patches and mandatory safety fixes via regular and ongoing software upgrades and hardware refreshes.

1 For the Philips diagnostic imaging installed base
2 Based on data collected between July '18 and July '19 on all service events registered on remotely connected Philips MR systems (globally). Downtime does not include time due to planned maintenance
3 Based on global Philips only data.

1 Based on global Philips-only data.
2 Requires minimum maintenance contract. Conditions apply. Offerings are available in selected countries and for selected products only.

Standardize your MR fleet at a fixed annual cost

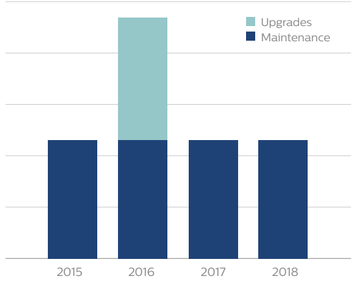
If you own more than one Philips scanner, standardizing under the same software release can enhance efficiency through one user interface for operators to learn and use the same ExamCards across multiple scanners. The Ingenia Ambition is delivered with the latest available software release, providing a perfect opportunity to upgrade your fleet to this release and enter into a Technology Maximizer Plus subscription program.[1] Under the program, your Ingenia Ambition and the rest of your fleet will receive software updates whenever available, giving you the benefits of software improvements and cyber-security advances while maintaining all your MR systems on the same level.

> “It was consistently a challenge to plan for annual upgrades and predict their costs. Thanks to Technology Maximizer, we can now continue to have the latest versions of software for all of our MRI systems.”

Eliseo Vañó Galván, , MD, Cardiovascular radiologist, Chairman of the CT & MR Department at Hospital Nuestra Senora del Rosario, Madrid, Spain

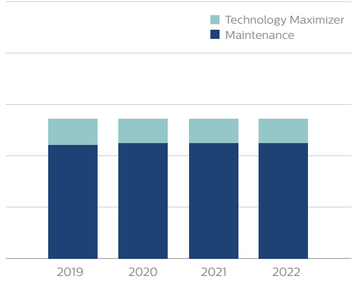
1 Check for compatibility with your Philips representative.

Cost of maintenance and upgrades in **previous years**



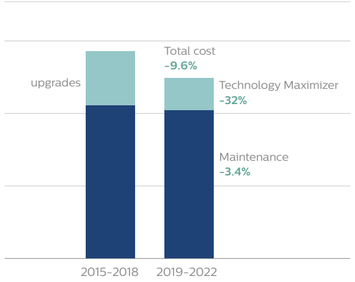
- **Large variation in annual cost**
- **Upgrading once in 4 years**

Cost of maintenance and upgrades with **Technology Maximizer prgram**



- ✓ **Fixed annual cost**
- ✓ **Yearly updating**

Reduction in accumulated cost of maintenance and upgrades over 4 years
Before vs with Technology Maximizer



- ✓ **Technology Maximizer saves cost and provides more frequent updates**

Achieve excellence through **ongoing education**

Delivering consistent healthcare day-in and day-out is a challenge, particularly when faced with staff shortages and the need to cross-train department personnel. Our Philips MR Healthcare Education can help unlock the full potential of your staff, technology, and organization through innovative and meaningful healthcare education, delivered on-site or as e-Learning. For example, the Philips MR Technologist Development Program at Burjeel Hospital for Advanced Surgery (BHAS), a leading orthopedic and joint care center in Dubai, UAE, resulted in an average of 30% improvement in image quality across all procedures.[1] Team knowledge increased 30-40% in the key areas of patient care[1], imaging procedures, data acquisition and physics of image formation. The comprehensive, clinically-relevant courses, programs, and learning paths are designed to support clinical excellence, enhance operational efficiency and provide high-quality patient care.

Tailored financing solutions in line with your cash flow needs, budgets, and business strategy

Providing access to best-in-class healthcare is a leading priority for facilities like yours around the globe. At the same time, financial security and protecting your assets over time are also high on the agenda. To manage your financial challenges, you need to know whether your healthcare investments are sustainable – and how to get the most from your equipment. Financing your Ingenia Ambition helps you exchange variability and unpredictability for visibility and certainty. This helps you avoid the burden and risk of upfront expenditures and benefit from transparent, predictable cost structures. As a result, you can manage and plan budgets more efficiently and free up capital that would otherwise be tied up in fixed assets.

1 Results from case studies are not predictive of results in other cases. Results in other cases may vary

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