Technical Information Report

ANSI/AAMI/ IEC TIR80001-2-2:2012

Application of risk management for ITnetworks incorporating medical devices — Part 2-2:
Guidance for the disclosure and communication of medical device security needs, risks and controls





Application of risk management for IT-networks incorporating medical devices — Part 2-2: Guidance for the disclosure and communication of medical device security needs, risks and controls

Approved 20 August 2012 by

Association for the Advancement of Medical Instrumentation

Approved 30 September 2012 by American National Standards Institute, Inc.

Abstract: Step-by-step guide to help in the application of risk management when creating or changing a

medical IT-network.

Keywords: medical device, risk management, information technology, interoperability, IT-network

Published by

Association for the Advancement of Medical Instrumentation 4301 N. Fairfax Drive, Suite 301 Arlington, VA 22203-1633 www.aami.org

© 2012 by the Association for the Advancement of Medical Instrumentation

All Rights Reserved

This publication is subject to copyright claims of ISO, ANSI, and AAMI. No part of this publication may be reproduced or distributed in any form, including an electronic retrieval system, without the prior written permission of AAMI. All requests pertaining to this document should be submitted to AAMI. It is illegal under federal law (17 U.S.C. § 101, et seq.) to make copies of all or any part of this document (whether internally or externally) without the prior written permission of the Association for the Advancement of Medical Instrumentation. Violators risk legal action, including civil and criminal penalties, and damages of \$100,000 per offense. For permission regarding the use of all or any part of this document, complete the reprint request form at www.aami.org or contact AAMI, 4301 N. Fairfax Drive, Suite 301, Arlington, VA 22203-1633. Phone: +1-703-525-4890; Fax: +1-703-525-1067.

Printed in the United States of America

ISBN 1-57020-461-6

This is a preview. Click here to purchase the full publication.

AAMI Technical Information Report

A technical information report (TIR) is a publication of the Association for the Advancement of Medical Instrumentation (AAMI) Standards Board that addresses a particular aspect of medical technology.

Although the material presented in a TIR may need further evaluation by experts, releasing the information is valuable because the industry and the professions have an immediate need for it.

A TIR differs markedly from a standard or recommended practice, and readers should understand the differences between these documents.

Standards and recommended practices are subject to a formal process of committee approval, public review, and resolution of all comments. This process of consensus is supervised by the AAMI Standards Board and, in the case of American National Standards, by the American National Standards Institute.

A TIR is not subject to the same formal approval process as a standard. However, a TIR is approved for distribution by a technical committee and the AAMI Standards Board.

Another difference is that, although both standards and TIRs are periodically reviewed, a standard must be acted on—reaffirmed, revised, or withdrawn—and the action formally approved usually every five years but at least every 10 years. For a TIR, AAMI consults with a technical committee about five years after the publication date (and periodically thereafter) for guidance on whether the document is still useful—that is, to check that the information is relevant or of historical value. If the information is not useful, the TIR is removed from circulation.

A TIR may be developed because it is more responsive to underlying safety or performance issues than a standard or recommended practice, or because achieving consensus is extremely difficult or unlikely. Unlike a standard, a TIR permits the inclusion of differing viewpoints on technical issues.

CAUTION NOTICE: This AAMI TIR may be revised or withdrawn at any time. Because it addresses a rapidly evolving field or technology, readers are cautioned to ensure that they have also considered information that may be more recent than this document.

All standards, recommended practices, technical information reports, and other types of technical documents developed by AAMI are *voluntary*, and their application is solely within the discretion and professional judgment of the user of the document. Occasionally, voluntary technical documents are adopted by government regulatory agencies or procurement authorities, in which case the adopting agency is responsible for enforcement of its rules and regulations.

Comments on this technical information report are invited and should be sent to AAMI, Attn: Standards Department, 4301 N. Fairfax Drive, Suite 301, Arlington, VA 22203-1633.

ANSI Technical Report

This AAMI TIR has been registered by the American National Standards Institute as an ANSI Technical Report.

Publication of this ANSI Technical Report has been approved by the accredited standards developer (AAMI). This document is registered as a Technical Report series of publications according to the Procedures for the Registration of Technical Reports with ANSI. This document is not an American National Standard and the material contained herein is not normative in nature.

Comments on this technical information report are invited and should be sent to AAMI, Attn: Standards Department, 4301 N. Fairfax Drive, Suite 301, Arlington, VA 22203-1633.

Contents						
Glo	ssary	of equivalent standards	vi			
Со	mmitte	e representation	ix			
		nd of AAMI adoption of IEC/TR 80001-2-2:2012				
	•	DRD				
		JCTION				
1		re				
2		native references				
3	Term	s and definitions	2			
4	Use of SECURITY CAPABILITIES					
	4.1	Structure of a SECURITY CAPABILITY entry	6			
	4.2	Guidance for use of SECURITY CAPABILITIES in the RISK MANAGEMENT PROCESS	7			
	4.3	Relationship of ISO 14971-based RISK MANAGEMENT to IT security RISK MANAGEMENT	7			
5	SECURITY CAPABILITIES					
	5.1	Automatic logoff – ALOF	8			
	5.2	Audit controls – AUDT				
	5.3	Authorization – AUTH				
	5.4	Configuration of security features – CNFS				
	5.5	Cyber security product upgrades – CSUP				
	5.6	HEALTH DATA de-identification – DIDT	11			
	5.7	Data backup and disaster recovery – DTBK	12			
	5.8	Emergency access – EMRG	12			
	5.9	HEALTH DATA integrity and authenticity – IGAU	13			
	5.10	Malware detection/protection – MLDP	13			
	5.11	Node authentication – NAUT	13			
	5.12	`Person authentication – PAUT	14			
		Physical locks on device – PLOK				
	5.14	Third-party components in product lifecycle roadmaps – RDMP	15			
	5.15	, , , , , , , , , , , , , , , , , , , ,				
		Security guides – SGUD				
		HEALTH DATA storage confidentiality – STCF				
		Transmission confidentiality – TXCF				
		Transmission integrity – TXIG	18			
6	Example of detailed specification under SECURITY CAPABILITY: Person authentication – PAUT					
7	Refe	References19				
8	Other resources					
	8.1	General				
	8.2	Manufacture disclosure statement for medical device security (MDS2)				
	8.3	Application security questionnaire (ASQ)				
	8 4	The Certification Commission for Healthcare Information Technology (CCHIT)				

	8.5		chit.org/get_certifiedHL/ Functional Electronic Health Record	21
	8.6		teria – ISO/IEC 15408	
9	Stand	dards and frai	meworks	22
An	nex A	(informative)	Sample scenario showing the exchange of security information	23
An	nex B	(informative)	Examples of regional specification on a few SECURITY CAPABILITIES	46
An	nex C	(informative)	SECURITY CAPABILITY mapping to C-I-A-A	50
Bib	liogra	phy		51
Tal	ble 1 –	- Relationship	of IT security and ISO 14971-based terminology	8
Tal	ble C.1	I – Sample m	apping by a hypothetical HDO	50

Glossary of equivalent standards

International Standards adopted in the United States may include normative references to other International Standards. For each International Standard that has been adopted by AAMI (and ANSI), the table below gives the corresponding U.S. designation and level of equivalency to the International Standard. NOTE: Documents are sorted by international designation. The code in the US column, "(R)20xx" indicates the year the document was officially reaffirmed by AAMI. E.g., ANSI/AAMI/ISO 10993-4:2002/(R)2009 indicates that 10993-4, originally approved and published in 2002, was reaffirmed without change in 2009.

Other normatively referenced International Standards may be under consideration for U.S. adoption by AAMI; therefore, this list should not be considered exhaustive.

International designation	U.S. designation	Equivalency
IEC 60601-1:2005	ANSI/AAMI ES60601-1:2005/(R)2012	Major technical variations
IEC 60601-1:2005/A1:2012	ANSI/AAMI ES60601-1:2005/A1:2012	A1 identical
IEC Technical Corrigendum 1 and 2	ANSI/AAMI ES60601-1:2005/C1:2009/(R)2012 (amdt)	C1 identical to Corrigendum 1 & 2
	ANSI/AAMI ES60601-1:2005/A2:2010/(R)2012	A2 applies to AAMI, only
IEC 60601-1-11:2010	ANSI/AAMI HA60601-1-11:2011	Major technical variations
IEC 60601-1-2:2007	ANSI/AAMI/IEC 60601-1-2:2007/(R)2012	Identical
IEC 60601-2-2:2009	ANSI/AAMI/IEC 60601-2-2:2009	Identical
IEC 60601-2-4:2010	ANSI/AAMI/IEC 60601-2-4:2010	Identical
IEC 60601-2-16:2012	ANSI/AAMI/IEC 60601-2-16:2012	Identical
IEC 60601-2-19:2009	ANSI/AAMI/IEC 60601-2-19:2009	Identical
IEC 60601-2-20:2009	ANSI/AAMI/IEC 60601-2-20:2009	Identical
IEC 60601-2-21:2009	ANSI/AAMI/IEC 60601-2-21:2009	Identical
IEC 60601-2-24:1998	ANSI/AAMI ID26:2004/(R)2009	Major technical variations
IEC 60601-2-25:2011	ANSI/AAMI/IEC 60601-2-25:2011	Identical
IEC 60601-2-27:2011	ANSI/AAMI/IEC 60601-2-27:2011	Identical
IEC 60601-2-47:2012	ANSI/AAMI/IEC 60601-2-47:2012	Identical
IEC 60601-2-50:2009	ANSI/AAMI/IEC 60601-2-50:2009	Identical
IEC/TR 60878:2009	ANSI/AAMI/IEC TIR60878:2003	Identical
IEC/TR 61289:2011	ANSI/AAMI/IEC TIR61289:2011	Identical
IEC/TR 62296:2009	ANSI/AAMI/IEC TIR62296:2009	Identical
IEC 62304:2006	ANSI/AAMI/IEC 62304:2006	Identical
IEC/TR 62348:2006	ANSI/AAMI/IEC TIR62348:2006	Identical
IEC/TR 62354:2009	ANSI/AAMI/IEC TIR62354:2009	Identical
IEC 62366:2007	ANSI/AAMI/IEC 62366:2007	Identical
IEC 80001-1:2010	ANSI/AAMI/IEC 80001-1:2010	Identical
IEC/TR 80001-2-1:2012	ANSI/AAMI/IEC 80001-2-1:2012	Identical
IEC/TR 80001-2-2:2012	ANSI/AAMI/IEC 80001-2-2:2012	Identical
IEC/TR 80001-2-3:2012	ANSI/AAMI/IEC 80001-2-3:2012	Identical
IEC/TR 80002-1:2009	ANSI/IEC/TR 80002-1:2009	Identical
IEC 80601-2-30:2009 and Technical	ANSI/AAMI/IEC 80601-2-30:2009 and	Identical (with inclusion)
Corrigendum 1	ANSI/AAMI/IEC 80601-2-30:2009/C1:2009	C1 Identical to Corrigendum 1
150 00004 0 50 0000	(amdt) – consolidated text	
IEC 80601-2-58:2008	ANSI/AAMI/IEC 80601-2-58:2008	Identical
ISO 5840:2005	ANSI/AAMI/ISO 5840:2005/(R)2010	Identical
ISO 7198:1998	ANSI/AAMI/ISO 7198:1998/2001/(R)2010	Identical
ISO 7199:2009 and Amendment 1:2012	ANSI/AAMI/ISO 7199:2009 and Amendment 1:2012	Identical
ISO 8637:2010	ANSI/AAMI/ISO 8637:2010	Identical
ISO 8638:2010	ANSI/AAMI/ISO 8638:2010	Identical
100 0000.2010	A NACI/A ACIVII/ IOO OOOO. AU IO	Identical