



SIEMENS



UHF MRI at Siemens, Nov. 2015

Science at Crossroads

Michael Schaaf – Vice President HC DI MR TR

Strong innovation history of Siemens UHF MRI



First 7T Siemens Magnet
2015

New MAGNETOM 7T
Release in 2017



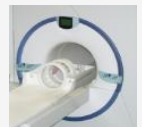
11.7T NIH | **10.5T Minneapolis**
2014 | 2014

TX array step 2
2013



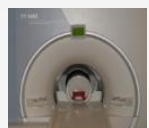
High performance gradient SC72
2010

9.4T Tübingen, Jülich, Maastricht
2007, 2009, 2013



TX array
2007

Actively shielded 7T
2006



First 7T MGH
2002

7T based on Tim technology
2005



Siemens is the trendsetter

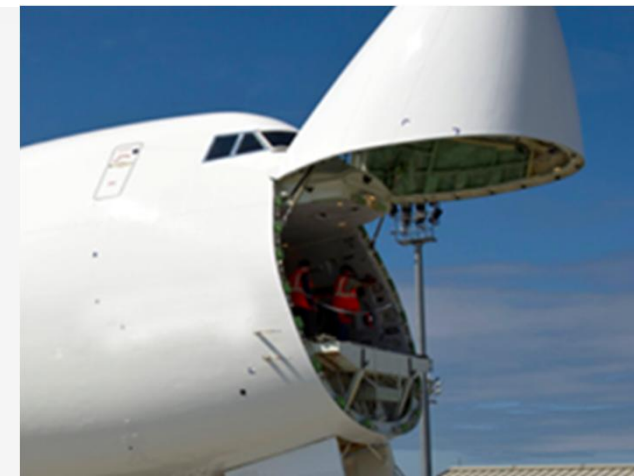
First 7T magnet that can be cold-shipped via airfreight – 100% designed and manufactured by Siemens



50% lighter 7T magnet – 100% designed, built and serviced by Siemens.



7T magnet volume-production at Siemens Magnet Technology, Oxford, UK – thanks to over 30 years of engineering skills and well-founded process expertise in building magnets for 1.5T and 3T.



World's first 7T that can fly due to cold-shipment via airfreight. Planned easier integration into clinical environments and 50% faster installation.

IEC amendment approved: Controlled mode ≤ 8T

IEC

62B/977/FDIS
FINAL DRAFT INTERNATIONAL STANDARD
PROJET FINAL DE NORME INTERNATIONALE

Project number IEC 60601-2-33 Amd.2 Ed.3.0 Numéro de projet		Secretariat / Secrétariat Germany	
IEC/TC or SC CE/CE ou SC 62B		Distributed on / Diffusé le 2015-03-06	
<input checked="" type="checkbox"/> Submitted for parallel voting in CENELEC Soumis au vote parallèle au CENELEC		Voting terminates on / Vote clos le 2015-05-08	
Also of interest to the following committees Intéresse également les comités suivants		Supersedes document Remplace le document 62B/941/CDV & 62B/950/RVC	
Horizontal standard Norme horizontale <input type="checkbox"/> Other TC/SCs are requested to indicate their interest, if any, in this FDIS to the TC/SC secretary Les autres CE/SC sont requis d'indiquer leur intérêt, si nécessaire, dans ce FDIS à l'intention du secrétaire du CE/SC			
Functions concerned Fonctions concernées			
<input checked="" type="checkbox"/> Safety Sécurité	<input checked="" type="checkbox"/> EMC CEM	<input type="checkbox"/> Environment Environnement	<input type="checkbox"/> Quality assurance Assurance de la qualité

IEC FDIS 60601-2-33:2010/AMD2 - 9 -
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NOTE 3 The MR EXAMINATION specific absorbed energy limitation has been introduced because very long duration PATIENT studies have become more common. It limits either the MR EXAMINATION duration or the SAR level of the individual scans of this MR EXAMINATION and is applicable to all SAR limits and all operating modes. If there are multiple, separate studies on a given day where the PATIENT has been given a reasonable rest, each study is considered to be independent from a MR EXAMINATION specific absorbed energy perspective.

*** 201.12.4.104 Protection against exposure to static magnetic fields**

Replace, in the first paragraph of item b), "4 T" with "8 T".

Delete the second paragraph of item b).

Replace, in item c, "4 T" with "8 T".

Replace, in the paragraph after item c) starting with "Physiological effects", both instances of "shall" with "should".



-2- 62B/987/RVD

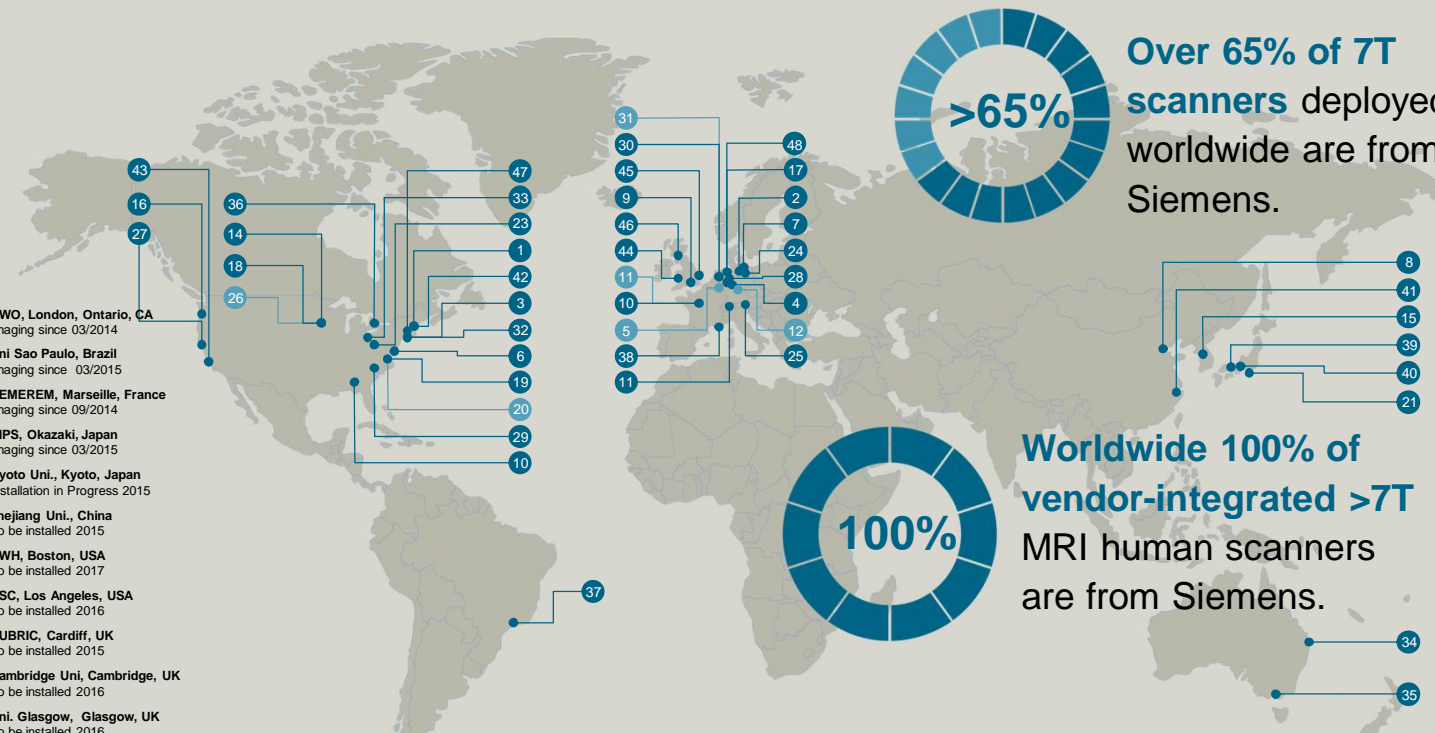
Voting Result on 62B/977/FDIS				
Circulation Date: 2015-03-06		Closing Date: 2015-05-08		
Amendment 2 to IEC 60601-2-33 Ed.3.0 : Medical electrical equipment - Part 2-33: Particular requirements for the basic safety and essential performance of magnetic resonance equipment for medical diagnosis				
Country	Status	Vote	Comments	Received

	Approval Criteria	Result
P-Members voting: 22		
P-Members in favour: 22 = 100%	>=66.7%	APPROVED
Total votes cast: 25	Total against: 0 = <=25%	APPROVED
Final Decision:		APPROVED

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Meet the largest UHF community 7T, 9.4T, 10.5T, 11.7T

1. MGH/MIT, Boston, USA
Imaging since 08/2002
2. Institute for Neuro-Biology, Magdeburg, Germany
Imaging since 02/2005
3. New York University, NYC, USA
Imaging since 03/2005
4. DKFZ, Heidelberg, Germany
Imaging since 08/2008
5. Forschungszentrum Jülich, Germany
Delivered March 2009
6. HUP, Philadelphia, PA, USA
Imaging since 07/2008
7. MDC, Berlin, Germany
Imaging since 12/2008
8. CAS, Beijing, China
Handed over for imaging 08/2010
9. Oxford University, Oxford, UK
Imaging since 12/2011
10. AU, Auburn, Alabama, USA
Imaging since 07/2012
11. CIBM, EPFL, Lausanne, Switzerland
Imaging since 11/2006
12. MPI, Tübingen, Germany
Imaging since 06/2007
13. CEA, Paris, France
Imaging since 02/2007
14. CMRR, Minneapolis, USA
Imaging with Siemens console since 12/2005
15. NRI, Gachon, Korea
Imaging since 04/2006
16. Oregon Health, Portland, USA
Imaging since 12/2006
17. ELH, Essen, Germany
Imaging since 09/2006
18. CMRR, Minneapolis, USA
Imaging since 06/2011
19. NIH, Bethesda, USA
Imaging since 12/2010
20. NIH, Bethesda, USA
In progress, first images 11/2011
21. NICT, Osaka, Japan
Imaging since 06/2013
22. CEA, Paris, France
To be installed 2016
23. UPMC, Pittsburgh, USA
Former GE system, converted to Siemens; Imaging since 05/2007
24. MPI, Leipzig, Germany
Imaging since 07/2007
25. MUW, Vienna, Austria
Imaging since 04/2008
26. CMRR, Minnesota, USA
In progress Q2 2015
27. VASF, San Francisco, USA
Imaging since 06/2014
28. DZNE, Bonn, Germany
Imaging since 09/2013
29. UNC, Chapel Hill, USA
Imaging since 09/2014
30. University Maastricht, NL
Imaging since 09/2012
31. University Maastricht, NL
Imaging since 08/2013
32. Mt Sinai, NY, USA
Imaging since 08/2013
33. Cleveland Clinic, USA
Imaging since 09/2013
34. Queensland University, AU
Imaging since 02/2014
35. University of Melbourne, AU
Imaging since 06/2014
36. UWO, London, Ontario, CA
Imaging since 03/2014
37. Uni Sao Paulo, Brazil
Imaging since 03/2015
38. CEMEREM, Marseille, France
Imaging since 09/2014
39. NIPS, Okazaki, Japan
Imaging since 03/2015
40. Kyoto Uni., Kyoto, Japan
Installation in Progress 2015
41. Zhejiang Uni., China
To be installed 2015
42. BWH, Boston, USA
To be installed 2017
43. USC, Los Angeles, USA
To be installed 2016
44. CUBRIC, Cardiff, UK
To be installed 2015
45. Cambridge Uni., Cambridge, UK
To be installed 2016
46. Uni. Glasgow, Glasgow, UK
To be installed 2016
47. MRRC, Yale University, New Haven, Connecticut, USA
To be installed 2017
48. CHFC, Würzburg University Hospital, Würzburg, Germany



48 projects worldwide!

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November 13th. 2015

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Magnetic Resonance

The Faces behind the Siemens UHF Segment: MR TR



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Science at Crossroads

Magnetic Resonance

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**Thank you for
your attention!**

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