Conformity assessment

José Luis Fuertes, Loïc Martínez

The concept

Definitions (ISO/IEC 17000:2004)

3

Conformity assessment

- A demonstration that **specified requirements** relating to a product, process, system, person or body **are fulfilled**

Conformity assessment system

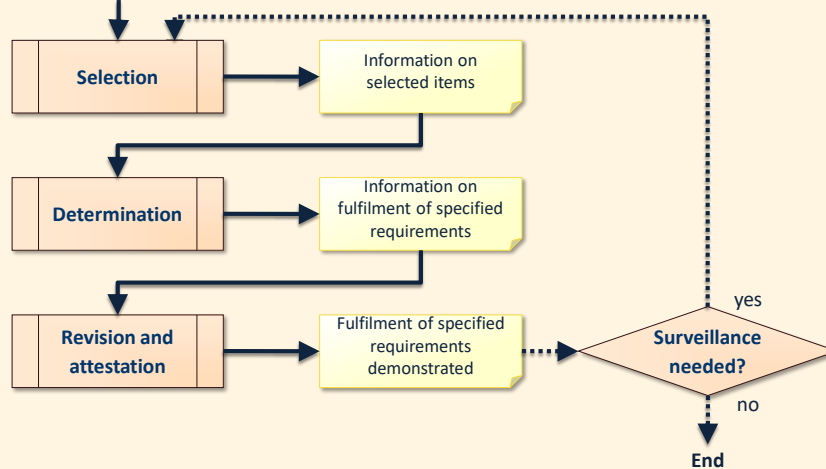- A set of **rules, procedures and management** for carrying out conformity assessment

Conformity assessment scheme

- A conformity assessment **system related to specified objects** to which the same specified requirements, rules and procedures apply
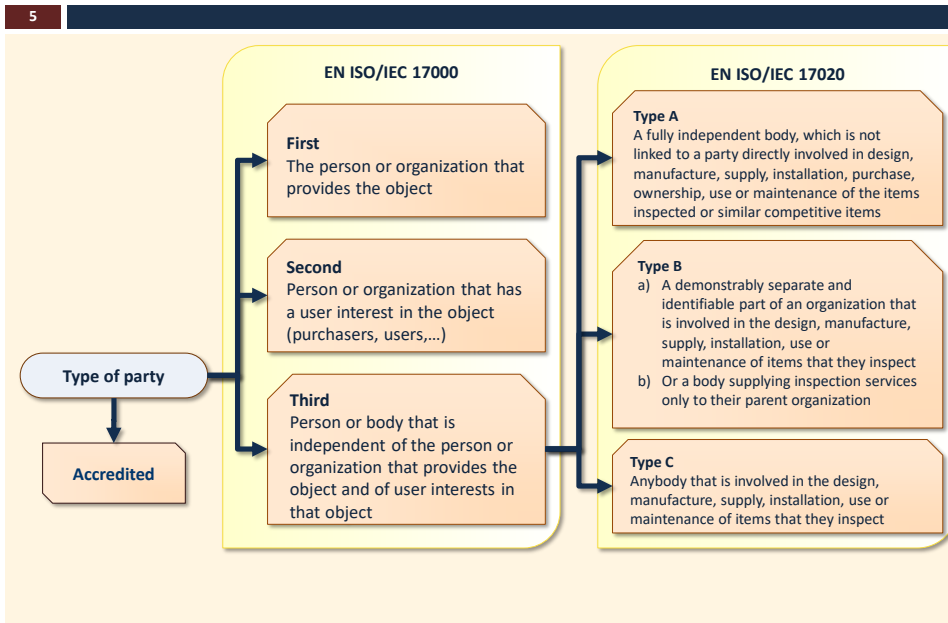
The functional model

4

Need to demonstrate fulfilment of specified requirements

Selection → Information on selected items

Determination → Information on fulfilment of specified requirements

Revision and attestation → Fulfilment of specified requirements demonstrated ···· **Surveillance needed?**

yes

no

End

Types of parties

5

	EN ISO/IEC 17000	EN ISO/IEC 17020

EN ISO/IEC 17000

First
The person or organization that provides the object

Second
Person or organization that has a user interest in the object (purchasers, users,…)

Third
Person or body that is independent of the person or organization that provides the object and of user interests in that object

EN ISO/IEC 17020

Type A
A fully independent body, which is not linked to a party directly involved in design, manufacture, supply, installation, purchase, ownership, use or maintenance of the items inspected or similar competitive items

Type B
a) A demonstrably separate and identifiable part of an organization that is involved in the design, manufacture, supply, installation, use or maintenance of items that they inspect
b) Or a body supplying inspection services only to their parent organization

Type C
Anybody that is involved in the design, manufacture, supply, installation, use or maintenance of items that they inspect

Type of party

Accredited

Conformity assessment systems

6

First party

- Generic
- **Self Declaration of Conformity (SDoC)**

Second party

- Generic

Third party

- Generic
- **Inspection**
- **Certification**

Conformity assessment and ICT accessibility

7

Requirements
- Accessibility standards (official and non-official)
- Examples: EN 301 549, ISO 9241-171, WCAG 2.0

Object of assessment
- ICT product that has to be accessible (software, web, mobile phone…)

Parties
- According to industry: first party
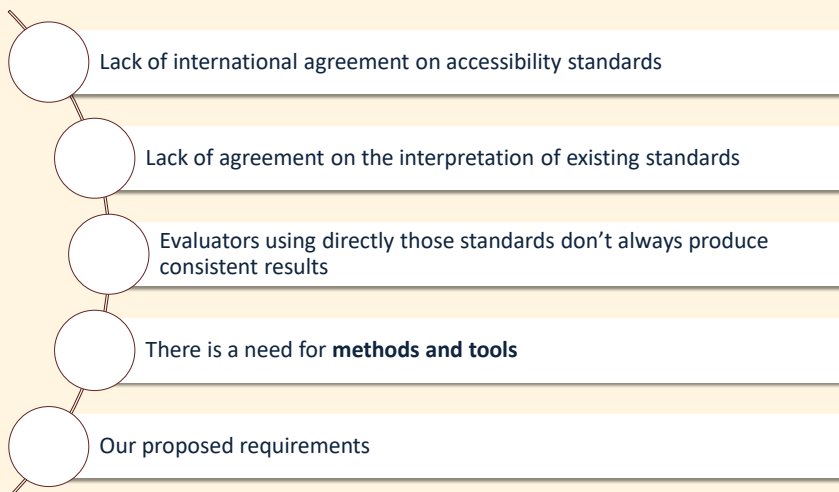- According to persons with functional diversity: third party
- The case of the web…

Systems and schemes
- No specific one exists!!

Requirements for a system / scheme

Problems of assessing ICT accessibility

9

Lack of international agreement on accessibility standards

Lack of agreement on the interpretation of existing standards

Evaluators using directly those standards don't always produce consistent results

There is a need for **methods and tools**

Our proposed requirements

Requirements: selection

10

Selection of the **object of assessment**

- Provide guidance on how to divide an ICT product into separate and simpler elements
- Define sampling techniques
- Tool support for decomposing the product and applying sampling

Selection of **requirements**

- Preferably: official standards of ICT accessibility
- Enable tailoring of the checklist to different levels

Selection of **procedures for determination**

- (see determination)

Requirements: determination

Determination of **each requirement**

- Precisely define how to evaluate each requirement (inspection or testing)
- Clearly state assessment values for each requirement

Tool support

- Tools to help evaluators on specific requirements
- Tools to record ratings for each requirement for each software element

Workgroup-based determination

- Support for dividing the workload
- Manage the progress made by the evaluators
- Tool support for workgroups

Requirements: review and attestation

Review

- Detail how to aggregate the results of evaluating separate requirements and overall assessments
- Tool support for aggregation

Attestation

- How to provide a detailed attestation
- Including report templates
- Enable the use of a machine-readable semantic language
- Tool support for report generation

Requirements: surveillance

13

Decision on surveillance

- Support for decision making on whether an ICT product requires surveillance or not

Details of surveillance process

- Support for determining the rate of surveillance activities
- Support for dealing with changes in the assessment results

The case of the web

General situation

15

Requirements

- Web Content Accessibility Guidelines (WCAG)

Object of the assessment

- Web pages, web sites, web applications…

Systems and schemes

- There are several tools (many for WCAG 1.0)
- Only one documented scheme: UWEM (WCAG 1.0)
- What about WCAG 2.0?

Why evaluation is needed

16

The non accessibility of a design is not obvious

- It is difficult to quickly detect accessibility problems for a "normal" person using her usual browser
- An evaluation is needed

Why is it difficult to detect problems?

- Even if the site is accessible for one person, it may not be for others
- Persons with functional diversity (disability)
- Elderly
- Illiteracy and technological illiteracy
- Different environments
- Technical limitations: old devices, slow devices, new devices…

Automatic or manual assessment

17

Automatic	Manual

Advantages

- Quick and systematic
- Large number of criteria simultaneously evaluated
- Global result

Disadvantages

- Complex interpretation of results
- The language of the tool
- Many criteria require an additional manual evaluation

Advantages

- Better understood problems
- Comparison of different solutions
- The only way for some criteria
- Easy to quickly detect main issues

Disadvantages

- More effort and time
- Need of tools and different configurations
- Human judgement is required
- Possible accessibility problems must be better understood
- Difficult to simulate issues
- Some failures may not be detected

Some tools

18

"History"

- Bobby
- TAW
- Hera
- Hera FFX

Specific

- Colour Contrast Analyser
- PEAT

Recent tools

19

Catalogue

- Web Accessibility Evaluation Tools List
- https://www.w3.org/WAI/ER/tools/

Examples

- aXe
- CynthiaSays
- Functional Accessibility Evaluator
- Tenon
- WAVE

Functional Accessibility Evaluator 2.0

WAI WCAG-EM
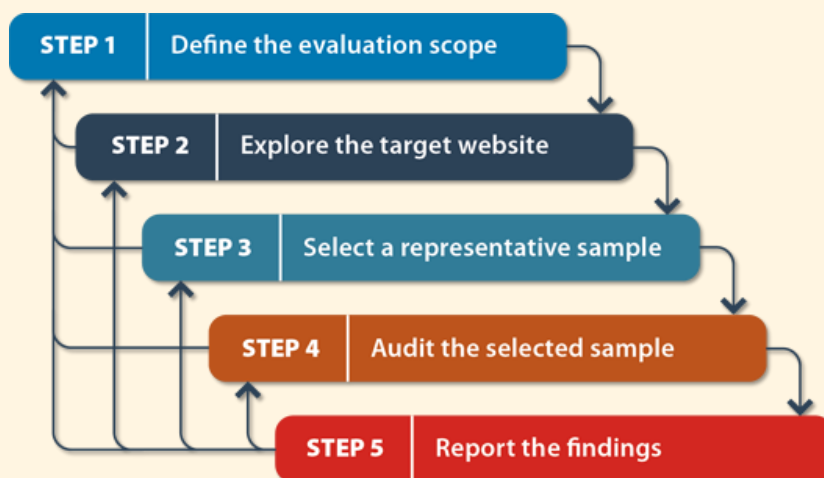
20

Evaluation Methodology Task Force

- Effort coordinated by W3C-WAI
- Participation of international experts
- http://www.w3.org/WAI/ER/2011/eval/eval-tf

The result

- An internationally harmonized methodology:
  - "*Website Accessibility Conformance Evaluation Methodology*"
- For assessing the accessibility of web sites according to WCAG 2.0
- Supporting different contexts (SDoC, third-party assessment…)
- Working group note: July 2014
  - http://www.w3.org/TR/WCAG-EM/
- WCAG-EM Report tool

WAI WCAG-EM: evaluation procedure

21

STEP 1 | Define the evaluation scope
STEP 2 | Explore the target website
STEP 3 | Select a representative sample
STEP 4 | Audit the selected sample
STEP 5 | Report the findings

Source: http://www.w3.org/TR/WCAG-EM/#procedure

Conformity assessment

José Luis Fuertes, Loïc Martínez