



D4.3 Serious Game Handbook

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Introduction

While Deliverable 4.1 processed the field study results from Belgium, Austria, and Sweden, and Deliverable 4.2 presented policy recommendations; the aim of Deliverable 4.3 “Methodology handbook on using the serious game”, is to produce a handbook for using a serious game as part of policy support for inclusive, demand-oriented, and target group-specific automated mobility solutions for cities. This handbook is divided into two sections. The first part presents the lessons learned when designing, developing, and conducting the game. The second part contains the guidelines for using the different local versions of the serious game. The lessons are presented as bullet points and are divided into three subsections. The first subsection presents the lessons from Belgium, the second from Austria, and the third from Sweden. Meanwhile, in the second section, you will find six different versions of the serious game. Three versions were developed for Belgium, two for Austria, and one for Sweden.

1. Lessons learned in the game sessions' design, development and conduction in Belgium, Austria, and Sweden.

This first part of D4.3 is divided into three subsections. The first subsection presents the lessons from Belgium, the second part from Austria and the third part from Sweden.

1.1 Lessons from Belgium

Lessons learned in the design and development of the serious game

- One of the project's main objectives was designing a serious game with a co-creation approach that could work with our target groups in vulnerable situations (older adults, people with physical and mental impairments, and children). Therefore, during the design of the game, we learned the importance of focusing on a few players; co-creation by nature is often small-scale (Brandsen, 2021). Hence the design of the game is for a small-scale meeting that allows the players to discuss and identify in small groups their potential needs if autonomous shuttles were implemented.
- Among the first ideas was to explore the design of a digital game. To do so, we used the MURAL platform and had a pilot session with mobility experts and suppliers. However, to reach our target groups the game's design transitioned from a digital platform with the service providers to a physical version with our target groups (older adults, people with physical and mental impairments, and children). The main reason for this transition was to facilitate, as much as possible, the participation of our target groups (Casiano Flores et al., 2023). Digital engagement might pose limitations in inclusiveness and accessibility for some users (Rodriguez Müller et al. 2021). All our user groups said that they enjoyed the game's physical version. As part of the session we asked for feedback about the game and the game session. The comments were positive, confirming our decision.
- The game's design had two main pillars: Cog-nito game and a collaborative storytelling approach. Storytelling can be key to making a game memorable, it also gives purpose to the players and keeps them motivated throughout the game (Gamito & Martinho, 2021). Moreover, collaborative storytelling games have already proven to enable an assessment of anticipatory assumptions (Belton & Dillon, 2021).
- An important change that took place during the design of the game was the board. As our serious game was influenced by Cog-nito game (Panagiotidou et al., 2022), we considered the possibility of an abstract board such as the one that Cog-nito creators had developed (See Fig. 1 below). However, for our game, the potential area where the automated vehicle could be implemented, was important as we also aimed to get insights from the residents about the potential implementation. Therefore, we decided to use the Noordrand region as the board the area for the game.

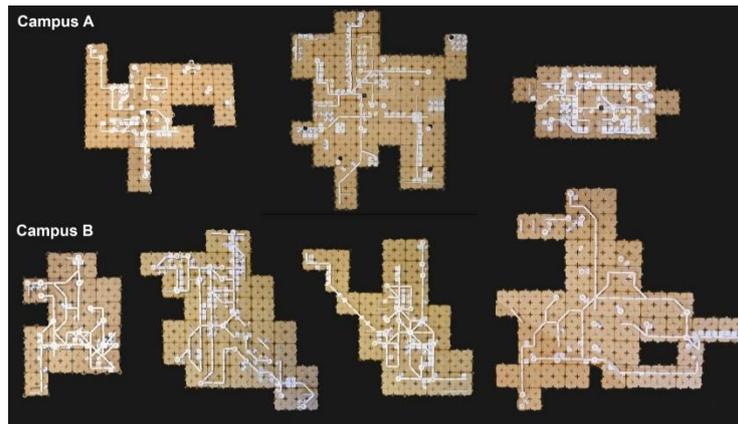


Figure 2. Overview of seven participatory physicalization outcomes, ordered by campus. Source <https://rxd.architectuur.kuleuven.be/projects/co-gnito-a-participatory-physicalization/>

- Another influence from Cog-nito game was the inclusion of feeling cards. This means that when the players narrated their story, we also asked them to associate it with the feeling cards that could express their current feelings. However, this was reassessed while conducting the game.
- We developed the game with a storytelling approach based on the literature on Serious Games and the influence of Cog-nito.
- During the design stage of the game, we also critically reviewed literature within the co-creation and gamification literature, including the storytelling approach. A revision of storytelling games literature brought the study conducted by Belton and Dillon (2020) to our attention. Their research expands the literature on the public perception of autonomous flights by presenting results based on an exploratory study of non-expert anticipatory assumptions (Belton & Dillon, 2021).
- Based on our research, we decided to develop a storytelling game in which the players had to describe how they thought they would experience a trip in an automated vehicle. The trip was divided into two parts, first reaching a location that they chose by picking a card blindly, and second, they had to imagine their return to the starting point of the trip. However, for the return, they had to pick a card with a challenge, the idea being that the player had to imagine how the trip would be with such a challenge. When telling the story about the trip they had to think in three main stages: stepping inside the shuttle, the ride itself, and exiting the shuttle. To facilitate this narrative, we provided an explanation about autonomous vehicles before the game.

Lessons learned from conducting the serious game in Belgium

- For the game setting, and after the first game session, we decided to add images of the automated shuttle that the players could have during the game session. We realised that this helped the players to keep in mind the characteristics of the automated vehicle.
- We learned that the feeling cards were not very useful and, more importantly, they were not relevant to our objective. So, we recommend that in a future implementation dropping the these feeling cards.
- During the game, we also realised that our initial instructions regarding the identification of needs and the possible solutions was too complicated and difficult for players to follow. Hence, we reduced the rounds from three to two. Previously in the first round they were identifying needs, in the second round they were identifying solutions, and in the third round they were identifying the needs related to a transportation challenge

along with its solution. We realized, however, that the players found it difficult to come back to the problems and propose solutions in the third round. Hence, we decided it was better to skip the second round and go right to discussing the potential solutions immediately.

- While the storytelling dynamic was working well with the older adults and people with impairments, we were hesitant about this dynamic with children. After an internal discussion among the researchers, we decided to change the dynamic of the game for children, creating a second version. This new version had the element of competition among the players and provided examples of challenges that users with impairments and older adults face.
- Playing the children's game version allowed us to have insights into their needs. The identification of those needs allowed us to develop a third version, based on the children's version but aiming to create awareness in the general population regarding the needs of vulnerable users.

1.2 Lessons from Austria

Lessons learned in the design, and development of the serious game

- An important lesson that we learned from the serious game sessions at the midterm conference was the need for local context and familiarity with the area discussed. Therefore, both versions of the game were adapted to the local context of Klagenfurt, Carinthia. Some examples: The game board depicted the neighbourhood of Klagenfurt, where the game session was conducted. The challenges of the awareness version included some street names of the neighbourhood as well as local weather conditions.
- Regarding the accessibility of the game, we got the feedback that the font sizes of the game material and elements of the map (e.g. street names, etc.) need to be bigger. Furthermore, it was recommended to have more options for how participants can see the map (e.g. one map on the table and one on the wall or hanging).
- We discussed the Austrian Serious Game versions with experts in the field of accessibility to explore different options on how to make the game itself more accessible and inclusive. The main take-away was that there will not likely be a design that fits to everyone's needs. Nevertheless, this can be compensated by getting to know the participants before the game and trying to adapt to their needs in the best way possible. For example: if there is a person with a hearing impairment, it is recommended to have another participant in the game that is proficient in sign language and can act as a translator. If there is a person with visual impairment, it is recommended to have an assistant for this person etc.

Lessons learned from conducting the serious game in Austria

- The local context of the Serious Game was received positively, even though it was not necessary for the awareness version of the game. Participants should be familiar with the area that is being discussed.
- Dominant participants tend to take over the game. This needs to be considered by the moderator.
- The invitation needs to be precise on what participants should expect. This applies to both version of the Game, but is crucial for the routing game as a participation tool.
- The number of participants should be limited to 3-6 people, 6 being the absolute maximum. The group of participants should be as diverse as possible.
- All aspects of ethics and privacy policy should be considered.

Routing version:

- We found that especially for the routing game, it is necessary to have more than one person to guide the game (e.g., one person that moderates, one person to help with POIs and small tasks coming up, one person taking notes).
- It is important to have spare paper available to add additional POIs that are relevant for the user groups involved but might have been overlooked in the preparation process.
- Participants should be familiar with the area that is being discussed. This is crucial for a constructive participation process.
- The length restriction of the route should be in reasonable proportion to the planning area.
- Make sure that the location where the game session takes place is accessible for all participants.
- Provide drinks and snacks and set up the game zones before arrival. This creates a welcoming environment for the participants.
- Instructions need to be repeated during the game; participants need to be reminded of the goal and their tasks if they digress.

- The moderator needs to be sensitive to the group's needs regarding the level of guidance. Furthermore, for some participants (especially senior citizens), the game seemed too long. The play time needs to be adjusted to the participants attention span.

Awareness version:

- The level of empathizing with the persona respectively staying in the persona varied between participants.
- Mixed groups proved to be good for the discussion (different professions/Organization playing together). Gender diversity should be more considered beforehand.
- Overall instructions are easily understandable and there were only simple clarification questions regarding certain aspects. Nevertheless, we found that the setting should be more precise (e.g. how far along is the deployment of automated vehicles, what do the stops look like, how familiar is the person with the shuttle etc.)
- The distribution of points was considered random/unfair. This can be considered in further development of the Game.
- In the reflection part of the game, other use-cases for the use of the Serious Game were identified (e.g. playing with students in the field of city/transport planning, employees in public transport, public administrators, mayors, mobility service developers and providers, etc.)

1.3 Lessons from Sweden

Lessons learned from conducting the serious game in Sweden

Game session 1

- The players appreciated playing, probably because it felt like a real board game, with proper game pieces and a game plan. This likely contributed to them taking it seriously.
- It seemed like players were actively trying to land on red "dots" to get new discussion questions, so the game has served its purpose in that sense.
- The game might be improved by playing with an organization for the rights of people with various impairments to get input on how they would like to see the solutions to the problems that they are familiar with and arise in the game.
- More variety in the event cards could have added to the gaming experience, making it feel even more like a "normal" board game.
- Many of the solutions were focused on the bus design, but it might have been exciting to hear more about how, for example, the stop could be designed. It might be worth mentioning in the setup of the game that the solutions can be anywhere and can be both concrete solutions or more conceptual ones.
- During the game with Östgötatrafiken (a transport authority), we managed about 7 cards, and two were about congestion. It might be an idea to make sure that the cards available all deal with different problems, to get a wider range of answers.

Game session 2

- In Game 2 the players represented themselves in different missions, which was easier for them than for Östgötatrafiken to get into someone else's role in game session 1.
- We handed out some leading questions that they could think about, giving them the opportunity to discuss in smaller groups before they got together, which seemed to get their minds going.
- Perhaps it would have been better to use a more purposeful map with only important points marked (shops, schools, other bus stops and lines, hospitals, etc.), but looks a bit more game plan-like. Also, including more game pieces, such as bus stops, trees, etc., would add to the gaming experience.
- For the discussion, it would have been easier to sit around a map and jointly put out lines, notes and bus stops.

2. The serious game versions

This second part of D4.3 presents the different game versions developed for the local contexts in Belgium, Austria, and Sweden.

2.1 About the Belgian serious game version.

A shuttle for everyone



‘A shuttle for everyone’ is a **serious game** that allows identifying future needs of senior citizens, children, and people with physical impairments, anticipating barriers, and finding solutions when automated shuttles are implemented in a specific context. The game is a tool to:

1. Collect data on needs, wishes as well as challenges regarding automated mobility services;
2. Co-creatively develop new inclusive automated mobility solutions, taking into account the spatial context as well as the needs and requirements of potential end users by bringing them together with relevant practitioners and, finally
3. Raise awareness of accessibility and inclusivity in the mobility system amongst the people playing.

The game has three versions:

1. Version for older adults and people with impairments,
2. Version for children and
3. Version for the general public.

The game suits traffic and city planners, mobility service providers, researchers, innovators, policymakers, mayors, students and teachers. The included material can be extended to meet specific requirements as needed. The serious game was developed in the CATAPULT project and is used under the creative commons license CC-BY-4.0.

Link <https://doi.org/10.48804/16VCEG> to download the different versions of the game. You can also access via the code below



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Game version for older adults and people with impairments in Belgium

Materials:

- A printing of the area in oversize A0 (1245 mm x 900 mm)
- Printings of bus stop signs, shuttles, and bus stops
- Challenges cards
- Destination cards
- Images of the shuttle (interior and exterior)
- Shuttle in 3D
- Bus stop in 3D
- Need and solution cards

Instructions for the game session

Round 1

1. Place the board on the table or surface area where the game will take place.
2. Each player receives a 3D bus representing themselves travelling in an autonomous vehicle.
3. Each player will select a destination card blindly.
4. Players must imagine and narrate a "perfect trip" in the first person, including smooth driving and timely arrival at each bus stop.
5. Players will consider potential needs while inside the vehicle, during the trip, and getting off the vehicle.
6. While each player narrates their experience, the facilitator will fill out a need card based on the player's story.
7. The facilitator will ask the player how the needs they described can be addressed, and other players can collaborate and add information.
8. The facilitator will write the answers on the solution card and place it next to the identified need.
9. Repeat this process for each player.

Round 2

1. Each player will pick a challenge card.
2. Players must explain what new needs the picked challenge creates and collaborate with the other players to add information.
3. After the player has identified the needs, the facilitator will ask what can help to resolve them.
4. The facilitator will write the need and the solution on the corresponding cards.

Game version for children

Materials

- Gameboard
- Bus in 3D
- Bus stop in 3D
- Dice
- Challenges cards
- Images of autonomous shuttles

Instructions for the game session

1. Each player will receive a shuttle representing themselves travelling in the shuttle.
2. The challenge cards are placed in the middle of the board and are divided into six piles:
 - Three piles correspond to specific target groups, and players must answer as if they were from that group.
 - The other three piles ask players to think of challenges that can happen when stepping inside the shuttle, during the trip, or when stepping out.
3. Players will take turns throwing the dice, and depending on the number, they will pick a card from the corresponding stack.
 - If the card is a challenge, the player must provide a solution.
 - If the card is from the other three piles, the player must think of the corresponding challenge, the need created and propose a solution.
4. Other players can discuss and provide their opinions on the proposed solution.
5. Once a solution is proposed, the player will throw the dice again and advance on the board based on the number rolled.
6. The first player to finish the round on the board wins the game.

Game version for the general public

Materials

- Gameboard
- Bus in 3D
- Bus stop in 3D
- Dice
- Challenges cards
- Images of autonomous shuttles

Instructions for the game session

1. Each player will receive a shuttle representing themselves travelling in the shuttle.
2. The challenge cards are placed in the middle of the board and are divided into six piles:
 - Two piles per target group, and players must answer as if they were from that group.
3. Players will take turns throwing the dice, and depending on the number, they will pick a card from the corresponding stack.
 - The player must solve the challenge described in the card.
4. Other players can discuss and provide their opinions on the proposed solution.
5. Once a solution is proposed, the player will throw the dice again and advance on the board based on the number rolled.
6. The first player to finish the round on the board wins the game.

2.2 About the Austrian serious game versions.

Let's create a need-based and inclusive shuttle route.



The serious game is about co-creating a need-based and inclusive shuttle route that allows senior citizens, people with physical impairments, children and all other interested persons to define a route that is relevant for their daily lives.

The game is a tool to:

- 1) Define target groups specific points of interest; the players define which destinations are important in their daily life
- 2) Detect optimal placement of stations; the discussion about the optimal localisation of bus stations will help to make public transport more accessible
- 3) Develop a route which is helpful und acceptable for the target groups in terms of the duration of the route and the connection to other places of interest

The game is suitable for various groups and the included material can be extended to meet specific requirements as needed. The serious game was developed in the CATAPULT project and is useable under the creative commons license CCBY.



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Game version for co-creatively planning a shuttle route with a diverse user group in Austria

Materials:

- Two maps as game boards (recommended in the format A0 or bigger) depicting the area in which the shuttle route should be deployed (see also download document: “How to create the game map with MS Office Software”)
- Cards for points of interest (POI) including stops (recommended minimum size: 5cm x 5cm and laminated so they can be reused and are easier to handle for the

- players)
- The point of interests can vary depending on the planning area and the user groups involved. Some examples for POIs are:
 - pharmacy, working Space, municipal office, train station, bank, supermarket, meeting center, coffee shop, cinema, playground, school, nursery etc.
 - We recommend having some spare sheets of paper so that the user groups can add POI that are relevant to them
 - approx. 20 clip photo holders for a better presentation of the POI on the game board
 - piece of wool - in the length of the planned route in relation to the scale of the map/game board. So, players have a better sense for the length of the route and form the route together on the map/game board.
 - Something to take notes on the discussed challenges, arguments, needs and requirements of the user groups for considering when planning the shuttle route afterwards.
 - Pencils for adding POI
 - People needed:
 - 1-2 game master per table
 - 1 person who taking notes on the most relevant inputs from the user groups
 - (Note: If you have an autonomous shuttle available show them the shuttle before the game starts. Most people were really interested in how it works.)
 - Instructions for the game master (also see below).

Instructions for the game session

Game preparation:

- Set-up the game zones before arrival (ideally 3-6 players/table)
 - Place one game board, the POI, the clip photo holders, pencils and the piece of wool on the table or surface area where the game will take place.
 - Hang the second game board on a wall or holder so that people with walking aids or wheelchairs can easily access the map if wished (see Figure 1 in the Annex).

The game session

1. The game master starts the game with entry questions:
 - a. How do you usually travel? Which transportation mode are you using?
 - b. How do you feel about public transportation in „name of the area“
 - c. Are you familiar with the area?
 - i. Yes: What is your personal connection to the area?
 - ii. No: How do you feel about the public transport system in your residential area?
2. The game master explains...

...the goal; for example: *“Today we want to plan a route for a public automated shuttle in the area (name of the area) that represents a compromise of all the participants’ needs and wishes. You followed the invitation to engage in the route planning process and to help ensure that needs of citizens are included in the planning process.”*

...the setting; for example: *“When we talk about a public automated shuttle service, we are talking about a future scenario in which the vehicle is fully self-driving and on-board operator is no longer required by law.”*

...the rules of the game and the materials. The route should meet the following criteria:

- The route should not be longer than XX km represented by the piece of wool (the number of kilometers depends on your project)
 - There should be a minimum and a maximum of stops (e.g. 12 and 8) OR a concept for an on-demand service
 - If there are stops, the distance between two stops should be within a certain range (e.g. 300-500 m)
 - One-way streets should be considered.
 - Materials like the POI cards, the wool or the scale can be used, but it is not mandatory.
 - The game ends when all participants agree on a route and find compromises if necessary (Note: collect arguments against or for a route in the documentation)
3. The game master answers open questions.
 4. The Serious Game should be a tool to facilitate the dialogue in planning processes. The role of the moderator therefore depends on the level of engagement of the participants. If the group starts a discussion immediately after the assignment is explained, the moderator only needs to intervene when necessary (participants deviate from the goal, misunderstandings of the rules etc.).
 5. If the group is having difficulties on how to start, here are some questions that the moderator can ask to guide the group in a productive discussion:
 - a. What POIs are relevant in the area and why? What are the priorities and preferences regarding the shuttle route? Where do you want to go with a public automated shuttle? Where not? E.g., connections to other public transport modes, schools, nursery etc.
 - b. For whom are the stops suitable, for whom not? How should the stops look like? What information do you want/ need at the stops?
 - c. How should an on-demand shuttle be designed so you would use it? Would you like dynamic stops? What do you think about flexible time schedules and routes for the public automated shuttle? How would you like to book the service?
 6. The game ends once the group agrees on a route, on-demand service or time is up.
 7. If you want, you can reflect on the game session together with the participants.

Game version for awareness raising amongst persons in the mobility sector in Austria

Change of Perspective



This serious game aims at sensitizing persons for the importance of designing and implementing mobility services accessible and according to a design-for-all approach. It is about raising awareness about different needs & requirements of diverse people among mobility planners and further experts.

The game is a tool to:

- 1) Raise awareness of accessibility and inclusivity in the mobility system
- 2) Foster discussion about the different needs & requirements of diverse persons

The game is suitable for traffic and city planners, mobility service providers, researchers, innovators, policymakers, mayors, students, and teachers. The included material can be extended to meet specific requirements as needed. The serious game was developed in the CATAPULT project and is useable under the creative commons license CC BY.

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Materials:

- 7 Persona cards
- XX Challenge cards
- XX Interaction cards
- a dice (only necessary for two interaction cards)
- People needed per table:
 - 1 game master
 - Optional: 1 person who takes notes on the most relevant solutions and discussion
- Instructions for game master (also see below)
- *Optional but advisable*
 - *Game board*

- *Printed shuttles or game figures to play*
- *HOLDERS for the printed shuttles (we used photo holders)*

Instructions for the game session

1. Shuffle the persona, challenge and interaction cards separately.
2. Place the game board, the dice, the cards in three different piles and shuttles/game figures on the table or surface area where the game will take place.
3. Explain the setting – all players are going as their personas on a journey using an automated driverless shuttle with fixed stops.
4. Each player picks a persona card and a shuttle/game figure. *(During the game, it is important to take the perspective of the persona. Therefore, we recommend to have a little warm-up game in which participants already have to get into their persona e.g. „Never have I ever“ with statements related to mobility behaviour.)*
5. Everyone introduces themselves as their persona.
6. Pick a person who starts.
7. Each player follows the steps below:
 - a. The person whose turn it is, picks up a challenge card. The task is to find a solution for the challenge from their persona's point of view. If the player succeeds, they can proceed on the game board. The dots („ ● “) in the right corner of the card indicate, how many fields they can proceed. *If the game is played without a game board you can keep score.*
 - b. If it is a challenge card with a star („★--") on it, the person whose turn it is, picks up an interaction card. If the additional information has an influence on the initial solution, the player has to come up with a new solution. If they succeed, they can proceed one additional field.
 - c. Discussions between the players during the game are not only possible but encouraged.
8. The game ends, if one player reaches the goal on the board game, there are no challenge cards left or you decide to end the game session.
9. After the game session you can discuss the learnings of the players for their professional life.

2.3 About the Swedish serious game version.

New Mobility



The serious game is about bringing together stakeholders to co-create a need-based and inclusive route for autonomous shuttles. The aim is for the new shuttle to provide senior citizens, people with physical impairments, children mobility in a location. The game invites all stakeholders to define a route that is relevant for their daily lives while role-playing needs from the target groups.

The game is a tool to:

- 1) Understand the aspects of a shuttle route that are of relevance for the target groups.
- 2) Bring to light the complexities of the transport system.
- 3) Give stakeholders and understanding of their role in making a more inclusive transport system with autonomous shuttles.

The game is suitable for various groups. The included material can be extended to meet specific requirements as needed. The serious game was developed in the CATAPULT project and is useable under the creative commons license CCBY.



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Game 1 - Design

Materials:

- 1 Game board “Garnisonsspelet” (The Garrison Game)
- XX Discussion cards
- a dice
- People needed per table:
 - 3-4 players

- 1 game master
- Optional: 1 person who takes notes on the most relevant solutions and discussion
- Instructions for game master (also see below)
- *Optional but advisable*
 - *Printed shuttles or game figures to play.*
 - *Use local transport authority logos and other signs that give a sense of reality to the game board.*

Instructions for the game session

1. Shuffle the discussion cards separately.
2. Place the game board, the dice, and the discussion cards on the table.
3. Put the shuttle on the game board at a chosen start location.
4. Explain the setting – all players are traveling using an automated driverless shuttle with fixed stops.
5. Each player picks a shuttle/game figure.
6. Pick a person who starts.
7. Each player follows the steps below:
 - a. The person whose turn it is rolls some dice. If they land on a red dot, they draw a discussion card. If they land on a black dot, they move backward two spots.
 - b. When landing on a red dot the discussion card is read and discussed.
 - c. Discussions between the players during the game are not only possible but encouraged.
8. After the game session you can discuss the learnings of the players for their professional life and for various transport stakeholders.

Game 2 - Design

Materials:

- 1 Game board “Garrisonsspelet” (The Garrison Game)
- XX Discussion cards
- XX Stakeholder descriptions, for example:
 - *The University Hospital*, including patients, employees, visitors and students
 - *The Criminal Justice System*, including the police, security service, and courts
 - *Inhabitants* of all ages
 - *Businesses* of all sizes
- XX Mission descriptions, for example:
 - Imagine that you are an **inhabitant** in the area.
 - Imagine that you are traveling in from outside to **run an errand** in the area.
 - Imagine that you are **visiting the hospital**. You might have to visit multiple wards at the hospital.
- Some dice
- People needed per table:
 - 3-4 players
 - 1 game master
 - Optional: 1 person who takes notes on the most relevant solutions and discussion
- Instructions for game master (also see below)
- *Optional but advisable*
 - *Printed shuttles or game figures to play*

Instructions for the game session

1. Shuffle the discussion cards separately.
2. Place the game board, the dice, and the discussion cards on the table.
3. Put the shuttle on the game board at a chosen start location.
4. Explain the setting – all players are traveling using an automated driverless shuttle with fixed stops.
 - a. Each player is given a stakeholder description.
 - b. Players get 15 minutes to flesh out their stakeholder perspective.
 - c. They write down key issues for their stakeholder on post-it-notes.
5. Each player picks a shuttle/game figure.
6. Pick a person who starts.
7. Each player follows the steps below:
 - a. The person whose turn it is rolls some dice. If they land on a red dot, they draw a discussion card. If they land on a black dot nothing happens and it is the next persons turn.
 - b. When landing on a red dot the discussion card is read and discussed.
 - c. Discussions between the players during the game are not only possible but encouraged.
8. After the game session you can discuss the learnings of the players for their professional life and for various transport stakeholders.
9. Each player is given a paper with discussion prompts, for example:
 - a. Where would you like to see the implementation of autonomous buses?
 - b. Where would you not like to see the implementation of autonomous buses?
 - c. Do you have any other opinions on the implementation of autonomous buses?
 - d. The opinions do not have to be tied to a specific area, but can be general as well
 - e. Consider times where you are *not* traveling by bus, but by other means. Where would you want the autonomous buses to be implemented in those cases?

Analysis of Results

The game session was recorded and transcribed to ease data gathering and analysis. Game 1 discussions were analysed using qualitative content analysis, specifically by de-contextualising and re-contextualising the data. Firstly, results were read multiple times, and solutions and ideas mentioned were marked and placed in a separate document, as part of the de-contextualisation. This document was assessed numerous times in isolation to create a better understanding of the types of topics discussed. Each solution then received a number of tags, or codes, depending on its contents. These tags were then grouped based on their similarities, and turned into categories and subcategories, thus re-contextualising the solutions.

ANNEX I: Images of the Belgian game sessions



Figure 1: First game session with older adults



Figure 2: First version of the boardgame played with adults



Figure 3: Preparation of game session with children



Figure 4: Awareness game session

ANNEX II: Images of the Austrian game sessions



Figure 1: Routing version Austria - Two positions of the game boards; ©AustriaTech



Figure 2: Routing version Austria - game board with points of interest cards; ©AustriaTech



Figure 3: Awareness version Austria - game board with game materials; ©AustriaTech

ANNEX III: Images of the Swedish game sessions



Figure 4: Game 2, with comments by the participants on sticky notes

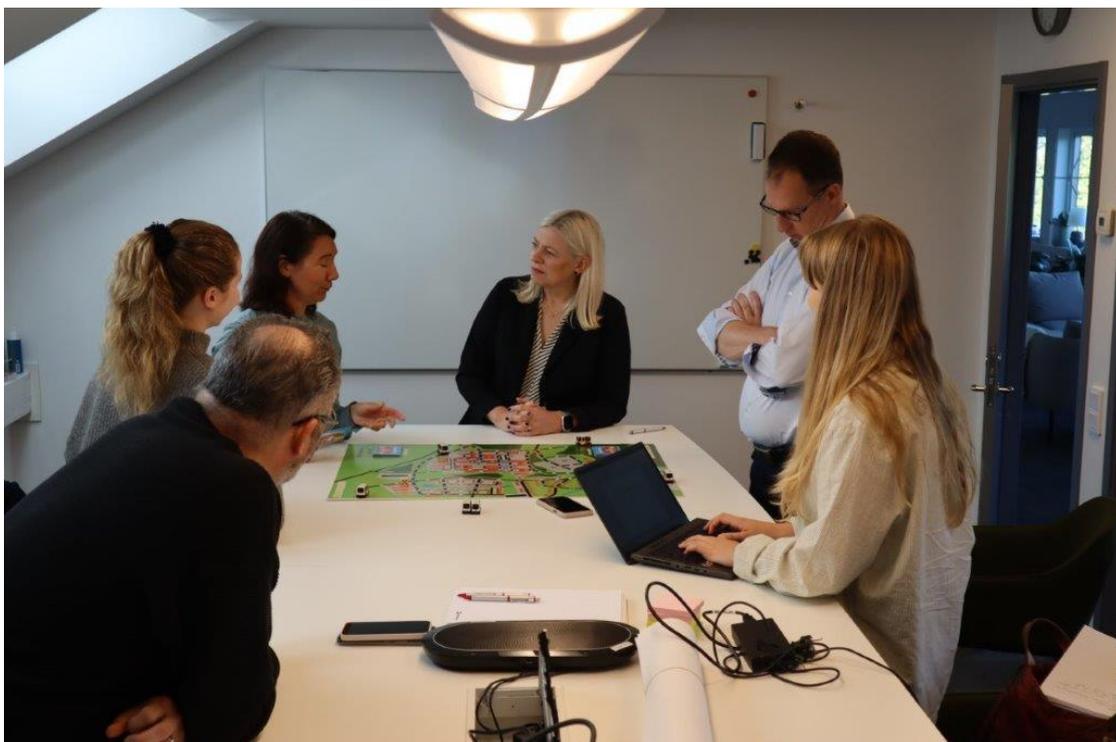


Figure 5: First game session, Game 1 with participants from Östgötatrafiken.



Figure 6: First game session, Game 1 with participants from Östgötatrafiken.



Figure 7: First game session, Game 2 with participants from Östgötatrafiken.

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