Softwarové normy

Normotvorná činnost

Norma

Dohoda o vlastnostech výrobků nebo procesů s cílem zaručení určitých vlastností výrobků či procesů

Cílem je kompatibilita, interoperabilita nebo záruka jistých vlastností (kvality)

Příklady

Norma – tvar jazyka (pravopis)

Jednotky délky,

Definice šroubení, tvar konektorů

Vlastnosti komunikačního protokolu

Definice postupu zajišťujícího kvalitu

Dodržování norem není apriorní povinnost

V soukromém sektoru je dodržování norem věcí obchodní dohody

Norma se stane povinnou, jestliže se stane zákonem

Druhy norem

- Proprietální – stanovena podnikem (př. zprvu C# u Microsoftu), protiváha k C++
- De Facto – obecně se dodržuje, neexistuje oficiální definice
- Oborová – definována nějakýcm oborovým orgánem, v SW dnes obvykle IEEE nebo IEC
- Národní – přijatá (definována) národním úřadem (DIN, ANSI, ČSN, BS..)
- Mezinárodní – přijatá ISO.

Evoluce norem
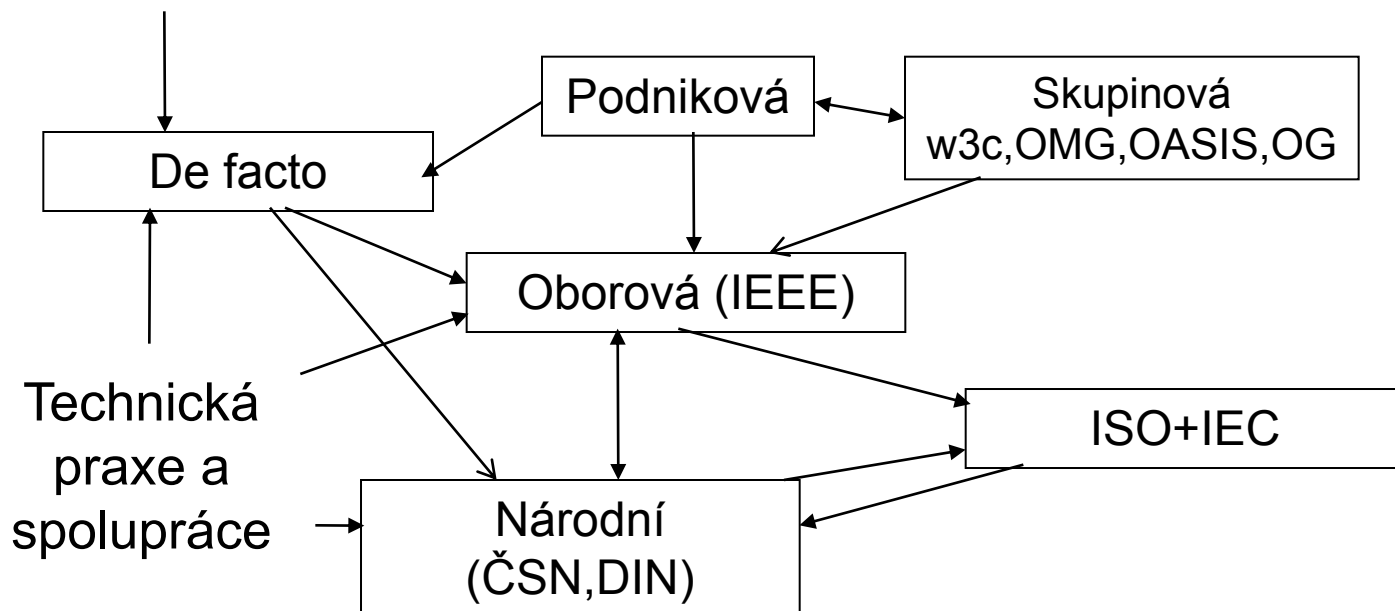
Po pěti létech se norma považuje za možná zastaralou a měla by se aktualizovat nebo znovu potvrdit. Proto se za kódem normy (autorská resp. odpovědná instituce, číslo) uvádí datum přijetí např. ISO 20000:2010. Mnoho norem se používá i bez toho

Definice a postup přijímání normy je komplikovaný proces. Pracovní skupiny schvalovací orgány a řada dalších institucí

Národní a ISO normy

- Osvědčené národní normy jsou transformovány do ISO normy následujícími opatřeními
  - Převod do formátu ISO
    - Editace, grafika, jazyk (angličtina), provádí akreditované nadnárodní instituce
    - Věcná doplnění
  - Oficiální přijetí výborem pro danou oblast
- ISO norma je přijata jako národní po „překladu" provedeném národní standardizační institucí, značí se ISO ČSN

Nevýhody norem

- Zastaralost, někdy naopak tlak na zbytečné inovace
  - Norma se aktualizuje nbo znovu potvrzuje každých pět let
- Nedotaženost, nekvalita (definována příliš brzy)
- Rozsáhlost, příliš pravidel pro každou drobnost
- Časté změny, konkurující si normy (UML, normy Work flow managemet group, BPEL)
- Skrytě podporuje výrobky těch, co jsou u toho a to jsou hlavně velké podniky (malé se nemohou účastnit vleklých jednání)
- V informatice jsou hory norem a to může ztěžovat spolupráci s uživateli a nemusí být to být zvládnutelné v menší firmě

Instituce

- **INMZ Úřad pro technickou normalizaci, metrologii a státní zkušebnictví**

- Informační centrum

- Biskupský dvůr 5
110 02 Praha 1
Tel.: 221 802 120
ISO International Standards Organization, Ženeva

ISOnormy

- [ISO/IEC 90003:2004](#)Software engineering -- Guidelines for the application of ISO 9001:2000 to computer software
- [ISO 9000:2000](#)Quality management systems -- Fundamentals and vocabulary
- [ISO 9001:2000](#)Quality management systems – Requirements
- [ISO 9004:2000](#)Quality management systems -- Guidelines for performance improvements[ISO 10002:2004](#)Quality management -- Customer satisfaction -- Guidelines for complaints handling in organizations
- [ISO/IEC 9126-1:2001](#) Software engineering -- Product quality -- Part 1: Quality model[ISO/IEC TR 9126-2:2003](#)Software engineering -- Product quality -- Part 2: External metrics
- [ISO/IEC TR 9126-3:2003](#) Software engineering -- Product quality -- Part 3: Internal metrics
- [ISO/IEC TR 9126-4:2004](#)Software engineering -- Product quality -- Part 4: Quality in use metrics
- [ISO/IEC 14143-1:1998](#)Information technology -- Software measurement -- Functional size measurement -- Part 1: Definition of concepts
- [ISO/IEC 14143-2:2002](#)Information technology -- Software measurement -- Functional size measurement -- Part 2: Conformity evaluation of software size measurement methods to ISO/IEC 14143-1:1998

ISO/IEC 15288

- **IEC International Electrotechnical Commission**
  - **Doporučení a normy pro elektrotechniku**
- ISO/IEC 15288 The System Life Cycle Process
  - standard including the 21 substandards for the 21st century

ISOnormy, historie

- ISO/IEC TR 14143-3:2003Information technology -- Software measurement -- Functional size measurement -- Part 3: Verification of functional size measurement methods
- ISO/IEC TR 14143-4:2002Information technology -- Software measurement -- Functional size measurement -- Part 4: Reference model
- ISO/IEC TR 14143-5:2004Information technology -- Software measurement -- Functional size measurement -- Part 5: Determination of functional domains for use with functional size measurement
- ISO/IEC 12207:1995Information technology -- Software life cycle processes
- ISO/IEC 12207:1995/Amd 1:2002
- ISO/IEC 12207:1995/Amd 2:2004
- ISO/IEC 14598-1:1999Information technology -- Software product evaluation -- Part 1: General overview
- ISO/IEC 14598-2:2000Software engineering -- Product evaluation -- Part 2: Planning and management
- ISO/IEC 14598-3:2000Software engineering -- Product evaluation -- Part 3: Process for developers
- ISO/IEC 14598-4:1999Software engineering -- Product evaluation -- Part 4: Process for acquirers

ISO normy, korekce

- [ISO/IEC 14598-5:1998](#)Information technology -- Software product evaluation -- Part 5: Process for evaluators
- [ISO/IEC 14598-6:2001](#)Software engineering -- Product evaluation -- Part 6: Documentation of evaluation modules
- [ISO/IEC 16085:2004](#)Information technology -- Software life cycle processes -- Risk management
- [ISO/IEC 15504-1:2004](#)Information technology -- Process assessment -- Part 1: Concepts and vocabulary
- [ISO/IEC 15504-2:2003](#)Information technology -- Process assessment -- Part 2: Performing an assessment
- [ISO/IEC 15504-2:2003/Cor 1:2004](#)
- [ISO/IEC 15504-3:2004](#)Information technology -- Process assessment -- Part 3: Guidance on performing an assessment
- [ISO/IEC 15504-4:2004](#)Information technology -- Process assessment -- Part 4: Guidance on use for process improvement and process capability determination

ISO normy

- [ISO/IEC TR 15504-5:1999](#)Information technology -- Software Process Assessment -- Part 5: An assessment model and indicator guidance

- [ISO/IEC TR 9294:1990](#)Information technology -- Guidelines for the management of software documentation

- [ISO/IEC 10746-1:1998](#)Information technology -- Open Distributed Processing -- Reference model: Overview

- [ISO/IEC 12119:1994](#)Information technology -- Software packages -- Quality requirements and trstiny

- [ISO/IEC TR 14759:1999](#)Software engineering -- Mock up and prototype -- A categorization of software mock up and prototype models and their use

ISO normy

- ISO/IEC 14764:1999Information technology -- Software maintenance

- ISO/IEC TR 15271:1998Information technology -- Guide for ISO/IEC 12207 (Software Life Cycle Processes)

- ISO/IEC 15939:2002Software engineering -- Software measurement process

- ISO/IEC TR 16326:1999Software engineering -- Guide for the application of ISO/IEC 12207 to project management

- ISO/IEC 18019:2004Software and system engineering -- Guidelines for the design and preparation of user documentation for application software

ISO normy, příklady

- ISO/IEC 19761:2003 Software engineering -- COSMIC-FFP -- A functional size measurement Metod

- ISO/IEC 20926:2003 Software engineering -- IFPUG 4.1 Unadjusted functional size measurement method -- Counting practices manual

- ISO/IEC 20968:2002 Software engineering -- Mk II Function Point Analysis -- Counting Practices Manual

- ISO 20000 IT Service management

- IFPUG FSM Method: ISO/IEC 20926:2009 Software and systems engineering - Software measurement - IFPUG functional size measurement method

ISO 20000, IT service management

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- **What Is ISO 20000?**
- ISO 20000 is the international standard for IT Service management.
- The standard actually comprises two parts: ISO/IEC 20000-1 and ISO/IEC 20000-2. ISO 20000-1 is the 'Specification for Service Management, and it is this which is certifiable against. ISO 20000-2 is the ' Code of practice for Service Management', and descibes best practices, and the requirements of Part 1.
-
  What Was BS15000?
- ISO 20000 is in fact based upon an original pair of documents, BS15000-1/2, which were published by BSI in 2002 and 2003 respectively. An earlier version of BS15000-1 was first published in 2000. Even this, however, was not the earliest iteration. As far back as the 1980's a BSI group called the 'Service Management Group' was at work defining ITSM processes.
- An example fo this work is provided by the following diagram, which illustrates the state of play in 1998:
-

ISO 20000, IT service management

-
- **The Standard Evolves**
- By the time the new release of BS15000 was published in 2002, the framework had been harmonized with other international standards, to embrace the familiar PDCA (Plan-Do-Check-Act). This approach is illustrated below:
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- The scene was thus set for ISO 20000, which was published at the end of 2005.
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- **ISO 20000 Resources**ISO 20000 Central is designed to provide a range of information to support the standard. In addition, a number of support resources have been identified. These, as well as several sources of the standards themselves, can be viewed via the selections on the right hand side.
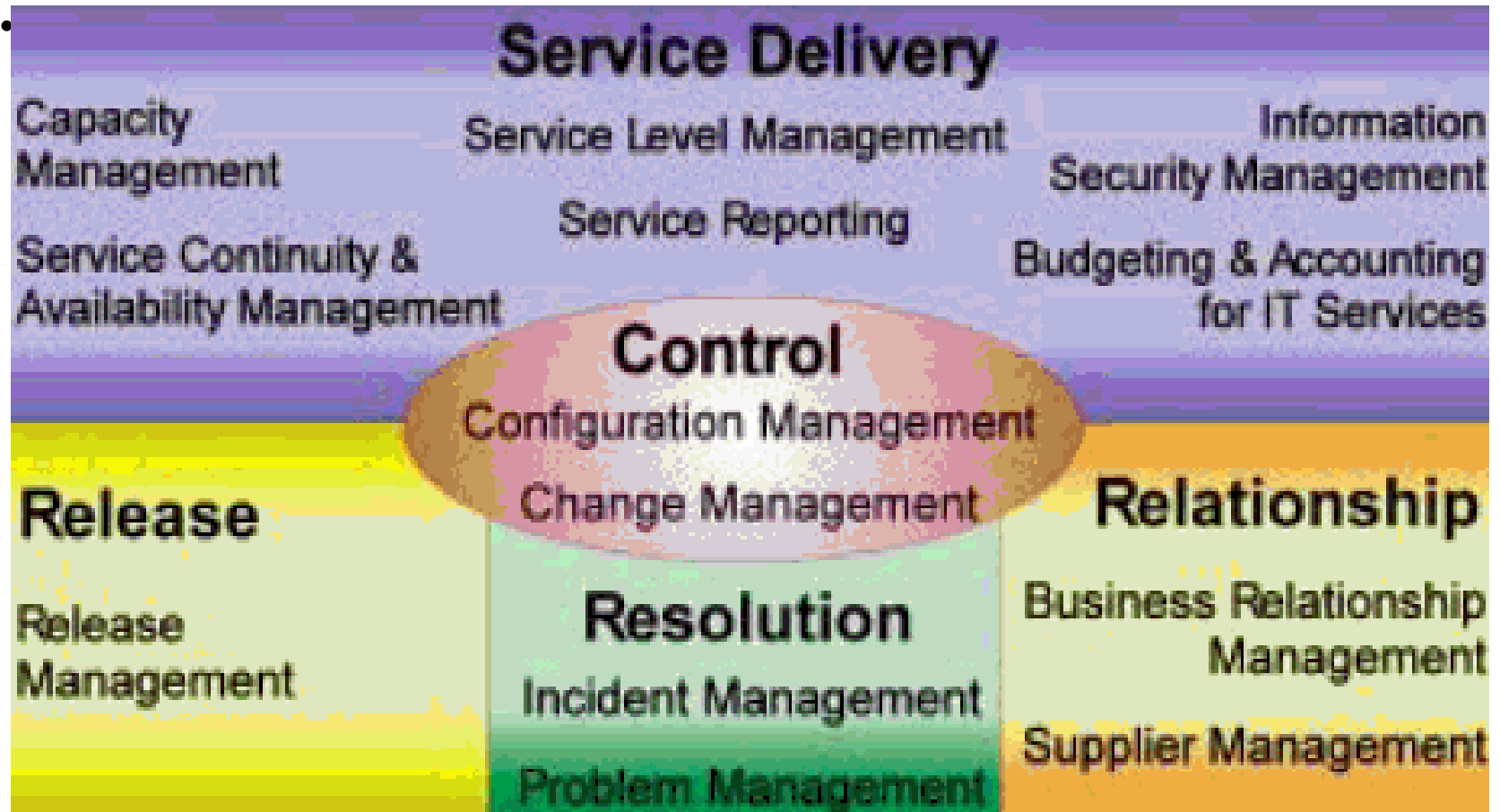- (c) ISO 20000 Central 2005

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(c) ISO 20000 Central 2005

ISO 20000, IT service management

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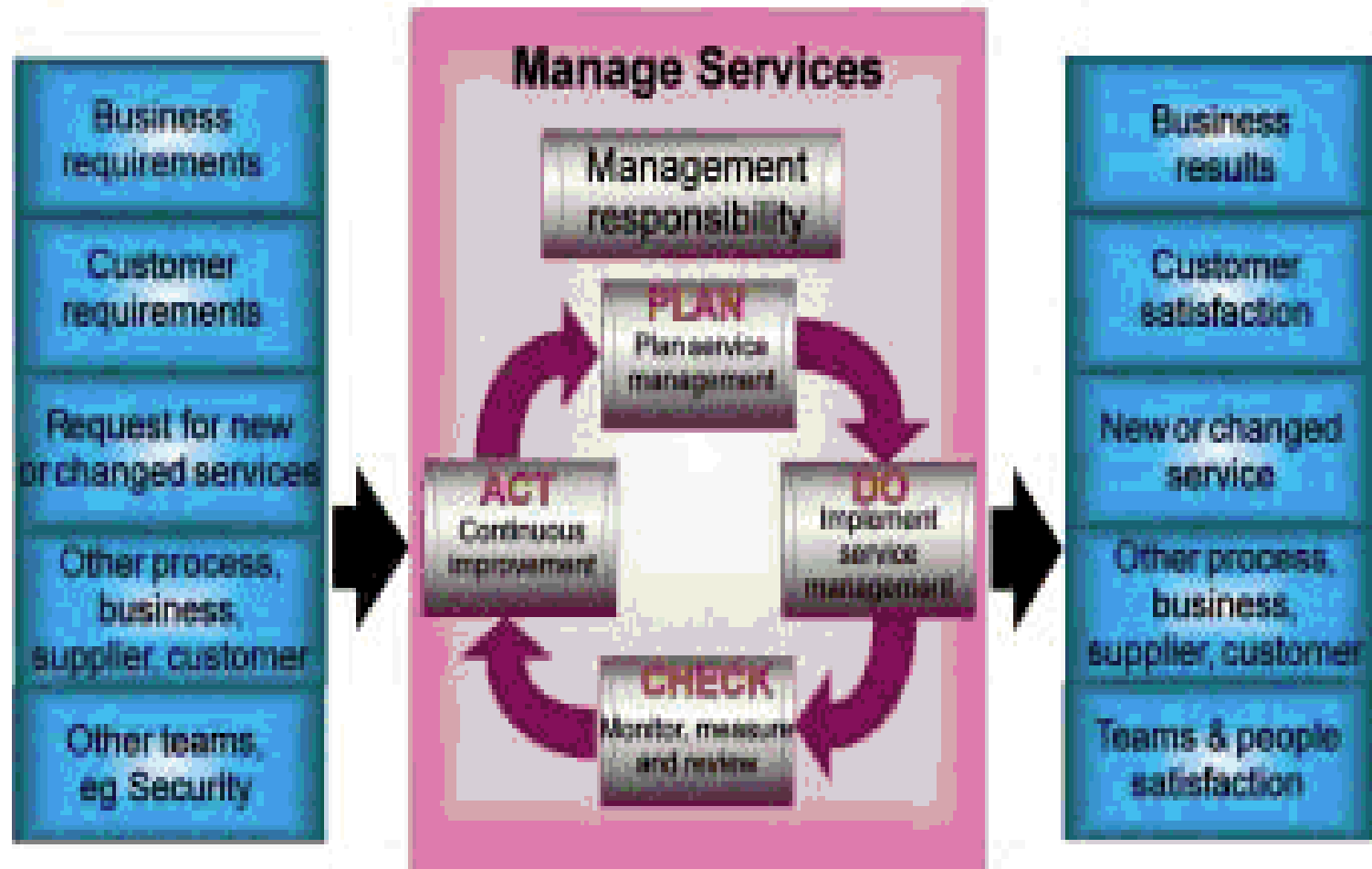
Vyšel český materiál pro ISO 20000

- Vydal ÚNMZ

Požadavky na dokumentaci

- **ISO/IEC 26513:2009**
  - *Systems and software engineering – Requirements for testers and reviewers of user documentation,*
- **ISO/IEC 26514:2008**
  - **Systems and software engineering -- Requirements for designers and developers of user documentation**
- **ISO/IEC 15910:1999**, modernizuje se
  - **Software user documentation process (1999)**
- ISO/IEC 18019:2003
  - Guidelines for the design and preparation of user documentation for application software.
- ISO/IEC TR 9294:2005
  - Guidelines for the management of software documentation.
-

Dokumentace

- ISO/IEC 15289:2006
  - Systems and Software Engineering — Content of systems and software life cycle process information products (Documentation).
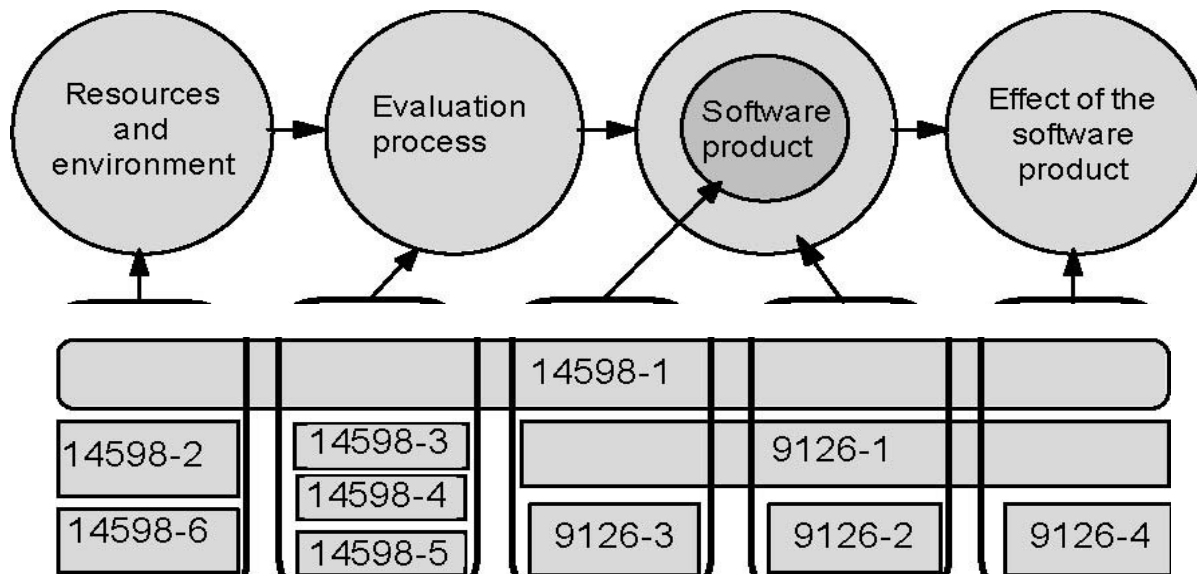
Připravované normy

- ISO 250xx
  - Sada norem ke kvalitě softwaru, náhrada ISO 9126, ne vše je hotovo a přijato

Hodnocení SW

- **ISO/IEC 14598: Software Engineering - Product evaluation – (**

- **Part 1: General** overview, Part 2: Planning and management, Part 3: Process for developers, Part 4:

- Process for acquirers, Part 5: Process for evaluators, Part 6: Evaluation module).

Normy pro kvalitu

Nedávno schvánené, někdy i ještě nepřijaté normy

- ISO 27000 will contain the **fundamentals and vocabulary**, in other words careful definitions for the specialist terms used throughout the ISO 27000-series standards.

- The scope is "to specify the fundamental principles, concepts and vocabulary for the ISO/IEC 27000 (information security management system) series of documents."

- Information security, like most technical subjects, is evolving a complex web of terminology. Few authors take the trouble to define precisely what they mean, but this is unacceptable in the standards arena as it leads to confusion and devalues formal assessment and certification.

- ISO 27000 will presumably be similar to other vocabulary and definitions standards but will hopefully become a generally-accepted reference for information security terms amongst the information security profession. It will probably absorb guidelines such as **ISO/IEC Guide 2:1996 "Standardization and related activities – General vocabulary"** and **ISO/IEC Guide 73:2002 "Risk management – Vocabulary – Guidelines for use in standards"**.

- We will of course pass on more information on ISO 27000 here as soon as we receive it ...

International Standards for Software & Systems Documentation

Ralph E. Robinson
R^2 Innovations

ISO má složitou strukturu

- Vrcholové instituce
- Pro určitou oblast se jmenuje výbor
- Ten jmenuje pracovní skupiny WG, které to odpracují
- WG může jmenovat „study groups"

Benefits of WG 2 Standards, documentation

WG 2 standards

- Can be used for all forms of product documentation…not just software products

- Can be used in part or in whole

- Contain recommendations (guidelines) and not requirements

- Contain the consensus of best practices and guidelines developed by the direct participation and contributions of professional technical communicators from around the world

- Maintained by revisions or "re-confirmations"

Current WG 2 Standards

- **ISO/IEC 9127:1988** - User documentation and cover information for consumer software packages

- **ISO/IEC TR 9294:2005** - Guidelines for the management of software documentation

- **ISO/IEC 15910:1999** - Software user documentation process (reconfirmed 2004)
  - ➢ Adapted from AS/NZS 4258:1994

Current WG 2 Standards

- **ISO/IEC 18019:2004** - Guidelines for the design and preparation of user documentation for application software

  ➢ Developed from BS 7649:1993 and BS 7830:1996 (withdrawn 2005)

- **ISO/IEC FDIS 15289:2006** - Content of systems and software life cycle process information products (Documentation), neaktualizováno

Standardy dokumentace pro uživatele, přijaté nebo schvalované

- **ISO/IEC 26511 Software and systems engineering -- User documentation requirements for managers**

- ISO/IEC 26512. Software and systems engineering. Requirements for acquirers and suppliers of user documentation

- ISO/IEC 26513:2009, *Systems and software engineering – Requirements for testers and reviewers of user documentation*

- **ISO/IEC 26514:2008 Systems and software engineering -- Requirements for designers and developers of user documentation**

Návrhy norem dokumentace

- **ISO/IEC NP 26516 Software and Systems Engineering - Reference model for software and systems product lines**

- **iSO/IEC NP 26517 Software and Systems Engineering - Tools and methods of requirements engineering and management for product lines**

WG 2 Standards and User Documentation Development

- **Defining Documentation**

  ➢ Deciding the most appropriate forms of documentation and the types of guidance that could be provided (18019)

- **Setting Objectives**

  ➢ Collecting the project <u>requirements</u> (usability, accessibility, translation, packaging, standards, legal, costs, quality, approvals, resources, etc) and preparing the documentation proposal (9127/15910/18019)

- **Planning**

  ➢ Creating the documentation plan and conducting reviews (15910/18019)

WG 2 Standards and User Documentation Development

- **Analysis & Design**
  - ➢ Identifying audiences, tasks, information, usability & accessibility, the document suite, document structures and style guides (18019 + Annex F (Writing style guides))

- **Development & Review**
  - ➢ Preparation, review and updating of the draft. Preparation of the document masters, localization, translation and archiving (18019)

- **Evaluation & Updating**
  - ➢ Evaluation and updating of the documentation (18019 + Annex C (Evaluation))

WG 2 Standards and User Documentation Development

- **Design of the documentation**
  - ➢ Copyright and version details, documentation overview, process and task descriptions, explanations, messages, definitions, concepts, navigation, presentation, icons and illustrations (9127 & 18019 + Annexes B (Design checklist) & E (Printed documentation)).

WG 2 – What's next?

SC 7 Study Group on User Documentation Standards

- Established at SC 7 Montreal Plenary (May 2003)
- Reported on at SC 7 Helsinki Plenary (May 2005)
  - ➢ Recommended restructuring and revision of S/W documentation standards based upon user's needs
- Work already underway in WG 2 , but help is needed
  - ➢ Current standards will not be revised, but content (including IEEE 1063) will be revised and re-used in a new suite

New WG 2 Standards,
dokumentace pro vývojáře a pro uživatele

Target Audience	User Documentation			Software & Life Cycle Documentation		
	Project	Editor	Priority	Project	Editor	Pr a pro iority
Documentation Managers	**ISO/IEC 26511**	Australia (NWI)	1	**ISO/IEC 26521**	New Zealand	2
Documentation Acquirers & Suppliers	**ISO/IEC 26512**	tbd	4	**ISO/IEC 26522**	tbd	4
Documentation Testers & Assessors	**ISO/IEC 26513**	United Kingdom	2	**ISO/IEC 26523**	tbd	3
Documentation Designers & Developers	**ISO/IEC 26514**	USA (NWI)	1	**ISO/IEC 26524**	Canada	3

Jak na normy

Nelze plně zvládnout v menší firmě, často ovlivněno konkurenčním bojem

- – Zvážit, zda jsou (ty nejnovější) potřeba (?poslední verze Javy), Věc dohody!
- – Řešit pomocí knihoven, vývojových nástrojů, a podpůrných systémů
- – Co zbude to případně outsourcovat
- – Naučit se a případně vyvinout vlastní nástroje
- Nemusíme vše, lze dohodnout jen část