

Standards Navigator

Standards Navigator Monthly Report

9-September-2014

SoftwareCPR Standards Navigator provides information and tools related to standards that play a significant role in health software and software intensive medical devices. In addition to information on existing standards, SoftwareCPR Standards Navigator keeps you up to date on new standards activity and gives you expert insight into future changes to existing standards.

http://www.softwarecpr.com/topicsframepage.htm

July-August 2014 Standards Navigator Overview

Medical device software

The IMDRF working group on Software as a Medical Device (SaMD) has a working draft of their final classification document and has submitted their presentation slides for the IMDRF meeting in Washington in September.

The working draft and presentations are available on the Standards Navigator web page. **NOTE** – The working draft has not been finalized. There may be a few changes in the final published report.

Medical Devices

AAMI has circulated for vote the draft technical information report TIR 38 - Medical Device Safety Assurance Case Report Guidance. The TIR provides
guidance for the development of safety cases for the design of a medical device. It includes guidance on how to integrate existing medical device risk
management processes with safety cases.

The draft TIR is available on the Software Standards Navigator web page.

• A draft technical report *IEC 60601-4-3 Guidance and interpretation – Considerations of unclear or unaddressed safety aspects in the third edition of IEC 60601-1 and proposals for new requirements* has been circulated for vote. This technical report contains a series of recommendations in response to questions of interpretation of the third edition of IEC 60601-1. Almost all of these recommendations pertain to basic safety. One question asked about the reference to IEC 62304:2006 that is contained in clause 14 after the amendment to IEC 62304 is completed which will address legacy software. The response was that because 60601-1 has a gap regarding legacy software, risk management should be used which should be based on the state of the art, which means that the newer versions of 62304 should be taken into account.

The draft technical report is available on the Software Standards Navigator web page.

Health IT and mobile health applications

No new documents. The IMDRF SaMD classification includes mobile and health IT applications that meet the definition of a medical device.

Quality

• Draft for vote of a new version of ISO 9000 - Quality management systems — Fundamentals and vocabulary. This International Standard provides the fundamentals and terminology of quality management systems. It is the foundation of other ISO quality management system standards and serves as the normative reference for many of them. It will help the user to understand the principles, systems model and terminology of quality management in order to more effectively and efficiently implement a quality management system and realize value from other ISO quality management system standards.

The draft standard is available on the Software Standards Navigator web page.

• Draft for vote of a new version of ISO 9001 - Quality management systems — Requirements. This International Standard specifies requirements aimed primarily at giving confidence in the products and services provided by an organization and thereby improving customer satisfaction. Its proper implementation can also be expected to bring other organizational benefits such as improved internal communication, better understanding and control of the organization's processes, and reduction in defects and waste.

The draft standard is available on the Software Standards Navigator web page.

Security

- Preliminary draft technical specification ISO 33050-4 A process reference model for information security management. The PRM specified in this Technical Specification describes the processes including the information security management system (ISMS) processes implied by ISO/IEC 27001. Each process of this PRM is described in terms of a purpose and outcomes, and provides traceability to requirements.
- Preliminary draft technical specification ISO 33070-4 A process capability assessment model for Information Security Management. This Technical
 Specification provides an example of an Information Security Management Process Assessment Model (PAM) for use in performing a conformant assessment
 in accordance with the requirements of ISO/IEC 33002. It enables implemented processes of ISO/IEC 27001 to be assessed according to the requirements of
 ISO/IEC 33004. This Technical Specification:
 - defines an exemplar PAM that meets the requirements of ISO/IEC 33004 and that supports the performance of an assessment by providing indicators for guidance on the interpretation of the process purposes and outcomes as defined in ISO/IEC TS 33050-4 and the process attributes as defined in ISO/IEC 33020;
 - o provides guidance, by example, on the definition, selection and use of assessment indicators.

Software Engineering

- Many new documents have been released recently by the software engineering standards sub-committee. All of the documents listed are available on the Software Standards Navigator web page.
 - Committee draft of ISO 25011 Service Quality Model. The scope of this standard is the quality of services that use IT, made up from a combination of people, processes and technology.
 - Final draft of ISO/IEC 26531 Content management for product lifecycle, user, and service management documentation. This International Standard provides requirements for the management of the content used in product life cycle, software, and service management system documentation.
 Content management allows an organization to control the storage and retrieval of content objects, track content revisions, maintain a content audit trail, and enable a collaborative environment.
 - Draft for vote of ISO 29119-5 Software Testing Part 5: Keyword-Driven Testing. This standard, ISO/IEC/IEEE 29119-5 Keyword-Driven Testing, defines a unified approach for describing test cases in a modular way, which assists with the creation of items like keyword-driven test specifications and test automation frameworks. The term "keyword" refers to the elements which are, once defined, used to compose test cases, such as with building blocks.
 - Committee draft of ISO 25022 Measurement of quality in use. This International Standard contains:
 - a basic set of measures for each quality in use characteristic;
 - an explanation of how to how quality in use is measured.

This International Standard provides a suggested set of quality in use measures to be used with the ISO/IEC 25010 quality model. They are not intended to be an exhaustive set.

Final draft of ISO 23026 - Engineering and management of websites for systems, software, and services information. This standard defines system
engineering and management requirements for the life cycle of websites, including strategy, design, engineering, testing and validation, and
management and sustainment for Intranet and Extranet environments.

- Final draft of ISO 16350 Application management. This International Standard provides a common framework for establishing the processes, tasks
 and activities of service providers that enhance, maintain and/or renew applications or application objects after the initial development that is at the
 stage of exploitation and use and that supports other service providers that run the application in production environments and user organizations
 that use the applications.
- Draft technical report ISO 12182 Framework for categorization of IT systems and software, and guide for applying it. This technical report specifies
 the manner in which categorizations of IT systems and software are organized and expressed. It provides the framework for categorizations, and a
 guide for applying it. This allows any community to clarify their scope of the systems by using their own definition of categories.

NEW STANDARDS, REPORTS & REGULATIONS

	Topic	Use / Users	Description
IMDRF SaMD classification – Working draft	Medical devices	Manufacturers	"Software as a Medical Device": Possible Framework for Risk Categorization and Corresponding Considerations. The working draft can be found on the SoftwareCPR Standards Navigator web page.
IMDRF SaMD classification - presentation	Medical devices	Manufacturers	Software as a Medical Device (SaMD): Possible Framework for Risk Categorization and Corresponding Considerations Proposed Final This presentation provides information on changes from the consultation draft and an overview of the final document. The presentation can be found on the SoftwareCPR Standards Navigator web page.
AAMI TIR 38 CDV	Medical devices	Manufacturers	TIR 38 - Medical Device Safety Assurance Case Report Guidance The draft TIR can be found on the SoftwareCPR Standards Navigator web page.
IEC 60601-4-3 DTR	Medical devices	Manufacturers	IEC 60601-4-3 Guidance and interpretation – Considerations of unclear or unaddressed safety aspects in the third edition of IEC 60601-1 and proposals for new requirements The draft TR can be found on the SoftwareCPR Standards Navigator web page.
ISO 9000 DIS	Quality	Manufacturers	ISO 9000 - Quality management systems — Fundamentals and vocabulary. The draft standard can be found on the SoftwareCPR Standards Navigator web page.

NEW STANDARDS, REPORTS & REGULATIONS

	Topic	Use / Users	Description
ISO 9001 DIS	Quality	Manufacturers	ISO 9001 - Quality management systems — Requirements. The draft standard can be found on the SoftwareCPR Standards Navigator web page.
ISO 25011 CD	Quality	Manufacturers	Information technology – Service Quality Requirement and Evaluation (SQuaRE) – Service Quality Model The draft standard can be found on the SoftwareCPR Standards Navigator web page.
ISO/IEC 26531 FDIS	Software	Manufacturers	Software and system engineering — Content management for product lifecycle, user, and service management documentation The draft standard can be found on the SoftwareCPR Standards Navigator web page.
ISO 29119-5 DIS	Software	Manufacturers	Software and Systems Engineering — Software Testing — Part 5: Keyword-Driven Testing The draft standard can be found on the SoftwareCPR Standards Navigator web page.
ISO 25022 CD	Quality	Manufacturers	Systems and software engineering - Systems and software Quality Requirements and Evaluation (SQuaRE) – Measurement of quality in use The draft standard can be found on the SoftwareCPR Standards Navigator web page.
ISO 23026 FDIS	Software	Manufacturers	Systems and software engineering — Engineering and management of websites for systems, software, and services information The draft standard can be found on the SoftwareCPR Standards Navigator web page.

NEW STANDARDS, REPORTS & REGULATIONS

	Topic	Use / Users	Description
ISO 33050-4 PDTS	Security	Manufacturers and hospitals	Information Technology — Process Assessment — Part 4: A process reference model for information security management The draft technical specification can be found on the SoftwareCPR Standards Navigator web page.
ISO 33070-4	Security	Manufacturers and hospitals	Information technology — Process assessment — Part 4: A process capability assessment model for Information Security Management The draft technical specification can be found on the SoftwareCPR Standards Navigator web page.
ISO 16350 FDIS	Software	Manufacturers and hospitals	Systems and Software Engineering - Application management The draft standard can be found on the SoftwareCPR Standards Navigator web page.
ISO 12182 DTR	Systems and software	Manufacturers	Systems and software engineering — Framework for categorization of IT systems and software, and guide for applying it The draft technical report can be found on the SoftwareCPR Standards Navigator web page.

STANDARDS & GUIDANCE DRAFTS STILL IN REVIEW

NBRG Consensus paper on the interpretation and application of EN 14971:2012	Risk management	Manufacturers	This working draft provides background on the issues related to the Annexes Z in the EN version of ISO 14971 released in 2012. It attempts to bridge the gap between the wording in the Essential Requirements of the MDD and the use of ISO 14971 to develop medical devices that are "compatible with a high level of protection of health and safety" as required by the MDD. The draft makes recommendations for the seven "content deviations" between the wording in the MDD and the wording in ISO 14971. The working draft can be found on the SoftwareCPR Standards Navigator web page. NOTE that this working draft has not yet been adopted by the entire NBRG.
FDA draft guidance for MDDS	Medical devices	Manufacturers	Medical Device Data Systems, Medical Image Storage Devices, and Medical Image Communications Devices – Draft Guidance for Industry and Food and Drug Administration Staff In this draft guidance FDA notifies MDDS manufacturers that it does not intend to enforce compliance with regulatory controls for this type of medical device. The draft FDA guidance is available at http://www.fda.gov/MedicalDevices/DeviceRegulationandGuidance/GuidanceDocuments/ucm401785.htm
ISO 24748-4 DIS	Software engineering	Manufacturers	ISO 24748-4: Life cycle management — Part 4: Systems engineering planning The DIS can be found on the SoftwareCPR Standards Navigator web page. The ballot closes on September 10.

REFERENCES

	Topic	Use / Users	Description
ONC 10-Year Vision	Health IT	Health IT infrastructure	ONC 10-Year Vision to Achieve an Interoperable Health IT Infrastructure The document can be found on the SoftwareCPR Standards Navigator web page or at http://www.healthit.gov/sites/default/files/ONC10yearInteroperabilityConceptPaper.pdf
ISO TC 215 standards framework for health software Safety	Health software	Manufacturers	Health Software Ad hoc group Interim Report – May 2014 Health Software Safety Standards FUTURE STATE Architecture/Framework – DISCUSSION DRAFT The report can be found on the SoftwareCPR Standards Navigator web page.
BSI white paper	Medical devices	Manufacturers	"The proposed EU regulations for medical and in vitro diagnostic devices" The white paper can be found on the SoftwareCPR Standards Navigator web page
EC green paper	Health IT	Manufacturers	"Green Paper on mobile Health (mHealth)" The green paper can be found on the SoftwareCPR Standards Navigator web page
IMDRF SaMD Definitions	Software	Manufacturers	Software as a Medical Device (SaMD): Key Definitions Report on international harmonization of definitions for software as a medical device. Adopted by IMDRF in November. The report can be found on the SoftwareCPR Standards Navigator web page.

Medical Devices	Manufacturers	Commission recommendation of 24 September 2013 on the audits and assessments performed by notified bodies in the field of medical devices. The document can be found on the SoftwareCPR Standards Navigator web page.
Security	Manufacturers	Recommendations for security controls to assure medical device cybersecurity and documentation to submit in a premarket review to demonstrate effective cybersecurity management. Recommends identifying cybersecurity risks and providing a traceability matrix that links cybersecurity controls to cybersecurity risks that were identified. Also recommends documentation to demonstrate that the device will be provided to purchasers free of malware and a plan for providing updates and patches to provide up-to-date protection.
Security	Manufacturers and hospitals	FDA has become aware of cybersecurity vulnerabilities and incidents that could directly impact medical devices or hospital network operations. This safety communication recommends that medical device manufacturers take steps to limit opportunities for unauthorized access to medical devices and hospitals take steps to evaluate network security and protect the hospital systems. The FDA also recommends prompt reporting of events that have impacted the performance of a medical device or hospital network.
Security	Manufacturers, hospitals	ICS-CERT is issuing this alert to provide early notice of a report of a hard-coded password vulnerability affecting roughly 300 medical devices across approximately 40 vendors. According to their report, the vulnerability could be exploited to potentially change critical settings and/or modify device firmware. The alert also identifies baseline mitigations for reducing risks to these and other cybersecurity attacks.
Health IT safety	Health IT manufacturers, hospitals	The final version of the ONC plan that has the objectives to use health IT to make care safer and to continuously improve the safety of health IT.
	Security Security Health IT	Security Manufacturers Security Manufacturers and hospitals Security Manufacturers, hospitals Health IT Health IT manufacturers,

ONC contract with the Joint Commission to investigate health IT- related safety events	Health IT safety	Hospitals, health IT manufacturers	The purpose of this contract is to ensure that there is an early detection system on health IT-related safety issues, including those associated with EHRs.
ONC guidance on annual surveillance plans by authorized certification bodies	Surveillance of certified EHRs	Authorized EHR certification bodies	Authorized Certification Bodies are expected to conduct surveillance on EHRs that they have certified. This guidance provides the priorities for topics to assess in the surveillance plan. Safety-related capabilities and security capabilities are two of the four areas for priority identified in this guidance.
NIST draft outline of a cybersecurity framework for critical infrastructure	Security	Hospitals, manufacturers	NIST was directed to prepare a cybersecurity framework for critical infrastructure in Presidential Executive Order 13636. Healthcare was identified as one of the areas with critical infrastructure. This draft for comment is only an outline of the framework. NIST intends the framework to take a risk management approach at a high level, focusing on key functions of cybersecurity management which are broken down into categories and subcategories. References such as existing standards, guidelines and practices will be provided for each subcategory. A draft of the framework will be released in October.
TEAM-NB position paper on use of ISO 14971:2012	Risk management	Manufacturers	Describes the steps TEAM-NB members plan to verify where relevant if requirements of EN ISO 14971:2012 have been met. This should help manufacturers update their risk management procedures and files to maintain compliance with the Essential Requirements of the directives, when building on the presumption of conformity. The position paper can be found on the SoftwareCPR Standards Navigator web page.

TEAM-NB "Vision on Revision"	Regulation	Regulators, Manufacturers, Notified bodies	This document forms the input of TEAM-NB into the debate on The Revision of European Legislation on Medical Devices. Contributions came from BSI Germany, BSI UK, DEKRA Netherlands, TUV Austria, and TUV Sud. The report can be found on the SoftwareCPR Standards Navigator web page.
Report	Interoperabilit y	Medical device manufacturers, Hospitals, Regulators	AAMI/FDA Interoperability Summit report An AAMI/FDA sponsored summit meeting on medical device interoperability was held in late 2012. This report documents the discussion and identifies themes from the summit. This report can be found at http://www.aami.org/interoperability/Interoperability Summit publication.pdf
Report	Wireless	Hospitals, Medical device manufacturers	AAMI Wireless Workshop report A workshop with approximately 80 invited medical wireless experts was held in late 2012. This report documents the discussion and outcomes of this workshop. A follow-up meeting is planned for March 2013. This report can be found at http://www.aami.org/wireless/2012_Wireless_Workshop_publication.pdf
Presentation	Research	Medical device manufacturers	Medical Device Innovation Consortium (MDIC) Presentation from FDA and MDIC FDA and Life Science Alley have been collaborating on establishing a public-private partnership for research into regulatory science. A non-profit organization called the Medical Device Innovation Consortium has been created. This presentation by the FDA and the temporary director of the non-profit describes the need and the plans for this organization. This presentation can be found on the Standards Navigator web page.

Announceme	Interoperabilit y	Medical device manufacturers, Hospitals, Regulators	AAMI/UL collaboration on interoperability standards AAMI and UL have announced that they will collaborate on a series of standards for medical device interoperability. The press release announces the collaboration and its benefits. This announcement can be found at http://www.aami.org/news/2012/091712_press_AAMI_UL_Interoperability.pdf
Report	Security	Medical device manufacturers, Regulators	GAO report on FDA review of certain medical devices The General Accounting Office does investigations for the US Congress. In this report they reviewed how FDA reviewed implanted medical devices that used wireless communications for security vulnerabilities that could cause safety concerns. They looked at two devices that researchers had shown could be controlled by use of off-the-shelf radio devices. In their findings, they criticized FDA for not reviewing security capabilities in these devices, even though they determined that FDA had the authority to do so. This will certainly result in FDA increasing their scrutiny of security for these type of devices. Since a security vulnerability in a device that is wirelessly communicating over a network seems to surely pose a risk as well, it is likely that FDA will also increase security scrutiny of all devices that use wireless communications. Dr. Kevin Fu testified to the National Institute of Standards and Technology Information Security & Privacy Advisory Board that "Conventional malware is rampant in hospitals because of medical devices using unpatched operating systems. There's little recourse for hospitals when a manufacturer refuses to allow OS updates or security patches." A report of the meeting can be found in the MIT Technology Review http://www.technologyreview.com/news/429616/computer-viruses-are-rampant-on-medical-devices-in-hospitals/ The article states that "In September, the Government Accountability Office issued a report warning that computerized medical devices could be vulnerable to hacking, posing a safety threat, and asked the FDA to address the issue. The GAO report focused mostly on the threat to two kinds of wireless implanted devices: implanted defibrillators and insulin pumps. The vulnerability of these devices has received widespread press attention (see "Personal Security" and "Keeping Pacemakers Safe from Hackers"), but no actual attacks on them have been reported. Fu, who is a leader in researching the risks described in the GAO

them than without them. But cracks are showing," he said. (Fu was *Technology Review's* Innovator of the Year in 2009.)"

One of Dr. Fu's collaborators in research that showed an implanted defibrillator could be hacked was Dr. William Maisel who is now the Deputy Director for Science at CDRH. FDA staff has indicated that they are in the process of revising the FDA Cybersecurity Guidance. This guidance will likely include recommendations for manufacturer's security programs for devices and additional recommendations for security information to be provided during pre-market review of devices that are intended for use on a network. In addition, the guidance is now expected to provide information on when a security issue is reportable to the FDA and when a security event will result in a recall.

Another interesting bit of information in this report was the FDA response that they had hired a consultant (later determined to be McKinsey) to assess how they review software and make suggestions for improvements. This assessment is supposed to be completed by the end of 2012.

This report can be found at http://www.gao.gov/products/GAO-12-816

Report	Mobile medical devices	Medical devices manufacturers, Hospitals, Regulators	FCC report on Mobile Medical Devices The FCC created an independent mHealth Task Force, to research the barriers to rapid deployment of mHealth technology and develop recommendations to government and industry to address those barriers. This report documents the task force recommendations for achieving 5 goals: Goal 1: FCC should continue to play a leadership role in advancing mobile health adoption. Goal 2: Federal agencies should increase collaboration to promote innovation, protect patient safety, and avoid regulatory duplication. Goal 3: The FCC should build on existing programs and link programs where possible in order to expand broadband access for healthcare. Goal 4: The FCC should continue efforts to increase capacity, reliability, interoperability and RF safety of mHealth technologies. Goal 5: Industry should support continued investment, innovation, and job creation in the growing mobile health sector. Recommendations include: • greater collaboration with other US Federal agencies • promoting the availability of broadband for healthcare • harmonizing spectrum allocations for healthcare internationally • industry use of standards based technologies for transmitting authenticated messages and encrypted health information This report can be found on the Standards Navigator web page
Report	Health IT	Hospitals, EHR vendors, MD manufacturers	Institute of Medicine report – Health IT and patient safety The Institute of Medicine produced a report on the impact of Health IT on patient safety. The report had a number of recommendations for the Secretary of HHS. A presentation on the recommendations and the entire report are available at the SoftwareCPR Standards Navigator web page.

Regulation	Regulation	Medical device manufacturers, IVD	EU draft proposed new Medical Device Regulation and In-Vitro Device Regulation
		manufacturers	These draft regulations can be found at http://ec.europa.eu/health/medical-devices/files/revision_docs/proposal_2012_542_en.pdf - medical devices
			http://ec.europa.eu/health/medical-devices/files/revision_docs/proposal_2012_541_en.pdf - In-vitro devices

STANDARDS CURRENTLY UNDER DEVELOPMENT OR REVISION

	Topic	Use / Users	Description
IEC 62304 Amendme nt 1	Software Life Cycle	Medical Device manufacturers, Regulators	Amendment to the Medical Device Software Life Cycle standard. This standard is harmonized in the EU. The amendment addresses software safety classification and how to be compliant with legacy software. Current status: Comments received on the first CD are being resolved. Next step: Second CD or CDV will be circulated. Expected completion: January 2014
IEC 82304-1	Health Software	Medical device manufacturers, Regulators	New standard on Health Software: General Requirements. This standard is intended to be for standalone software products and to cover the product level requirements such as product validation, labeling, documents to be provided to the user, etc. Current status: Second CD has been circulated. Ballot closing February 28, 2014. Next step: Comments on second CD will be resolved and a CDV circulated. Expected completion: 2015

IEC 62366-1	Medical devices	Medical device manufacturers, Regulators	The standard on human factors engineering is being revised and divided into two documents. The first is a standard that includes requirements for the process. The second will be a technical report providing information about good practices for implementing the human factors process. This document is the first part. Current status: Comments have been resolved on the first CD and a second CD circulated. Next step: Comments received on the second CD. Expected completion: 2015
ISO 13485	Medical devices	Medical device manufacturers, Regulators	The Quality Management System standard is being revised to bring it into alignment with ISO 9001:2008. Current status: Comments have been received on the first CD and are being resolved. Next step: Second CD or DIS. Expected completion: 2015