

Serious Games in Education on Standardization

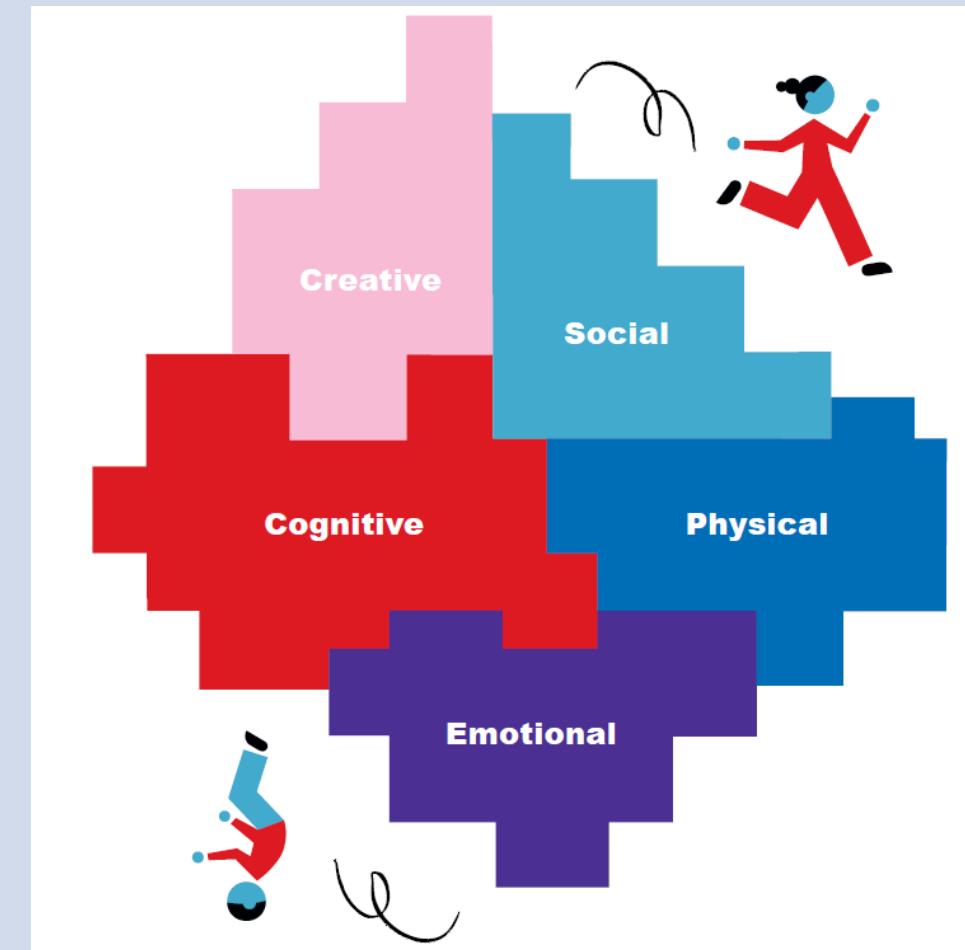
Serious Games in Edu 4 Standardization

„Serious“ → not just entertainment

„Games“ → not just lecturing

Playfully-real experience provides educational content

Develops holistic skills





Serious Games in Edu 4 Standardization

Big variety of standardization-related games:

- ❖ mock standardization meetings
- ❖ escape rooms (digital and real)
- ❖ standardization process
- ❖ strategic aspects

The world of Standardization (DIN)



- Interactive Board game
- Objective: develop a strategic understanding about standardization in innovation context
- Target group: students, founders
- played in teams of 2-5, max. 2 teams per board
- Moving: according to decisions
- Ca. 30 min per round
- Languages: English, German
- Contact: amelie.leipprand@din.de

The world of Standardization (DIN)



- Storyline: Congrats, for you Innovation you won the Innovation Trophy! It comes with some time and money
- Different ways possible: patent, standard nat/ europ/ internat, specification; combinations possible
- Decisions to be made within the team
- Experience real-life-inspired standardization situations
- Designed to inspire questions

Knights of KANelot (KAN)



- Board game and online
- Objective: learn process of european standardization, „boring“ process details explained with funny storytelling
- Up to 6 players per board; online any
- Ca. 30 min per round (depending on reading speed)
- Languages: English, German
- Contact and online version:
www.kan.de/en/publications/kanelot-the-game

Knights of KANelot (KAN)



Storyline: It's a hard life for a knight. His helmet doesn't fit properly, the visor is broken – again – and the helmet is also starting to rust. Wouldn't it be nice for knights to have a safe helmet that is comfortable and functional? The OSH knights of KANelot have an idea: what we need is a standard.

And so off they go, with other knights and ladies, to create a European standard.

IdeaMania (CEN)



- Online game
- Created within BRIDGIT 2 (Bridging the Gap between Research & Standardization)
- Objective: increase attention and awareness of standardization, get target group interested in standardization, improve impression of target groups to be favorable toward
- Language: English
- Contact: christian.gorancy@din.de

IdeaMania (CEN)



- Target audience: researchers, startups, spinoffs
- Playtime: 3-5min per level, 3 levels
 - Level 1: wind energy plant maintenance service
 - Level 2: parcel box for postal services
 - Level 3: chemical exposure models
- Update in preparation

Mission Standards - safe the hydro! (GS1)



- Mobile Escape Room for SME
- Experience the benefit of standards while solving the quest
- Topics: eStandards, RFID, QR-Code, Tracking/Tracing, AI and Interoperability
- 5 players
- Ca. 30 min playing time
- Language: German
- Contact yarahmadi@wertnetzwerke.de

Mission Standards – safe the hydro! (GS1)



Storyline: ALARM at the hydro power plant! The dam is in danger of breaking! Only you and your team can avert the approaching catastrophe. The solution is right in front of you, but time is against you. Use standards and digital technologies to save the dam. AI-based applications and hidden hints guide you through the tasks.

<https://www.mittelstand-digital-wertnetzwerke.de/leistungsangebot/erlebniswelten/escape-room/>

Games from Danish Standards

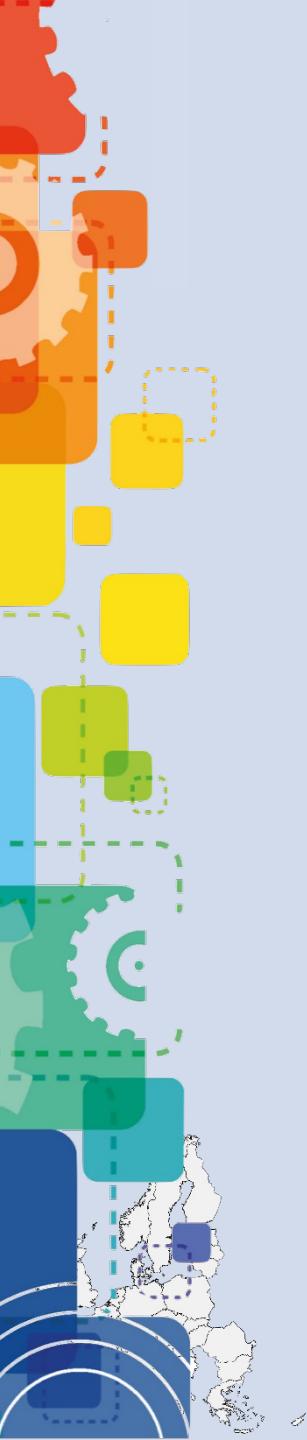
- Contact: Pernille Bengtsen, pab@ds.dk



Good teaching



- Interactive game
- The overall learning goal is to develop an analytic understanding of what standards are, what they are for, and how they are developed in consensus-building processes
- To be played in groups of 4 participants in each group. Min. 8 participants.
- Duration: app. 60 min.



About the game

- Key stakeholders in education would like to enhance the quality and output of teaching lessons. These are: students, teachers, employers and stakeholders from society.
- The stakeholders come together to make a standard for good teaching.
- In groups of four, participants are divided into groups representing a stakeholder perspective, e.g. employer perspective.
- Then they go into a 'committee' where they discuss the content of their standard.
- At the end, each group present their standard for good teaching.

The Sky is the Limit



- Interactive game
- The overall learning goal is to develop an analytic understanding of how standards in general—and regulatory standards, in particular—are developed and how they can either hinder or promote innovation.
- To be played in groups of 5 participants in each group. Min. 10 people
- Duration: app. 130 min.



About the game

- A standard needs to be made for a new product that is ready to be launched on the market –the flying car!
- A standardization committee is established with five different stakeholders: The manufacturers, consumers, regulators, stimulators and researchers.
- These five stakeholders need to agree on the requirements for the flying car.
- Participants discuss their negotiation strategy in each stakeholder group. Then they go into a ‘committee’ to negotiate the content of the standard for a flying car.
- At the end, each group present their standard for the flying car.

Multistuff Inc.



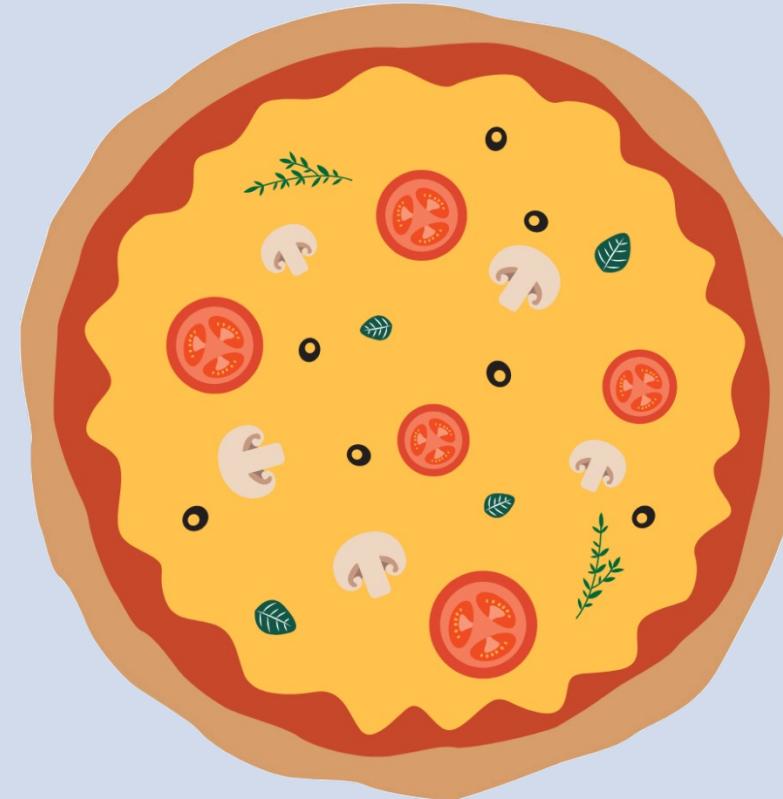
- Interactive game
- The overall learning goal is to develop an analytic understanding of how standards may influence a market and the competitiveness of a business in that market.
- To be played in groups of 5 participants in each group. Min 10 participants.
- Duration: app. 145 min.



About the game

- The central question of each business decision in this game is whether to standardize by committee or not and why.
- Participants will analyze 4 cases based on historical examples.
- The following choices are given to the participants in each case:
 - Standardization by committee (standardizing by committing in a negotiation process with all interested parties, facilitated by a Standard Development Organization)
 - Standardization by market – stand alone (choosing to compete with other companies in the marketplace)
 - Standardization by market – alliance (partnering with selected organizations in the market to set the standard)
 - Postpone decision (waiting for others to act and becoming a “fast follower”)
- In groups the participants discuss each case and evaluate them.
- At the end, a winner with the best analysis is announced.

NBN Business game



Develop your own pizza machine!

NBN Business Game



- **Goal:** Get to know the value of standards in a broader context.
- Standardisation in the context of product development.
- To be played in groups of 2-5, max. 5 groups
- 60 min game + 30 min reflection
- Available in English
- Hosted by NBN
- Contact: yens.van.overloop@nbn.be

NBN Business Game



What are the ingredients of the game?

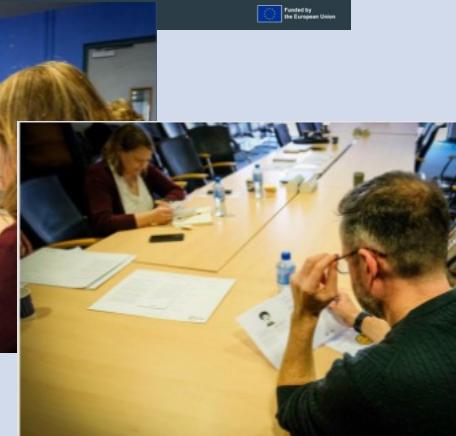
- Forging the ideal investment plan
- Creative tasks
- Teamwork
- Maximising shareholder value
- Fun
- Reflection on the value of standards
- Interesting key takeaways

The Serious Smiley Game (UB, HSbooster.eu)

- A role-play and simulation game
- aims to develop soft skills needed in standardisation processes
- focusing on **argumentation skills, common understanding and strategic positioning.**
- To be played in groups of 5
- 45-90 min
- Available in English



I learned more in these 20 minutes than five hours of lecture



The Serious Smiley Game & instructions for facilitators will be publicly available
<https://hsbooster.eu/training-academy>

The Serious Smiley Game (UB, HSbooster.eu)

The Situation: Centuries before smartphones, people were striving for more efficient distance communication ... The Internet changes the way we communicate.

The Problem on the Market: People do not understand emojis any more.

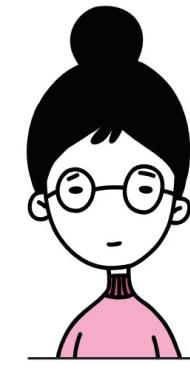
The Solution(s): To unify Smiley?



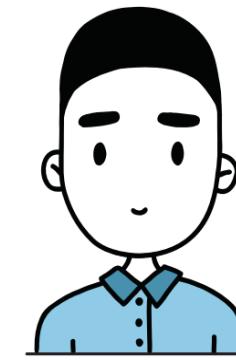
Zoltan Mancini



Tabitha Bradshaw



Sun Moon Sun Esposito



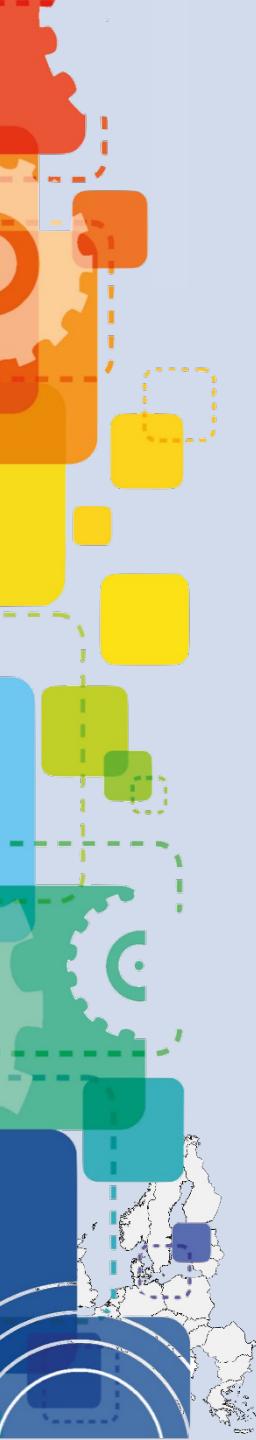
James Nikolov



Camelia Bucur

The meeting of OfS TC 70 – WG 703 is starting

The Serious Smiley Game (UB, HSbooster.eu)



For standardisation professionals and NSBs

- Would you like to use the game to train newcomers in standardisation or standardisation professionals of all ages?

Do you want to increase your ability to **better understand scientists or researchers** in WG or TC?

For university teachers

Would you like to use the game to train your students on standardisation?

Would you like to learn to facilitate this game?

You are more than welcome to facilitate this game.

Instructions for the trainers and facilitators are available, too.

For more information: Ivana Mijatovic, ivana.mijatovic@fon.bg.ac.rs

Bootcamp “STANDARD in a DAY” (DKE)

- Goal: To experience the entire development process of an international standard in one day, including consensus building and practical application of IT tools
- Mixture of training, discussion and role play
- Participants develop a standard for electronic baby robots by representing different stakeholders
- 12-30 participants; f2f, online or hybrid



IEC (cd) SC 500 A © IEC:2021 - 1 - IEC (CD) 2021EBRs Edition 1.0 2021-01

IEC   Academy & Capacity Building

THIS MOCK STANDARD IS USED FOR THE “STANDARD IN A DAY” BOOTCAMP by IEC ACADEMY

INTERNATIONAL STANDARD Committee Draft (CD)

Electronic Baby Robots (EBRs)
Part 1 - Specifications for Design and Construction

DRAFT

Mini- Bootcamp “STANDARD in one HOUR” (DKE)



- Reduced version of bootcamp in 1 hour
- Role play of one national mirror committee meeting with assigned roles (engineer, professor, regulatory authority, convenor)
- 2 topics from standard on electronic baby robots:
 - Data collection
 - Physical appearance
- 1 moderator, 6 participants



1 7.9 Data collection

2

3 The data collected from the sensors shall be stored in the internal memory
4 hard drive with a minimum capacity for at least one year of storing the collected
5 data of the EBR. The amount of storage shall be written in the manual.
6 The data might be collected automatically by the manufacturers via EBRs'
7 internal data receiver/transmitter only for improvement to meet customers'
8 future needs and the design of EBRs. The regulations according to standard
9 series ISO/IEC 27701 shall be applied.

Paragraph to be discussed

Professor

You work in the field of human-machine interaction and research the interaction between robots and humans.

You have specialized in investigating the effects of children living with robots on early childhood development. Data is very important to you in this context, as it forms the basis of your research. In particular, you are thinking about how additional specific feedback from users can also be collected directly.

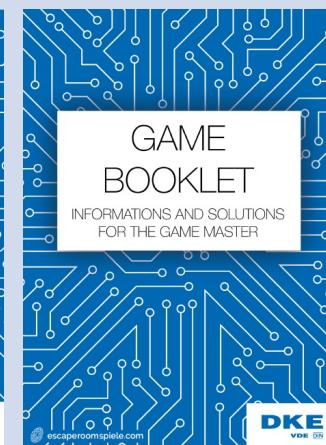
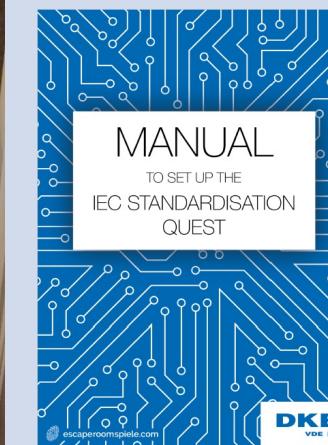
You advocate that the data collected should all be made publicly available in anonymized form. This could also have a positive impact on safety, as it would enable faster action to be taken in the event of an increase in accidents, for example by allowing authorities to intervene more quickly.

Exemplary role of participant

IEC Standardization Quest (DKE)



- Mobile escape game that fits in a suitcase
- 9 learning puzzles and team activities about standardization
- 1 moderator, 6 players, 1 hour
- Goal: learn about and understand the process of international standardization in a simple, fun way - anywhere, anytime!



More information:
<https://www.dke.de/de/services/iec-quest>

Norma (Standard) and the mystery of the lost train (UNE)



- Virtual escape room, to be played in the server or installed in windows, android.
- Fun facts and basic knowledge about std
- Around 45 min the full game.
- Available only in Spanish.
- Developed with university, for a target group of young students (15-25).
- Good results in visibility and communication
- Not foreseen continuation or translation.



Treasure hunt (UNE)



Para el comienzo del juego

buscarás un matafuego

que se dice en Argentina

aquí llamado extintor

porque nos suena mejor

¡¡¡Corre si ya lo adivinas!!!



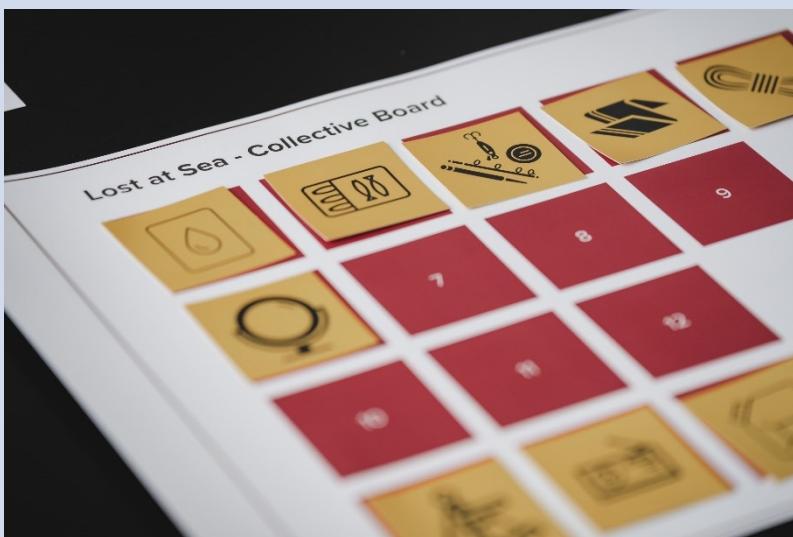
UNE-EN 3-7:2004
*Extintores portátiles de incendios.
Parte 7: Características, requisitos de funcionamiento y métodos de ensayo*

Arranca ya tu recibo
dejando para el siguiente.
Para la próxima pista
de este juego sorprendente
ponte de baloncestista
y busca donde yo escribo.

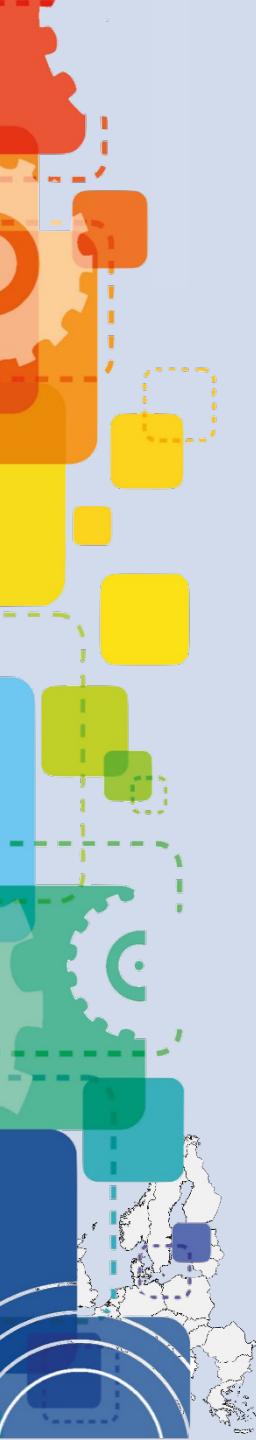
- Running game for active teenagers!
- Improvised activity for a school, for students from 10 to 16 years old.
- Attach A4 papers in selected locations, each one with a guess and some receipts.
- Cheap and simple, 10 min play + some debate about Stdz.
- Merchandising for the winners.
- Good cost/benefit ratio.

Contact: dmasso@une.org

Lost at Sea (ISO)



- Board game
- Consensus building
- Up to 10 players
- 60-90 min per game
- Available in English
- For more information:
Anna Gallet
PM for Education
gallet@iso.org



Stakeholder Roleplay – Feasibility of a standard

Managing a « fictitious » standardization scenario

Starting point: Consultancy study report on the feasibility of creating a standard on controlling risks associated with problem gambling.

Roleplay : Up to four teams representing possible stakeholders, each assigned with a unique, confidential objective that they must strive to achieve, while acting accordingly with their designated role.

The primary aim for each team is to navigate the landscape of interests and objectives by seeking out allies and forming strategic partnerships with other stakeholders. The success of each team hinges on their ability to collaborate effectively while still advancing their own agenda within the standardization discussion.



Stakeholder Roleplay – Feasibility of a standard

First round: 20 min

- Each stakeholder team needs to :
 - Assess the potential benefits of creating a standard,
 - Establish a strategic framework,
 - Understand their role and their scope for action

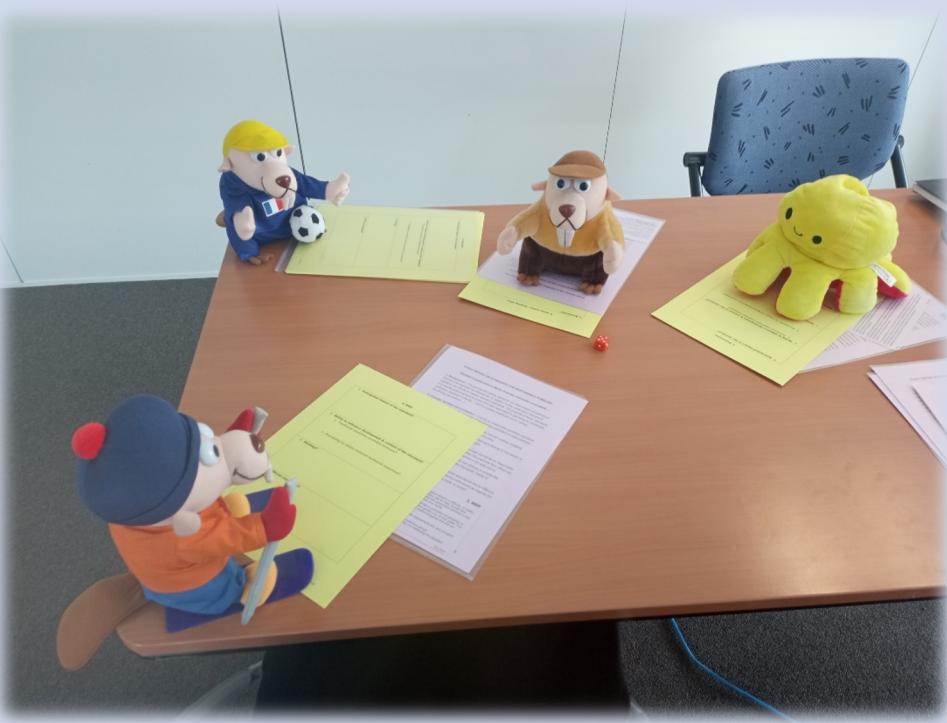
Second round : 30 min

- Each stakeholder team needs to :
 - Strive to assess beneficial relationships
 - Assess and minimize risks associated with each strategy.

Debriefing : 10 min

- Revelations
- Ability to influence the standard-setting process, and success of each strategy

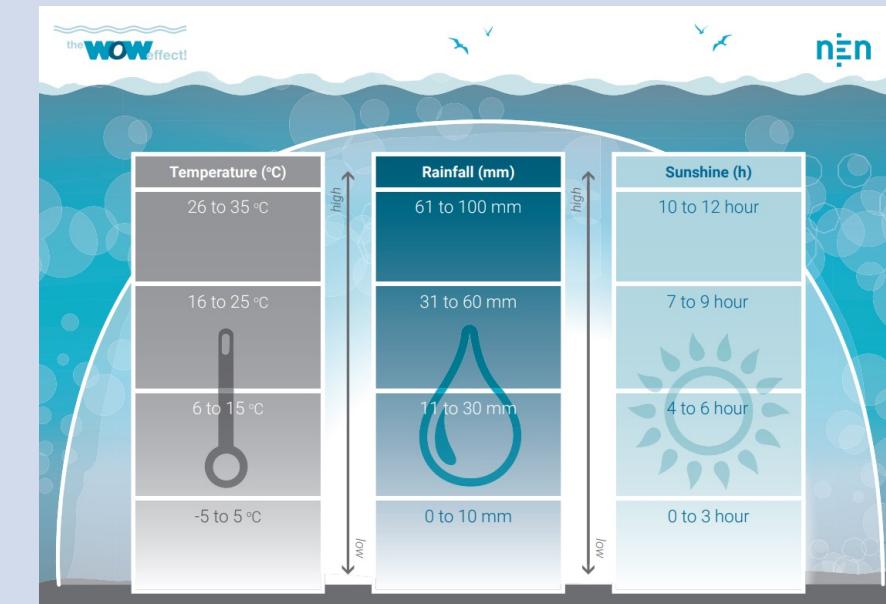
Stakeholder Roleplay – Feasibility of a standard



- Roleplay game
- Strategic approach
- Stakeholder strategies in standardisation
- Real-life situations, real-life decisions
- To be played in of 4-8 groups, max. 2 persons per group
- 30 – 45 min per session
- Available in English
- Contact:
 - **Bernadette Ruetsch**, bernadette.ruetsch@afnor.org,
+33 (0) 1 41 62 88 87
 - **Samuel Bourdon**, samuel.bourdon@afnor.org,
+33 (0)1 41 62 64 33

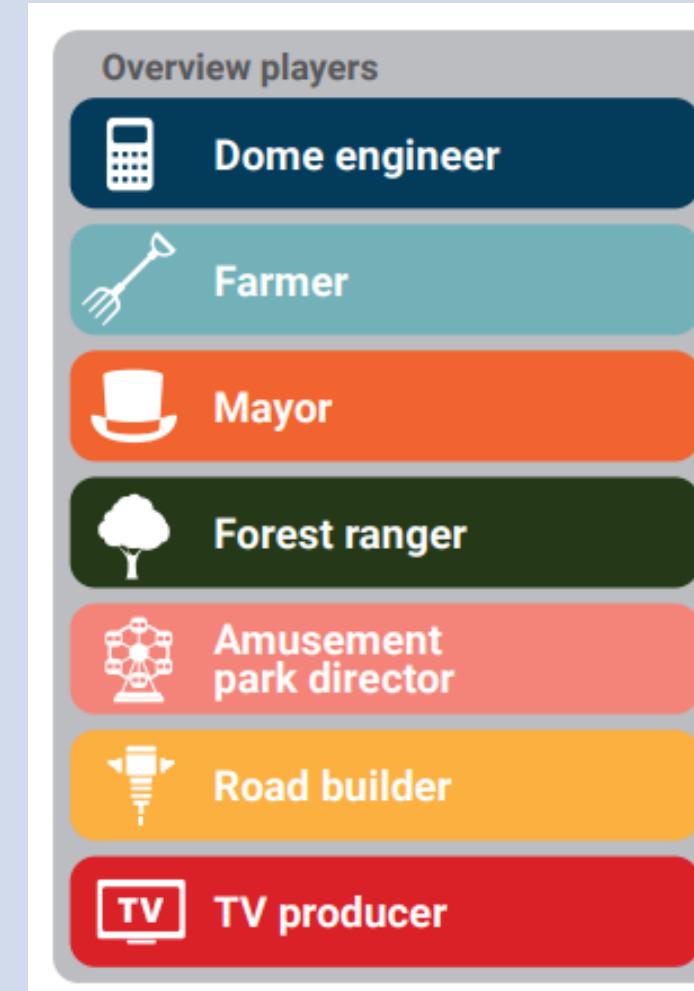
The WoW game (NEN)

- WoW stands for Wonen onder Water -> Living under Water
- The game simulates a future in which people live together in a big bulb at the bottom of the sea
- New mini-societies are created and have to be organised since there are no rules yet
- The main stakeholders join to set standards on the climate in the bulb:
 - Temperature
 - Rain
 - Hours of sun



The WoW game (NEN)

- Number of participants: 6-8
- Time to play: 1,5 – 2 hours
- Game is played in various rounds, simulating the consensus process in standardization committees:
 - New Work Item Proposal
 - Consensus building meetings, including gaining new knowledge
 - Public commenting
 - Final decision on publication



The WoW game (NEN)



- Game is played internally at NEN (new staff) as well as externally (new committees, external stakeholders, students)
- Available in Dutch and English
- Contact:
Jolien van Zetten – jolien.vanzetten@nen.nl - +31 6 333 303 63

House of Knowledge – Serious games

Training



Data collection



Decisions support

- Student – Ex.master
- 45min – 5 days



On-site vs digital:
the “in-person” - remote presence -
digital continuum

Magnus.Makvag@HoKnowledge.com

Overview games

Civil

ISO - Standards process
- Diversity and inclusion

BSI – Young professionals
- Standards park (+2 More)

Standards Norway
- Export businesses

Edu4Standards
- Game in development

Defence

NATO Standard process
- NATO Standards process (A)
- Civil process For NATO (B)
- NATO and civil process (C)

NATO adoption of EDT
- Standardization proposal

developed with:
Nikolaos Myriounis at


GII - Dilemma concept
- Data collection

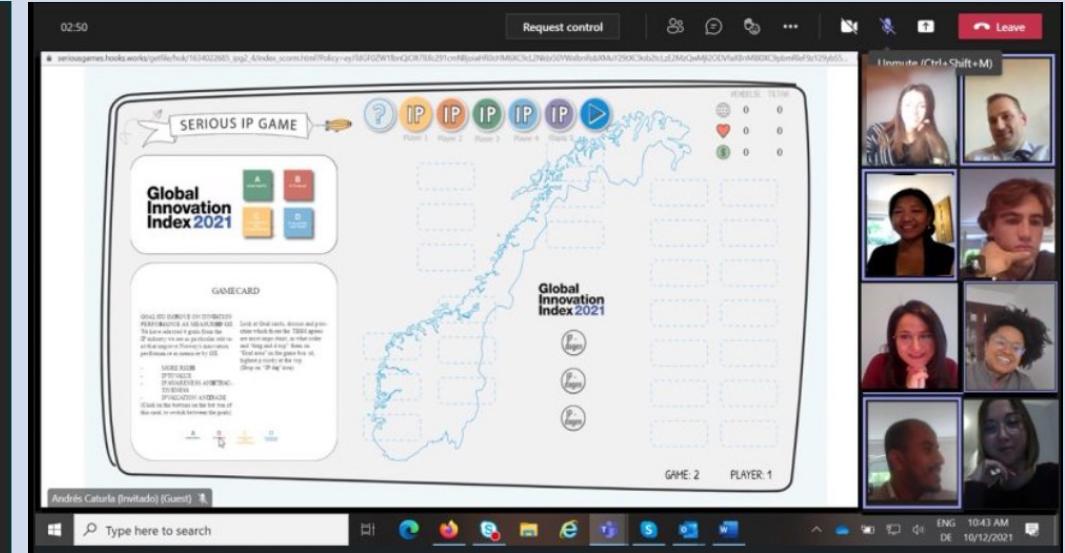
IP Strategy Game
- Start up - Standards
- Corporate - SEP

University Tech transfer
- BUA / TU-Berlin
- BUA Postdoc academy

Standardization games

Standards and standardization
part of games

Magnus.Makvag@HoKnowledge.com



Magnus.Makvag@HoKnowledge.com

Education on standardisation in Europe, 17-18 June 2024, Delft, The Netherlands

Game-playing Session in Betazaal

Serious Smiley Game

Ivana Mijatovic
Hsbooster

Lost at Sea

Anna Gallet
ISO

Wow-Game

Jolien van Zetten
NEN

Business Game

Samuel Bourdon
AFNOR

Getting started with Standardization – Second Interactive Conference on Education about Standardization

25.+26. September 2024 in Berlin



Amelie Leipprand | Project Coordinator | DIN Young Professionals | Amelie.leipprand@din.de | +49 (0) 30 2601-2607

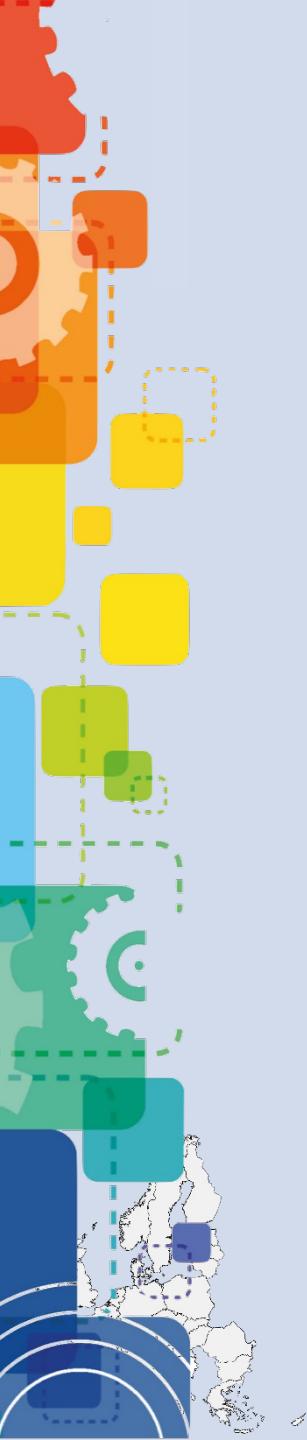
mock standardization meetings

DKE: Standard in 1h, Standardization Bootcamp (1 day)

DS: The Sky is the Limit

DS: good teaching

HSbooster: Serious Smiley Game



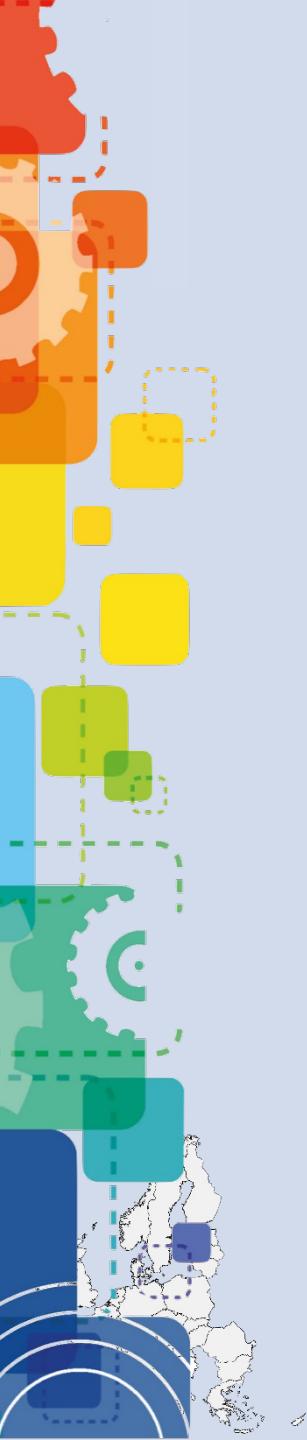
escape rooms (digital and real)

DKE: escape room

GS1: Mission Standards – Save the hydro!

UNE: La Busqueda del Tesoro (treasure-hunt-style for smaller children)

UNE: Norma y el Misterio del Tren Perdido (digital)



standardization process

KAN: Knights of KANelot

NEN: the wow-game

(also the mock standardization meetings)



strategic aspects

AFNOR: Business Game

AFNOR: Le defi d'Emma (expires end of 2024)

CEN: IdeaMania

DIN: World of Standardization

DS: Multistuff inc.

House of Knowledge: various

ISO: Lost at Sea

ISO: Impact game (working title - under development)

NBN: Pizzamachine