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TRAINING ACADEMY

WEBINAR

4 May 2023

10:00 – 12:00 CEST

Training Session **1**

Introduction to Standardisation

Register now!



Funded by
the European Union



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TRAINING ACADEMY

Training Session 1: Introduction to Standardisation

Nicholas Ferguson

COMMpla, HSbooster.eu Coordinator



The HSbooster.eu has received funding from the European Union's Horizon Europe Framework Programme (HORIZON) - under grant agreement no 101058391.



EU Valorisation Week: New code of practice on standardisation in the European Research Area

- Knowledge, know-how and innovation – key for **long-term competitiveness**
- Standards key for getting innovative technologies and products **to market**
- “Standards are everywhere”** Clean Hydrogen Alliance, De-carbonisation of industry
- Standards is relevant for **all stages of research projects** – from proposal, project start to final stages
- More training and support to improve knowledge and expertise in standardisation.**
- Standards can open up markets, **a lack of standards can close markets**

27April 2023, EU Valorisation Week

Code of Practice on Standardisation – 27c

- Training in negotiation skills and policy work: training related to stakeholder engagement and participation in standards development committees should be encouraged. **Partners may find relevant information on support via the HSBooster.eu portal***

Three wishes –

- Innovators – when working on ground-breaking tech- make sure standardisation is part of your project
- Research – Standards should be covered in research projects so it is supported by a broad base of stakeholders
- Universities – Education to form the next generation of standards professionals is needed.

- Maive Rute, Deputy Director-General and Chief Standardisation Officer, Directorate-General Internal Market, Industry, Entrepreneurship and SMEs, European Commission



HSbooster.eu Service Matrix



Facilitating R&I innovation related stakeholders in EU projects towards EU standardisation and ensuring two-way flow of information that can contribute to identification of new areas for standardisation.



Standardisation Training Academy

Online training material and monthly webinars to boost expertise in standardisation






More on the courses and materials from Ivana in a moment

10 training webinars by December 2023

- EU Standardisation System – May 2023
- Negotiating in Standards – Serious gaming – June 2023
- Standards in Use – June 2023
- Consortia & company based standardisation – June 2023
- Many more topics

Academy material available online

Jumpstart your experience with our training packs!

 For beginner users New to standards? Check out our beginner-level resources! Gain a foundational understanding of standardisation with easy-to-follow resources. Perfect for both seasoned professionals and beginners starting out in their careers. Start learning today!	 For intermediate users Ready to level up your standardisation knowledge? Our intermediate-level resources provide practical insights and strategies to deepen your understanding and take your skills to new heights. Whether you're a pro or a newcomer, start exploring our resources today and unlock your potential in standardisation!	 For advanced users Ready to learn from real-world experiences in standardisation? Our advanced-level resources feature in-depth case studies and practical examples from industry experts. Gain valuable insights and apply lessons to your own work. Explore now and take your skills to the next level!
Start learning today!	Explore now!	Level up your skills now!

Browse the training catalog for the resources you need

Showing 1 - 8 out of 9 training contents found

Level of expertise <input checked="" type="checkbox"/> Beginner 1 <input type="checkbox"/> Beginner 2 <input type="checkbox"/> Intermediate <input checked="" type="checkbox"/> Advanced 1 <input type="checkbox"/> Advanced 2	Resource Impact of standards on market creation: Case of medical/healthcare robot HAL by Cyberdyne Author: Yoko Ikeda, Michiko Iizuka Created on: March 2023	Level of expertise Advanced 1 Format Case Study
Training format <input type="checkbox"/> Case Study <input type="checkbox"/> Training Course	Resource Unlocking new value from urban biowaste – VALUEWASTE & CWA 17866:2022 Author: Gemma Castejón, Martín Soriano Created on: March 2023	Level of expertise Advanced 1 Format Case Study
	Resource Classifications of Standards Author: Ivana Mijatovic, Biljana Tosic Created on: March 2023	Level of expertise Beginner 1 Format Training Course

<https://hsbooster.eu/training-academy>

Improving expertise in standardisation for R&I project consortia

Agenda and Speakers



HSbooster.eu
TRAINING ACADEMY

Training Session 1 **4 May 2023** 10:00 - 12:00 CEST
Introduction to Standardization




SPEAKER
Nicholas Ferguson
COMMpla, HSbooster.eu
Coordinator



TRAINER
Ivana Mijatovic
University of Belgrade



- 10:00  **HSbooster.eu Introduction and Welcome Note** – *Nicholas Ferguson, COMMpla, HSbooster.eu Coordinator*
- 10:10  **HSbooster.eu Training Academy in a Nutshell** – *Ivana Mijatovic, University of Belgrade*
-  **1st Training 1st Session**
-  **Mentimeter Session**
- 10:40  **2nd Training Session**
- 11:05 **Short Break**
- 11:10  **2nd Mentimeter Session**
-  **3rd Training Session**
-  **3rd Mentimeter Session**
- 11:40  **Q&A and Closing**
- 12:00 **End**

Participants

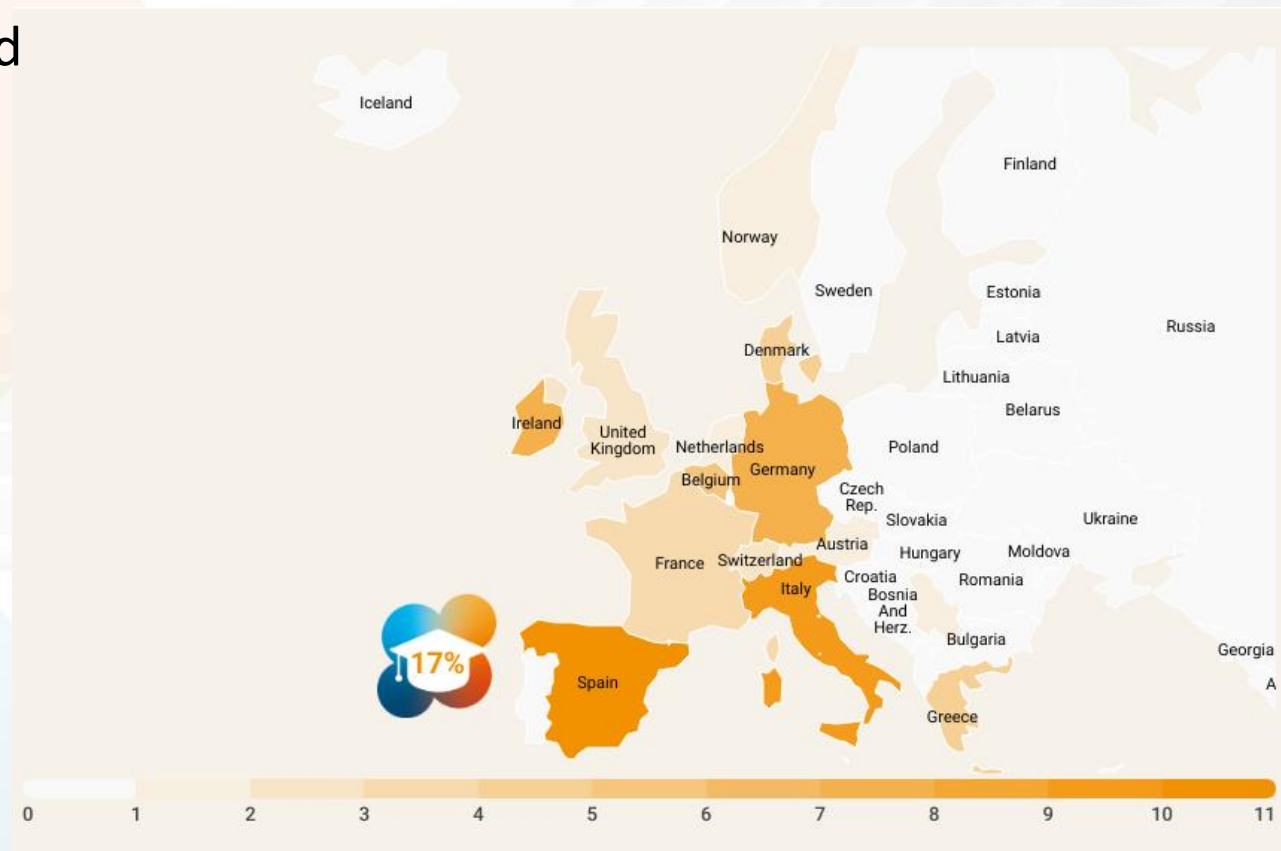
65 Registered Participants

19 Countries

Spain
Italy
Germany
Ireland
Belgium

25 R&I projects represented

ASAI (EISMEA)	IRIS
AutoFAIR	ITN-INSPIRE
BOW	JIDEP
CancerPrev	NIGHTINGALE
ColoMARK	PERSEO
DigInTrace	PIANO
EASI- STRESS	QLUSTER
FRONTIER	StandICT.eu
GREEN-LOG	STAR
HERCCULES	SWForum.eu
HiStabJuice	SYNTHEMA
Hsbooster.eu	Train2Wind
IOTAC	



Housekeeping

- 🔗 This event is being recorded in its entirety. A link to the full recordings will be shared with participants afterwards
- 🔗 All presentations will be available at the HSbooster.eu website straight after the webinar
- 🔗 Please **don't activate your microphone and videos unless the host gives you permission**
- 🔗 **Please do ask questions.** Use the [chat](#) for any questions, and we'll also try to answer things directly in the chat.
- 🔗 If you do not see the buttons at the bottom of the Zoom window, move the mouse on that window and buttons will appear
- 🔗 If you experience bad quality in audio, try switching off your video (webcam button at the bottom of your Zoom screen)
- 🔗 Participate the interactive poll at Menti.com

Mentimeter Sessions



- Please name three words that you associate with standards

<https://www.menti.com/alwi6ptw678g>

The voting code 11 83 01 7 is valid now and expires in 2 days.



- Please name the National Standardisation Body in your country.

<https://www.menti.com/al2tf8zkapjy>

The voting code 25 96 50 0 is valid now and expires in 2 days.



- Please name three things you would like to learn about standardisation.

<https://www.menti.com/aletjg9nogz7>

The voting code 4131 4608 is valid now and expires in 2 days.

THANKS!

Click to edit Master subtitle style

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Introduction to standardisation

- for the absolute beginners



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HSbooster.eu
Horizon Standardisation Booster

Welcome

Training Session 1: Introduction to Standardisation

4 May 2023 | 10:00-12:00 CEST

10:00 – 10:10	Introduction
10:10 – 10:40	The HSBooster.eu Training Academy in a Nutshell 1st Training session 1st Mentimeter session
10:40 – 11:05	2nd Training session
11:05 – 11:10	Short Break
11:10 – 11:40	2nd Mentimeter session 3rd Training session 3rd Mentimeter session
11:40 – 12:00	Q&A



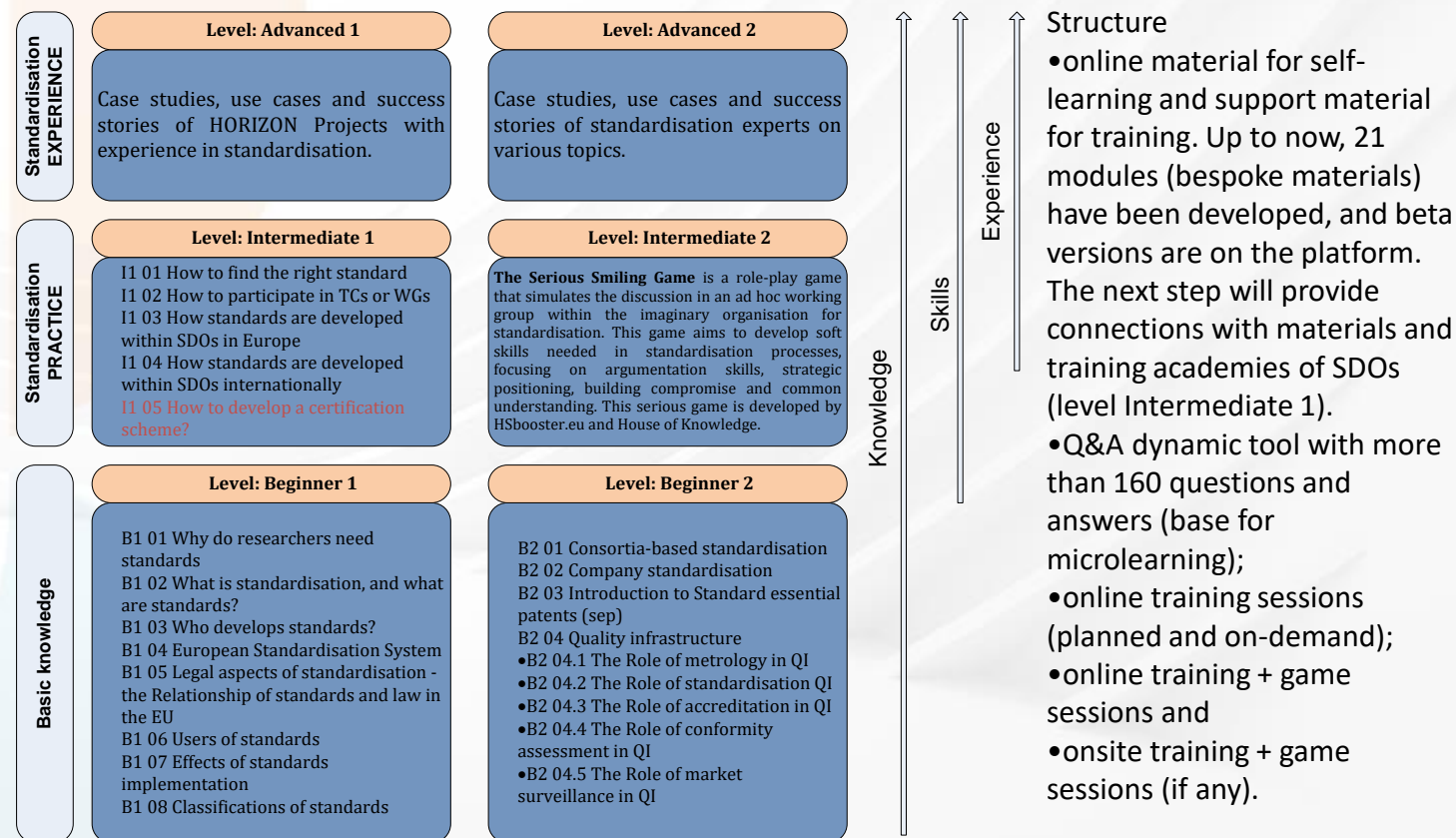
Objectives

To find answers to questions:

- Why do researchers need standards?
- What are standards?
- What is standardisation?
- Who develops standards?

The HSBooster.eu Training Academy in a nutshell

- To provide adequate mechanisms for training the targeted audience in standardisation, the HSBooster.eu Training Academy is connecting three worlds:
- Theory (Academia). To systematise relevant theory and academic research papers on standardisation to become training material for researchers.
- Practice (Standardisation professionals). Establish and maintain links with standardisation training providers and training material developed by ESOs (CEN, CENELEC, ETSI), EU-based NSBs and all other organisations willing to make standardisation closer to researchers.
- Experience (Standardisation experts & HORIZON Projects with experience in standardisation). To establish a path for learning from experiences through case studies, success stories, and use cases.



Online training

	Framework: Online training	Date
Training series: Introduction to standardisation		
1.	Introduction to standardisation 1 Topics: Why do researchers need standards, What is standardisation, and what are standards?, Who develops standards?	Maj, 4 th Bimonthly
2.	Introduction to standardisation 2 Standards in use Topics:Users of standards,Effects of standards implementation, Classification of standards	May, TbD
3.	Introduction to standardisation 3 European Standardisation System, Topics:European standardisation system, Legal aspects of standardisation - the relationship of standards and law in the EU	Jun
4.	Introduction to standardisation 4, Topics: Consortia-based standardisation, Company standardisation	September
5	Training Session: Serious Smiley Game (online or onsite)	Monthly
Training series: Standardisation in practice		
1.	SDOs for researchers (online) How to find the right standard?, How to participate in TCs or WGs?, How are standards developed within SDOs in Europe?	September
2.	Working title: Fast track standardisation(on-line) CWA, IWA, DIN Spec, NSAI spec	November
Training series: Thrive on standardisation		
1.	When is the time for standardisation in the research process?	October
2.	Certification. How to develop a certification scheme?	October
3.	How to develop a standardisation strategy?	November
4.	Patenting or standardisation? – or both Introduction to standard essential patents (sep)	December
5.	Building Alliances (of research projects & PP) for standardisation	January - March 2024
6.	All modules & game sessions & general standardisation (targeted training to be delivered to premium service applicants)	TbD

Why do researchers need standards?

Use of standards

- standards prevent researchers from “reinventing the wheel”
- standards ensure and promote best-practice solutions
- standards ensure the quality and interoperability of research processes.
- involvements of standards at early stages in the research process result in economic benefits – reduction of transactional and adaptation cost, interoperability, higher quality, and reduced risks on the market.

Participation in standards development

- helps researchers to achieve common agreements leading to interoperability, compatibility, and common terminology;
 - enhances scientific cooperation, networking and learning;
 - can be a starting point for converting research results to innovative technologies, products, and services
 - standardisation can help the commercialisation of research results
 - standardisation ensures the subsequent use of research results
 - standardisation can be a tool to support the regulatory framework
-

The interplay between standardisation and research

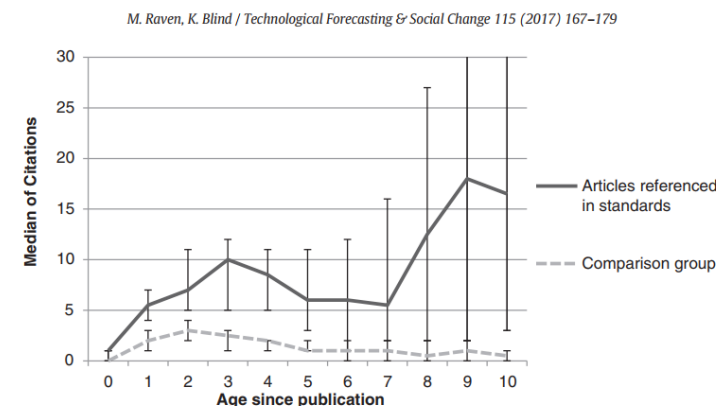
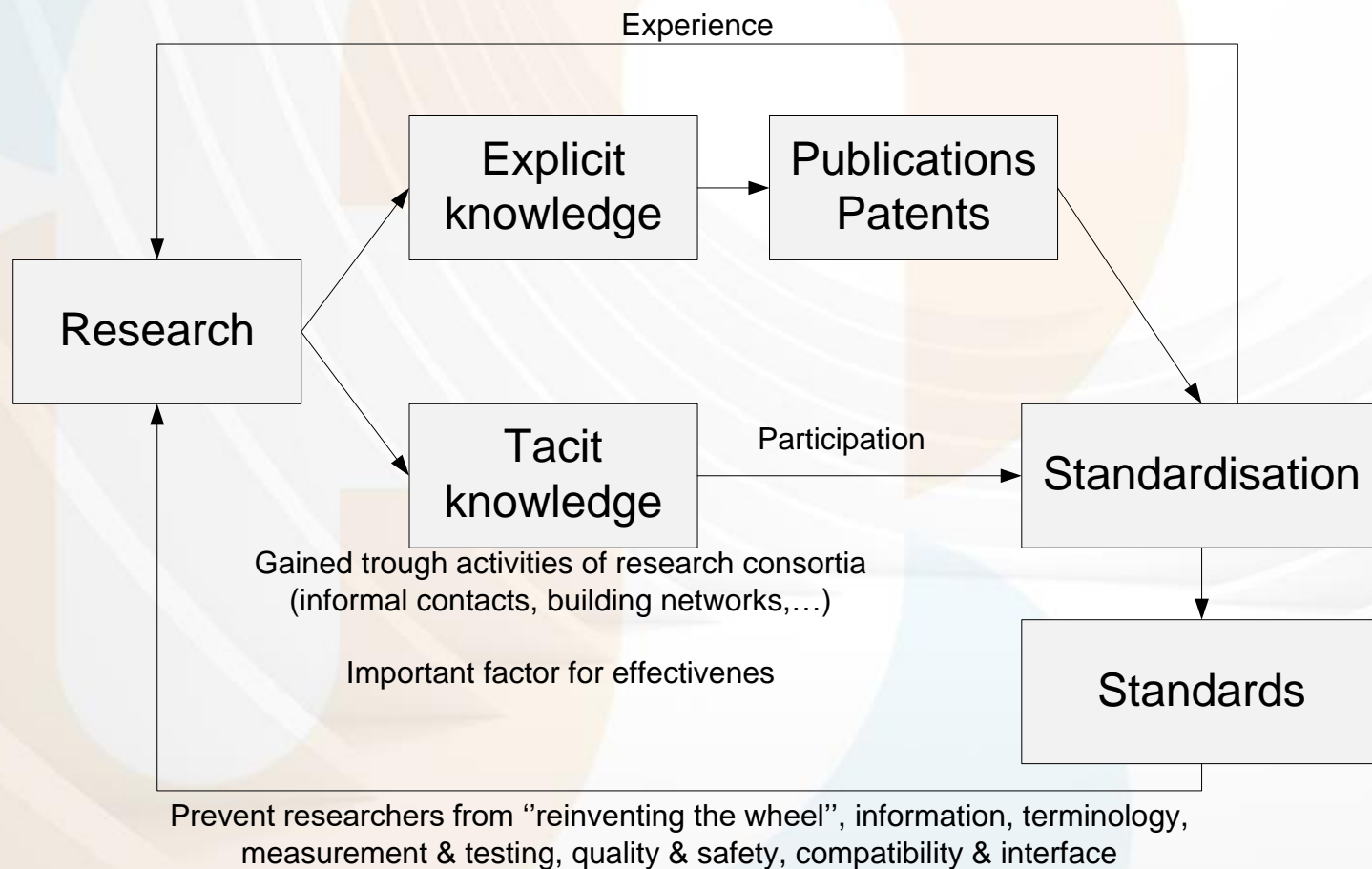
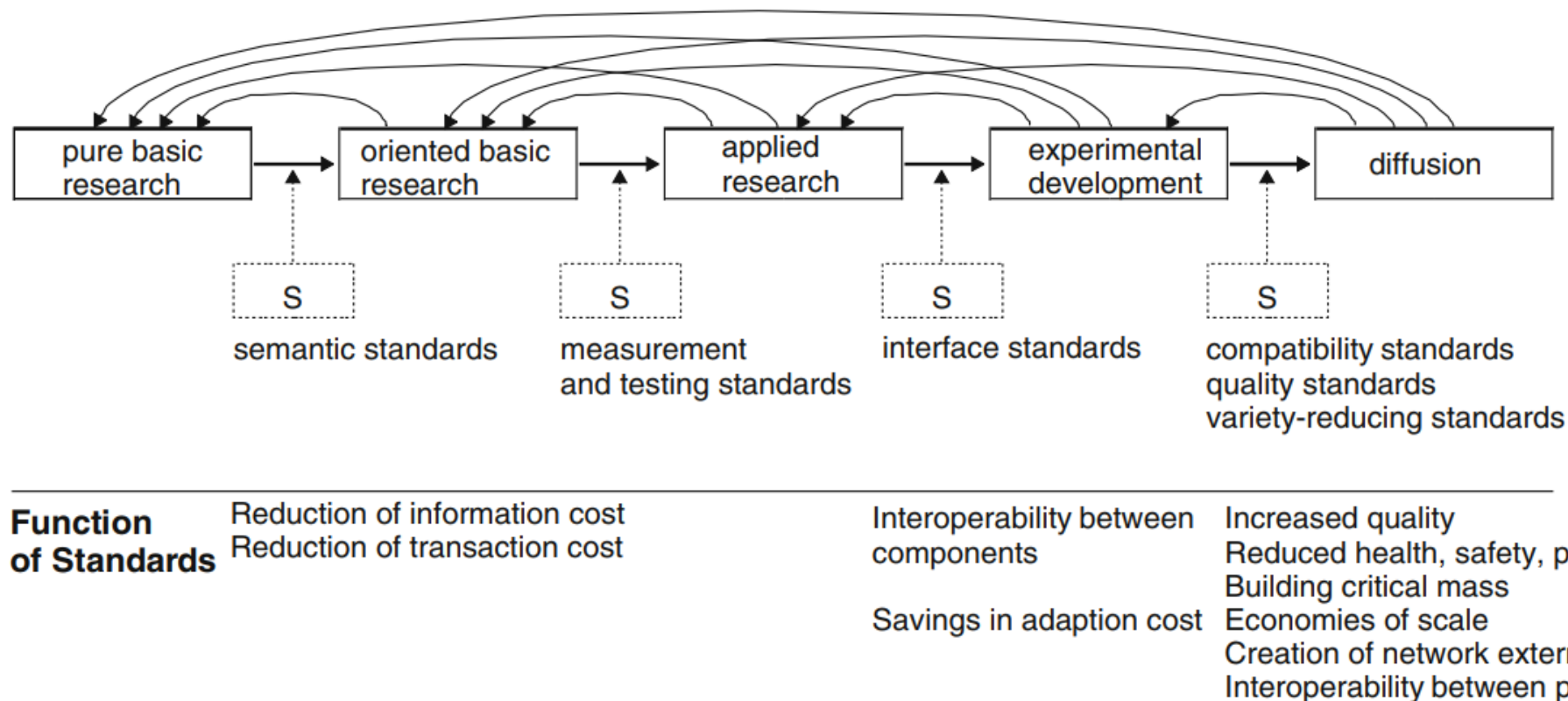


Fig. 1. Citation age profile for articles referenced in standards.

Articles referenced in standards are cited more often than others and have a longer lifecycle.

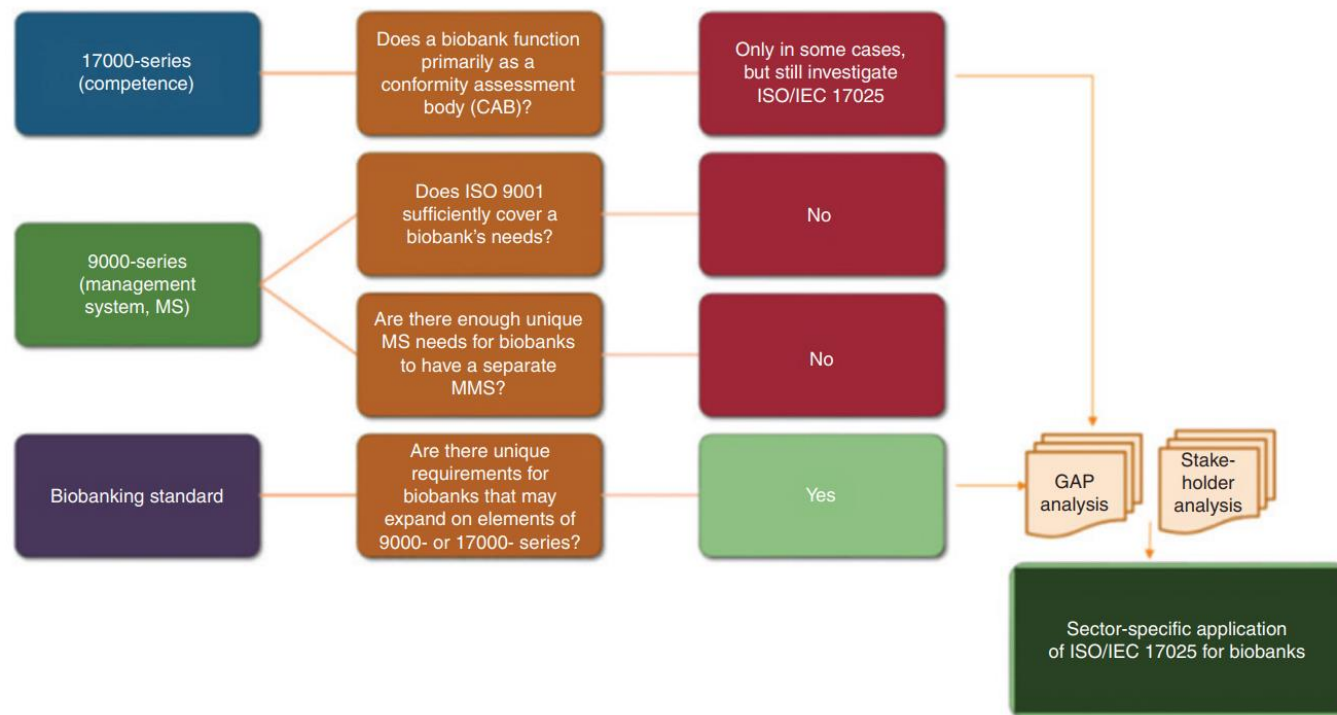
Standards play a crucial role in the research process



Involvements of standards at early stages in the research process result in economic benefits – reduction of transactional and adaptation cost, interoperability, higher quality, and reduced risks on the market.

Standardisation supports modern biomedical research

Standards ensure and promote common good-practice solutions



Context: Modern medical research is based on high-quality samples and data, compiled from various biobanks and bioclinical studies.

Problem: The large number of biobanks worldwide results in a high degree of heterogeneity (infrastructure, IT components, methods and HR).

Potential solution: Specific requirements for biobanks

ISO 20387:2018 Biotechnology — Biobanking — General requirements for biobanking

The European project SPIDIA (www.spidia.eu) collects experimental data to identify the critical steps of sample collection for in-vitro diagnostics.

[ISO/IEC 17025:2017](https://www.iso.org/standard/72411.html) General requirements for the competence of testing and calibration laboratories

1st Mentimeter session

Please name three words that you associate with standards.

<https://ww.menti.com/alwi6ptw678g>

The voting code 11 83 01 7



pro tempore

What is standard?

“A construct that was created by a meaningful, reasonable, and collective choice and that enables agreement regarding the solution of existing problems”.

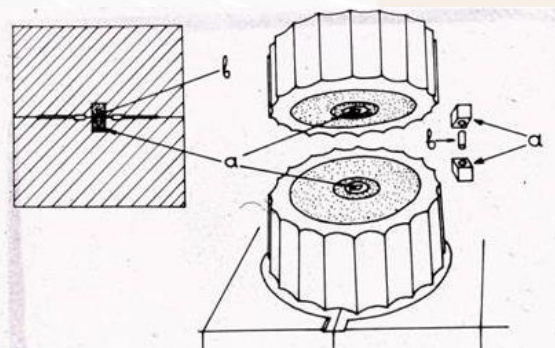
A standard, in whatever form and type, represents a claim by its authors, who believe their work will be understood, accepted, and applied by the market.

That opinion assumes the market will function in its best interest.

What is standardisation?

The activity of developing standards

Standards also existed in ancient times



- The Eleusis Inscription was created in the fourth century BC.
- 1893 in Eleusis, near Athens in Greece.
- solution to the problem of proving the quality of the bronze pins used to connect the discs of ancient columns.
- describes the quality of bronze (one part tin to twelve parts copper) for the pins
- This standard was intended to prevent manufacturers from misleading customers about a lower amount of tin in the bronze than specified.
- The quantities of bronze pins installed in the pillars were enormous, thus, there were opportunities for large profits from fraud.
- The solution was simple and practical. Quality control was performed by comparing the colour of the samples. The more tin in the alloy, the lighter the colour. Models were made with 0%, 2%, 4%, 7%, ... up to 17% of tin and served for control by comparison. A difference of 3-4% was visible.

Standards are everywhere ...

- Without standards, world trade will be impossible -
- „Standards control access to virtually every market in global commerce and directly affect more than eighty per cent of world trade”^[1].



European Tyre and Rim
Technical Organization
ETRTO



A4 format, DIN 476 standard,
published in 1922.

But we can't see them



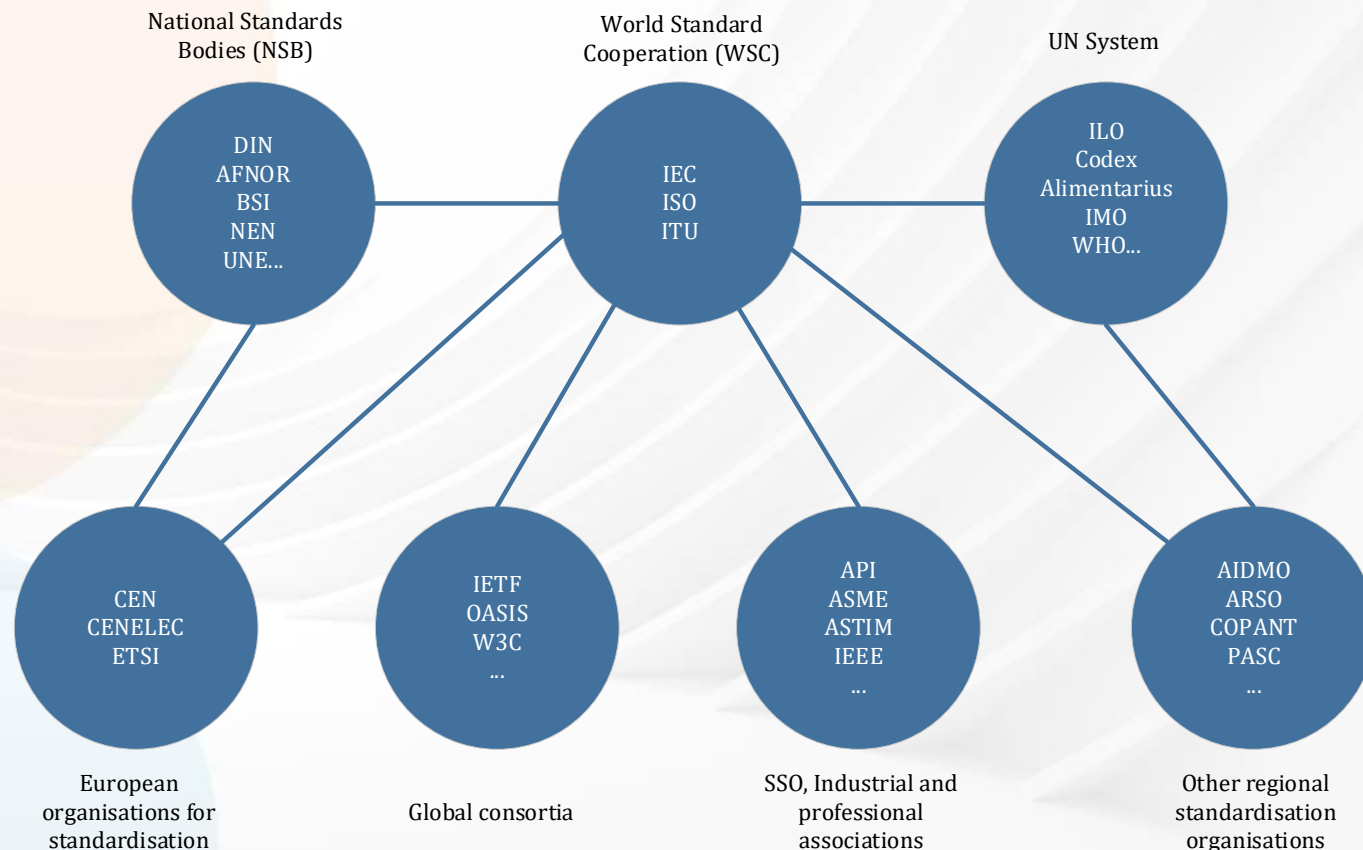
ISO 20867:2018

Footwear — Test methods for insoles — Heel pin holding strength

International Standard [ISO 20867](#):1999 was prepared by the European Committee for Standardization (as EN 12745:1999) and was adopted, under a special "fast-track procedure", by Technical Committee ISO/TC 216, Footwear in parallel with its approval by the ISO member bodies.

Who develops standards?

- Global business and the global market influence the development of an increasing number of standards and encourage the development of new ways and mechanisms of standardisation.
- Many actors develop standards, influence their development, or contribute to the global world of standardisation.
- Generally, standards are developed by experts who represent their organisations in SDOs and SSOs.
- SDOs cooperate and create a dynamic and complex network.
- SDOs provide a place and a specific framework (e.g. rules, process, project management) for actors to develop standards or other documents.
- A large majority of those organisations are member-driven. For example, ISO is a system or federations of NSBs.



Who rules?

- It is essential to understand that there is no general or global standardisation regulation.
- No organisation globally recognises another organisation for standardisation as selected or competent to be called the organisation for standardisation.
- There are many active standards organisations with thousands of members who develop tens of thousands of standards every year that interact with the innovative decisions of most manufacturers.

How many standards are in a laptop?



- 251 technical interoperability standards implemented in a modern laptop computer
- study estimates that the total number of standards relevant to such a device is much higher and probably closer to 500.

Of the identified standards, the authors find that

- 44% were developed by consortia,
- 36% by formal SDOs, and
- 20% by single companies.

Voluntary consensus-based standardisation

- Voluntary consensus-based organisations for standardisation are organisations that develop and maintain standards in the so-called open process of development, meaning that participation in the organisations is voluntary, and the process of standards development is open.
- Voluntary consensus-based organisations for standardisation are often called **formal** organisations for standardisation.
- Standards developed in formal organisations for standardisation are often called **formal standards**

International organisations for standardisation



European organisations for standardisation



National organisations for standardisation





Definitions of standards



“a **document**, established by **consensus**, and approved by a recognised body, that provides, for common and **repeated use**, **rules, guidelines**, and characteristics for activities or their results, aimed at the achievement of the optimum degree of **order** in a given context”

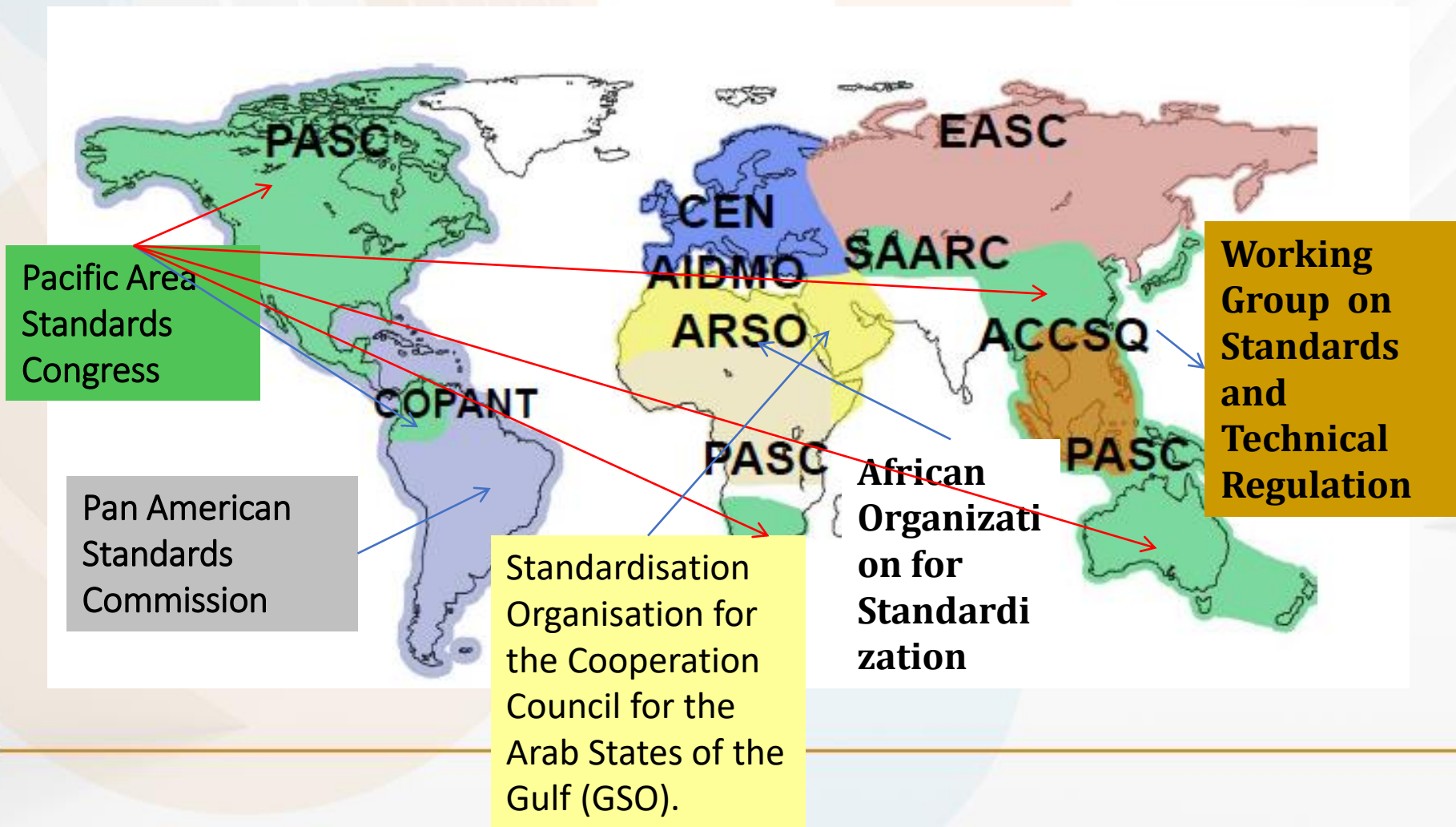
“a technical **document** designed to be used as a **rule, guideline**, or definition – it is a **consensus-built, repeatable** way of doing something. Standards are created by bringing together all interested parties, such as manufacturers, consumers, and regulators of a particular material, product, process, or service”

“a **document** that provides **rules** or **guidelines** to achieve the optimum degree of **order** in a given context”.

Consensus

- Consensus (*Latin cōnsēnsus*) means agreement, accordance, and unanimity.
 - In standardisation, a consensus has a little bit different meaning.
 - ISO/IEC: “a general agreement, characterised by the absence of sustained opposition to substantial issues by any important part of the concerned interests and by a process that involves seeking to take into account the views of all parties concerned and to reconcile any conflicting arguments”.
 - consensus need not imply unanimity.
 - How come that is?
 - At the beginning of modern formal standardisation, one of the basic principles was reaching unanimity in decision-making or consensus. Since the mid-1980s, formal SDOs have faced the need to adopt standards faster because achieving consensus was usually time-consuming, leading to the case that newly published standards were obsolete. That’s why consensus in standardisation has a slightly different meaning.
 - consensus means “***agreeing not to disagree any longer***”.
-

Regional organisations for standardisation



Regional standardisation organisations are established to

- promote regional interest in international standardisation;
- support regional trade development;
- harmonise regional standards and
- facilitate the adoption of international (or other) standards.

What is a national standardisation body (NSB)?

- One country can have many organisations that develop or participate in standards development.
- Only one organisation can represent a national interest in regional and international organisations for standardisation. That organisation is **National Standardisation Body (NSB)**.
- As countries' industries are not at the same level of development, some countries have one national organisation for standardisation that performs all formal standardisation tasks. In contrast, others have several organisations that develop standards.
- Some NSBs set many national standards yearly, and some do not develop them all.
- NSBs are starting point to most regional and international standardisation activities.
- The best way to participate in the European and international standardisation is through NSBs.



2nd Mentimeter session

Please name the National Standardisation Body in your country.

<https://www.menti.com/al2tf8zkapjy>

The voting code 25 96 500



Professional and industrial associations

- Professional or industrial associations develop standards, often in addition to their other activities (e.g. research, development, conformity assessment).
- Their areas of activity are more comprehensive than the areas of activity of business associations, consortia and forums.
- Professional associations, which develop standards, are associations of engineers, and members can be individuals.



You must have heard of DVD, Wi-Fi or Bluetooth.
Do you know what they have in common?





Bluetooth[®]
SPECIAL INTEREST GROUP

Business associations, consortia, or fora

- Consortia in standardization are associations of companies (and/or organizations) whose goal is to develop technical specifications to coordinate the development of technologies and markets in a specific area.
- Standards set in consortia can be open or available for a fee (proprietary or licensed standards).
- Some consortia are focused on research and development. They can be established to join companies' research and development capacities and develop new technology or to examine the possibilities for successful commercialization of new technologies. Apart from companies, scientific institutions and universities often participate in these consortia.
- Some other consortia may focus on increasing the network of users of their existing standards.



A need for general definition for standardisation

What is standard?

- an approved specification of a **limited set of solutions** to actual or potential matching problems, prepared for the benefits of the party or parties involved, balancing their needs, and intended and expected to be used repeatedly or continuously, during a certain period, by a substantial number of the parties for whom they are meant”.
- **matching problem**
“a problem of interrelated entities that do not harmonise with each other”.

What is standardisation?

- The activity of developing standards
- Activity of establishing and recording a **limited set of solutions** to current or potential matching problems directed at benefits for the party or parties involved and intending and expecting that these solutions will be repeatedly or continuously used during a certain period by a substantial number of the parties for whom they are meant

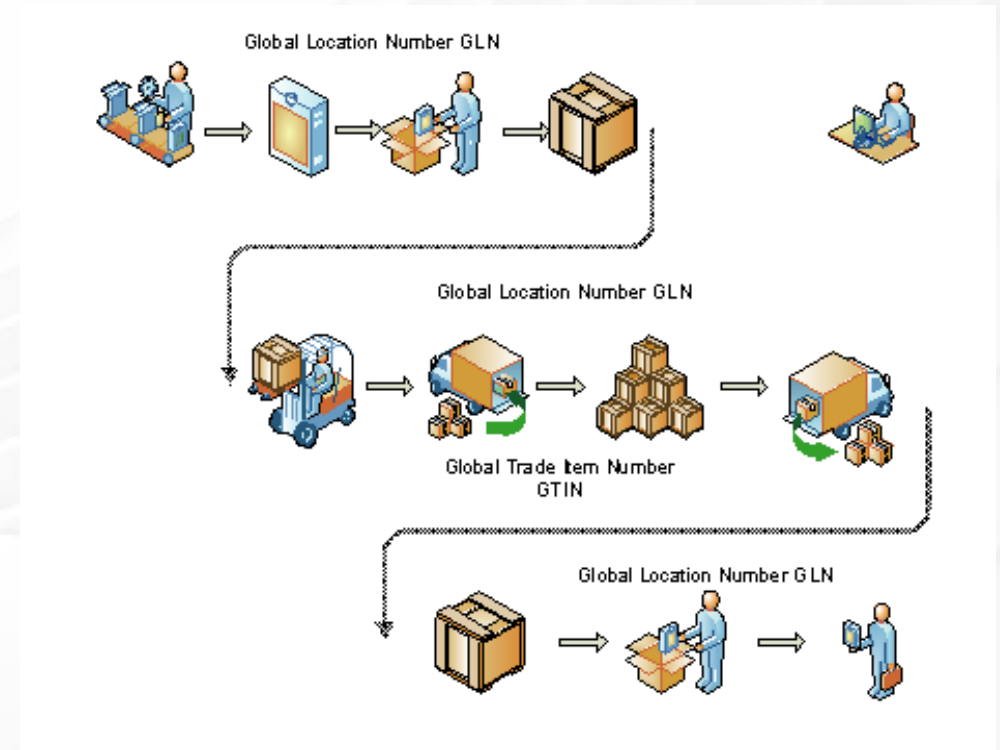
CASE STUDY: GS1 SYSTEM OF STANDARDS



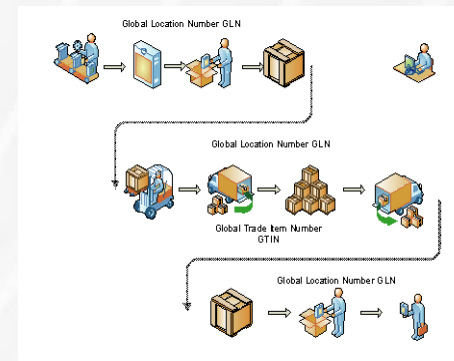
- Barcodes are two-dimensional graphical marks that use a simple coding system based on different thicknesses of bars and spaces between them and a combination of numbers and letters intended to uniquely identify entities for machine reading purposes.
- On June 26, 1974, a packet of chewing gum became the first barcoded product scanned in a store.

CASE STUDY: GS1 SYSTEM OF STANDARDS

- Within the global supply chain, marking and automatic identification of various products, goods, packages, pallets, and containers enable a more effortless flow of goods.
- It is practically a prerequisite for global trade.
- However, some people think that GS1 is a company that only sells barcode numbers.



CASE STUDY: GS1 SYSTEM OF STANDARDS



- GS1 standards are developed by the Global Standards Management Process Team (GSMPT), which consists of 73 experts from 18 countries.
- The members of GSMPT are representatives of companies: BASF, Carrefour, Dole, GMA, John Deere Food Origins, Nestlé, P&G, Target, and Wal-Mart, among others.
- The Global Standards Management Process (GSMP) is “a community-based global forum of users who have business needs that require the use of specific standards based on a solution that makes the supply chain efficient”.
- The GSMP offers a comprehensive set of methods and rules that enable the GS1 community and specific groups to communicate their business needs and participate in creating globally harmonised standards and guidelines.
- GS1 strives to develop standards free of charge to the best of its ability.

CASE STUDY: GS1 SYSTEM OF STANDARDS

- In 1999, the symbols of the GS1 Data Bar family became the standard of the Association for automatic identification and mobility (AIM).
- The AIM is the industry association of solutions manufacturers for automatic identification and mobile technologies.
- In many cases, AIM standards can become ISO standards through the American National Standards Institute (ANSI).
- Thereby, the GS1 symbology entered the ISO/IEC 24724:2011.
- The GS1 and GS1 Member Organisations have been actively engaged in the United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT).

CASE STUDY: GS1 SYSTEM OF STANDARDS

- The GS1 is a member of European Committee for Standardisation (CEN) as an organisation with special ties that enable it to participate in the work of TCs and STCs actively.
- GS1 has a long and fruitful working relationship with the ISO.
- Also, the GS1 is a partner organisation of the ISO, status A, which means that it is an organisation that effectively contributes to the work of technical committees and subcommittees.

GS1 standards recognised by ISO and other standard bodies

GS1 component

GTIN (Global Trade Item Number)
 SGTIN (Serialised Global Trade Item Number)
 GLN (Global Location Number)
 SSCC (Serial Shipping Container Code)
 GIAI (Global Individual Asset Identifier)
 GRAI (Global Returnable Asset Identifier)
 GSRN (Global Service Relationship Number)
 GDTI (Global Document Type Identifier)
 GINC (Global Identification Number for Consignments)
 GSIN (Global Shipment Identification Number)
 GCN (Global Coupon Number)
 CPID (Component / Part Identifier)
 Application Identifiers
 Global Product Classification (GPC)
 EPC URI Syntax
 EANCOM syntax
 EANCOM content
 GS1 XML syntax
 GS1 XML content
 Symbology Identifiers
 EAN/UPC
 ITF-14

External standard

ISO/IEC 15459-6
 ISO/IEC 15459-4
 ISO/IEC 6523
 ISO/IEC 15459-1
 ISO/IEC 15459-4 & 5
 ISO/IEC 15459-5
 ISO/IEC 15418
 ISO/IEC 15418
 ISO/IEC 15418
 ISO/IEC 15418
 ISO/IEC 15418
 ISO/IEC 15418
 ISO/IEC 15418
 ISO 22274
 IETF RFC 3986
 ISO 9735
 UN/CEFACT UNSMs
 W3C XML
 W3C XML
 ISO/IEC 15424
 ISO/IEC 15420
 ISO/IEC 16390

3rd Mentimeter session

Please name three things you would like to learn about standardization.

<https://www.menti.com/aletjg9nogz7>

The voting code 4131 4608



THANKS!

Ivana Mijatovic
University of Belgrade

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