



A protected future

Philips Achieva XR MR system

PHILIPS

1.5T performance
3.0T value



today, for tomorrow

Considering a new MR system? Facing the dilemma of choosing between 3.0T or 1.5T field strength?

- Although you may not need 3.0T right now, are you worried about the competition?
- You want a 3.0T but do not have the budget at the moment?
- Are you building a new practice and want to save some money now, but have full technology obsolescence protection?

Look no further – Philips Achieva XR provides outstanding performance at today's industry-standard 1.5T field strength, but with the added security of an easy and economic transition to 3.0T when required.

- **Leading 1.5T performance**

Achieva XR provides outstanding performance at 1.5T, incorporating SmartExam, high-channel SENSE coils and new innovations that open up new applications such as whole-body imaging (DWIBS) and dynamic body imaging (4D-THRIVE) but also improve routine applications.

- **3.0T value inside**

Designed around the new ultra-short X-series 3.0T magnet and gradients, Achieva XR maintains a high residual value over its lifetime.

- **Easy and economical transition to 3.0T**

Achieva XR can be simply and cost effectively upgraded to the Achieva 3.0T X-series, without forklift, just by ramping the magnet.

Achieva XR gives you the best of both worlds: a high performance 1.5T solution with the built-in protection to go to 3.0T if desired.

Leading 1.5T performance

Advanced X-series technology and Philips innovative MR techniques provide Achieva XR with the power to deliver high performance, high quality imaging.

- The outstanding specifications of the zero boil-off magnet, combined with the high-performance Quasar and Quasar Dual gradients offer leading clinical performance over a large 50 cm field of view.
- Philips FreeWave 16/32-channel architecture supports a wide range of multi-channel SENSE coils for ultra-fast imaging and high resolution.
- Achieva XR is designed to offer new and advanced applications such as whole body diffusion (DWIBS), FiberTrak, k-t BLAST whole heart imaging in a single breath hold and high resolution 4D dynamic applications.
- SmartExam provides complete MR examinations for head, spine* and knee exams at a single mouse click, with complete consistency from patient to patient, from operator to operator and for follow-up exams.

Achieva XR gradient specifications

Quasar:	40 mT/m, 120 mT/m/ms.
Quasar Dual:	40 mT/m, 200 mT/m/ms (mode 1). 80 mT/m, 100 mT/m/ms (mode 2).

An intelligent approach to MR, SmartExam is a huge step forward in simplifying head, spine* and knee exams. It provides fully automated planning, scanning and processing with a single mouse click for about 70% of your typical daily case load. Imagine, only one click per patient! Everything else is automatic. No worries about patient position or inconsistent slice angulations -- the results are reproducible for any patient / operator combination, on any day. SmartExam benefits the physician, the operator, the administrator and the patient.

Why?

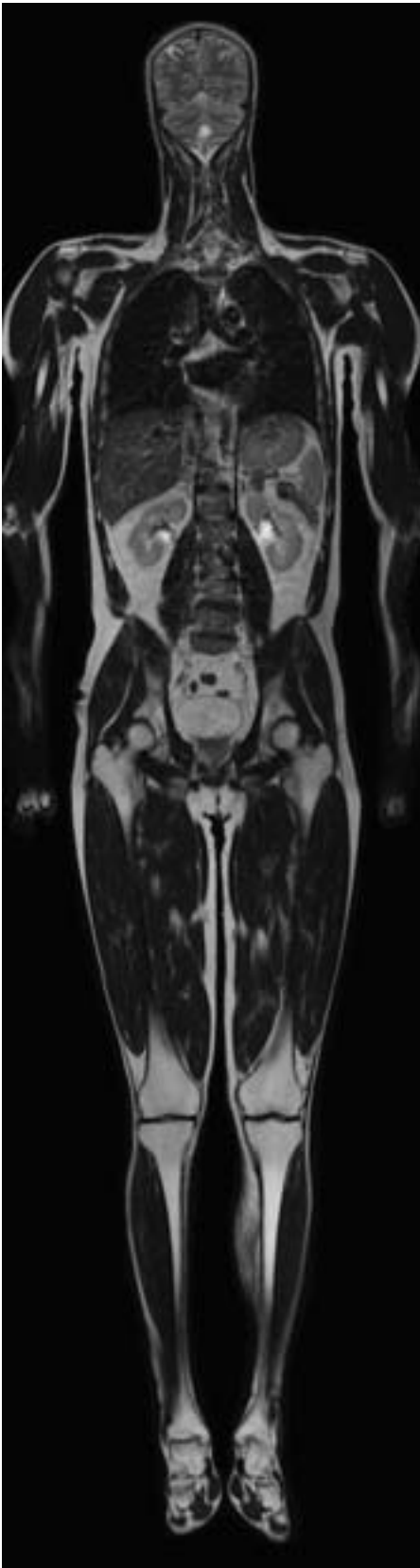
- Physicians get consistent results, every time
- Operators can focus on what matters most, not the technology.
- Administrators get operational excellence.
- Patients will spend less time in the system.

*SmartExam Spine will be available in 2007.





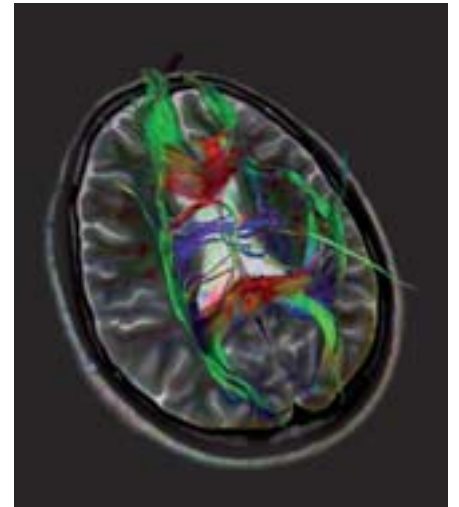
SmartExam is based on landmark recognition and 3D modeling. It provides fully automated planning scanning and processing and includes such features as left-right mirrored learning and automatic vertebrae numbering.



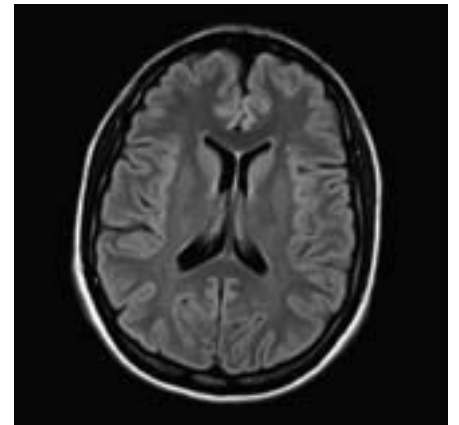
The Integrated Body coil enables Total Body Imaging without any additional coils. T2w TSE with an FOV of 530 x 2000 mm.



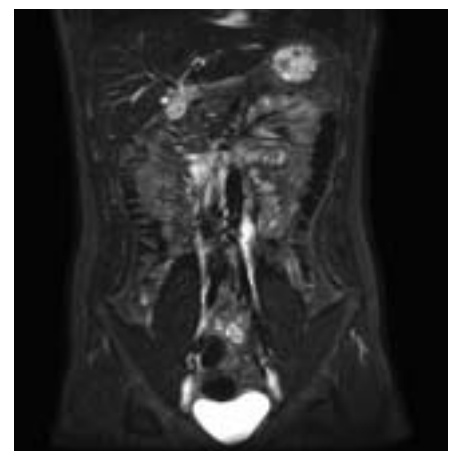
Total neuro exam using the 33-channel SENSE Head/Spine coil, without patient repositioning.



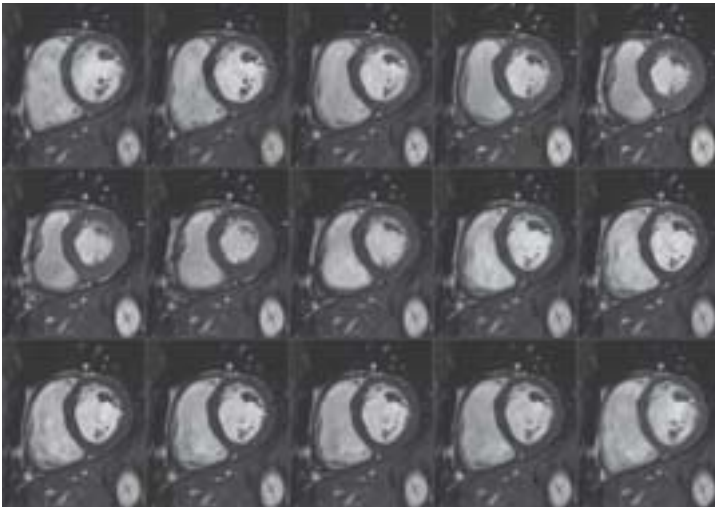
FiberTrak based on SENSE DTI acquired with 15 directions with T2w TSE underlay. Voxel size 2.0 x 2.0 x 2.0 mm.



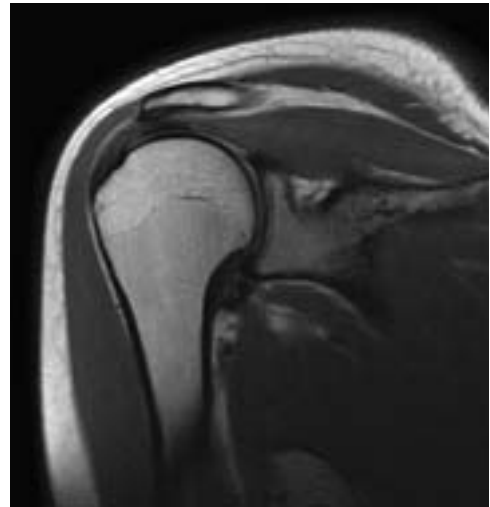
FLAIR acquired using SENSE Head coil, scan time 5:08 min., voxel size 0.9 x 0.9 x 5.0 mm.



Fat suppressed body imaging with STIR in a single breath hold of 20 seconds. Large FOV (475 x 500 mm) coverage using SENSE Torso X L coil.



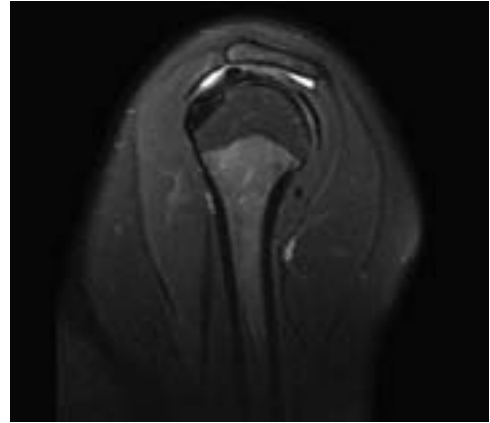
Functional cardiac imaging with SENSE Cardiac coil, 30 slices B-TFE in a single breath-hold of 22.3 seconds, voxel size $0.8 \times 0.8 \times 8.0$ mm.



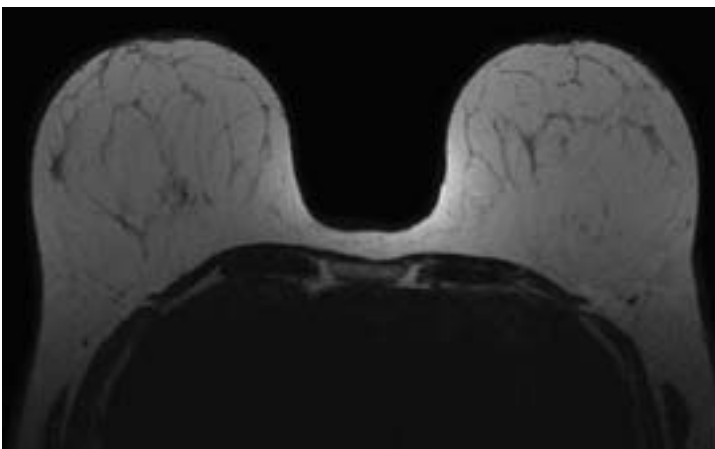
PDW shoulder imaging using a-TSE and SENSE Flex M coil. Scan time 3:00 min., voxel size $0.3 \times 0.3 \times 3.5$ mm.



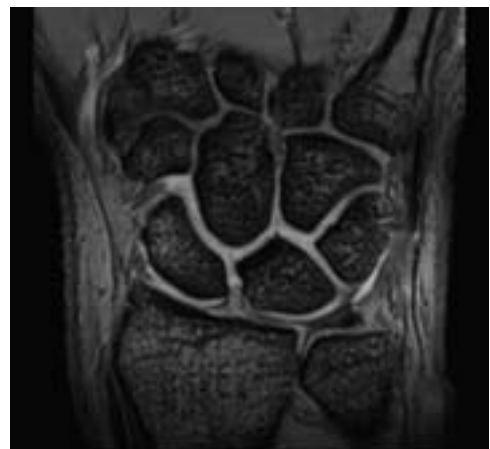
T1W TSE pelvic imaging, 16 slices in 3:34 min., voxel size $0.73 \times 0.84 \times 3.0$ mm.



Off-center fat suppressed shoulder imaging, T2WTSE with SPAIR, scan time 2:56 min., $0.3 \times 0.3 \times 3.5$ mm.



T2W TSE breast imaging with SENSE. Scan time 2:06 min. 40 slices, voxel size $0.6 \times 0.6 \times 3.0$ mm.



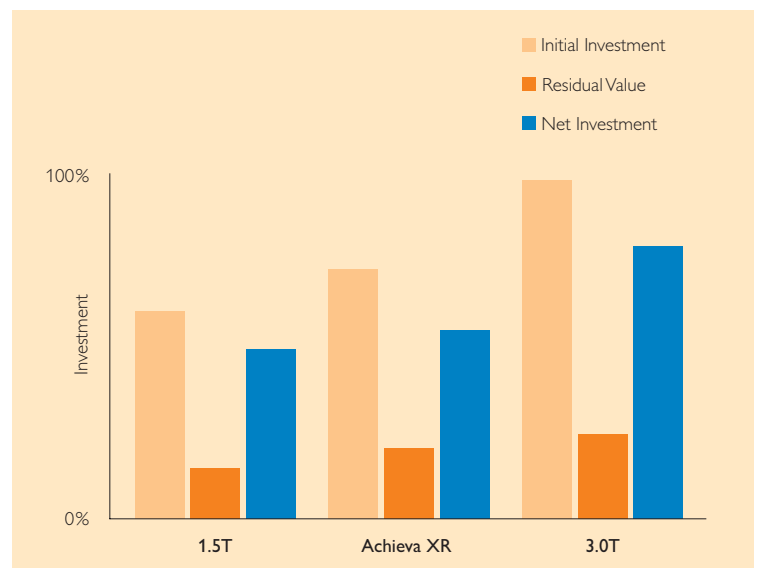
Excellent cartilage visualization of the wrist with m-FFE using the SENSE Wrist coil. 18 slices in 4:34 min., voxel size $0.1 \times 0.1 \times 2.0$ mm.

3.0T value inside

Philips Achieva XR offers the best of both worlds: a high performance 1.5T solution today and built-in 3.0T value for tomorrow, all in one system.

Achieva XR's 3.0T X-series technology for magnet and gradients provides value and protection from obsolescence from Day One. Even if the system remains at 1.5T, these 3.0T building blocks will continue to maintain its residual value in a market that is increasingly embracing 3.0T systems.

Economic sense even without an upgrade: Achieva XR's residual value is comparable to that of an Achieva 3.0T X-series system, while the net investment for Achieva XR is similar to Achieva 1.5T.



An extensive range of a multi-channel SENSE coils covering the entire anatomy are available at 1.5T with direct counterparts at 3.0T.



SENSE Head coil.



SENSE Spine coil.









SENSE Head/Spine coil (16/33 ch.).

Why is Philips able to provide leading 1.5T performance on a 3.0T platform?

Simply stated, this is a direct consequence of Philips' design philosophy for the 3.0T system - the higher field strength should not come at the expense of patient access and acceptance and should comply with what's proven to be best at 1.5T. This has resulted in a unique short bore 3.0T system, with the weight and comfort specifications expected for 1.5T systems and with optimal clinical performance at both 1.5T and 3.0T.



	1.5T	3.0T
Philips	 <p>a) 1.57 m, 60 cm b) 2900 / 4100 kg c) 0.03 l/h</p>	 <p>a) 1.57 m, 60 cm b) 4600 / 6000 kg c) zero boil-off</p>
Company B	 <p>a) 1.50 m, 88 cm b) 3550 / 5500 kg c) zero boil-off</p>	 <p>a) 1.98 m, 142 cm b) 10000/12000 kg c) 0.12 l/h</p>
Company C	 <p>a) 1.72 m, 70 cm b) 3600 / 5500 kg c) 0.03 l/h</p>	 <p>a) 1.72 m, 105 cm b) 9500 / 11500 kg c) 0.03 l/h</p>

- a) Magnet / Bore length
- b) Magnet / System weight
- c) Boil-off rate

Achieva 3.0T X-series technology (short magnet, low weight & zero boil-off) enables unique Achieva XR with leading 1.5T performance.



SENSE Neurovascular coil (8/16 ch.).



SENSE Torso XL coil (16 ch.).



SENSE Body coil.

Easy and economic transition to 3.0T

Philips Achieva XR is the only system that solves the field strength purchasing dilemma - buy a 1.5T today and ramp it up to 3.0T when you are ready.

Why can the upgrade be so easy?

Siting requirements for the 3.0T magnet are addressed during initial installation. All that is left to do is to ramp the magnet and exchange the RF-chain - simply replace the 1.5T RF body coil with a 3.0T X-series coil and exchange the 1.5T RF coils on a like-to-like basis with current 3.0T RF coils. The upgrade brings the unit to the latest levels of computer system and software version.

- Minimal down-time
- No construction activity
- No "forklift" upgrade.



SENSE Breast coil (7 ch.).



SENSE Cardiac coil.

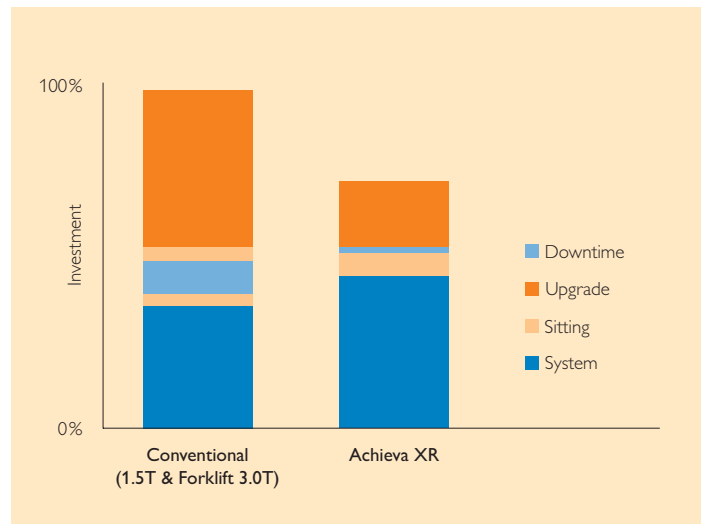


SENSE Knee coil.



Economical transition

Achieva XR's unique upgrade capability using the existing magnet eliminates capital waste as well as extensive and time-consuming construction activities. The net result is a state-of-the-art 3.0T system at about 25% less cost than the conventional fork-lift upgrade.



Bottom Line Economics: 25% savings in upgrading to 3.0T versus conventional "forklift".



SENSE Wrist coil.



SENSE Foot/Ankle coil.



SENSE Shoulder coil.

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