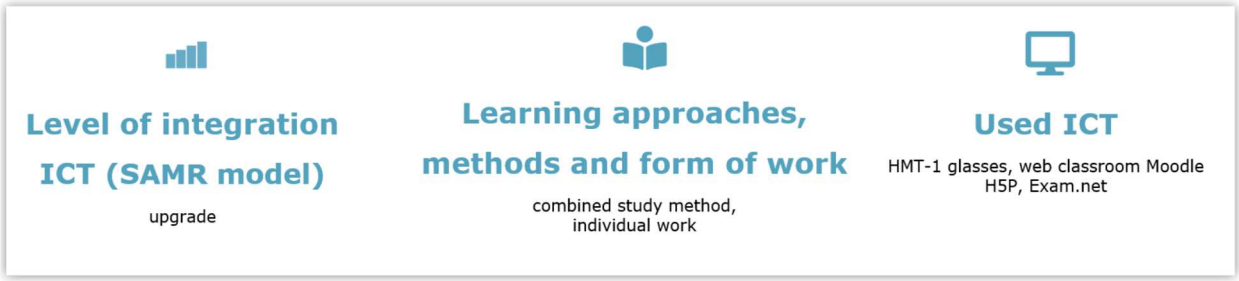
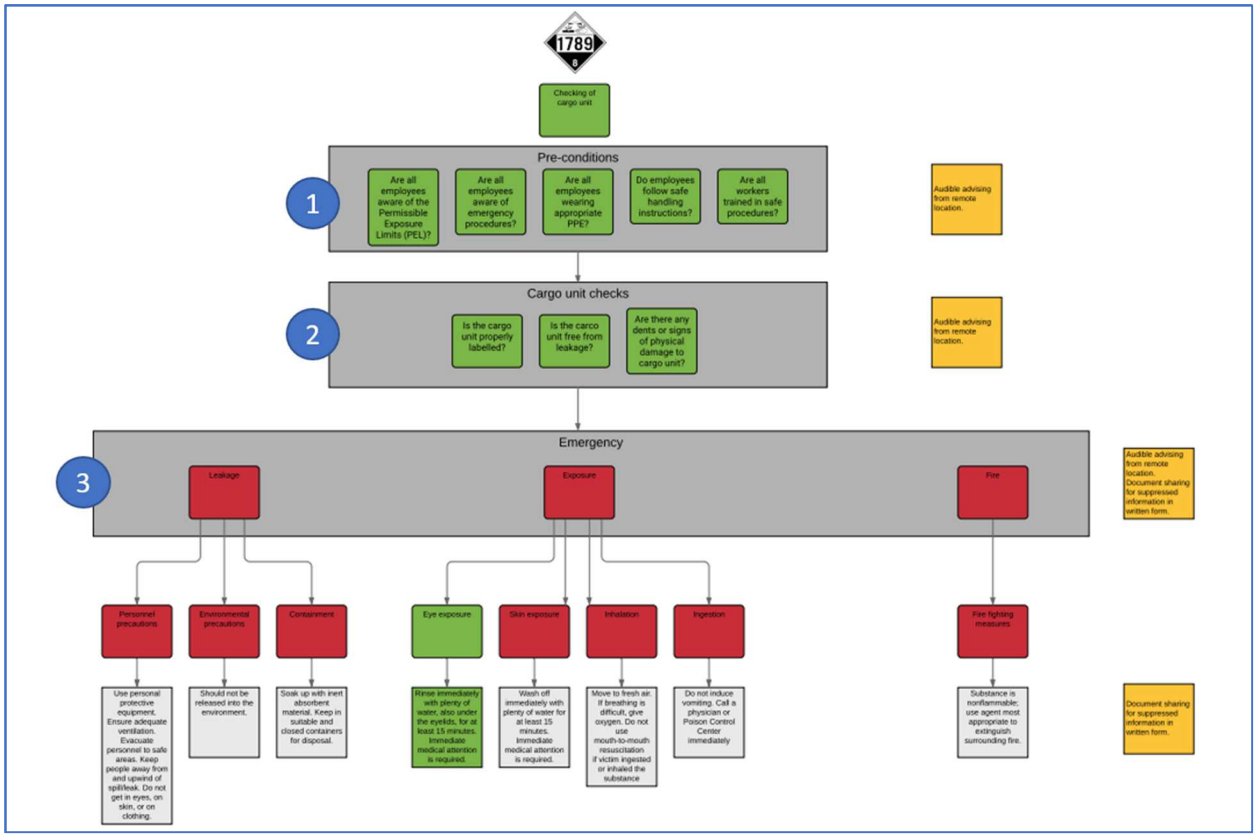
Scenario 3: Logistics/Fleet Assistance

System Architecture

We used a custom (open source) H5P platform for the scenario applied for HMT-1 use.



The Flowchart define the steps/procedures needed to execute the task – cargo unit inspection.



The whole procedure process is divided into 3 sections:

1. Pre-conditions
2. Cargo unit check
3. Emergency

Each section is sliced into detailed parts student/lecturer needs to follow/be aware of.

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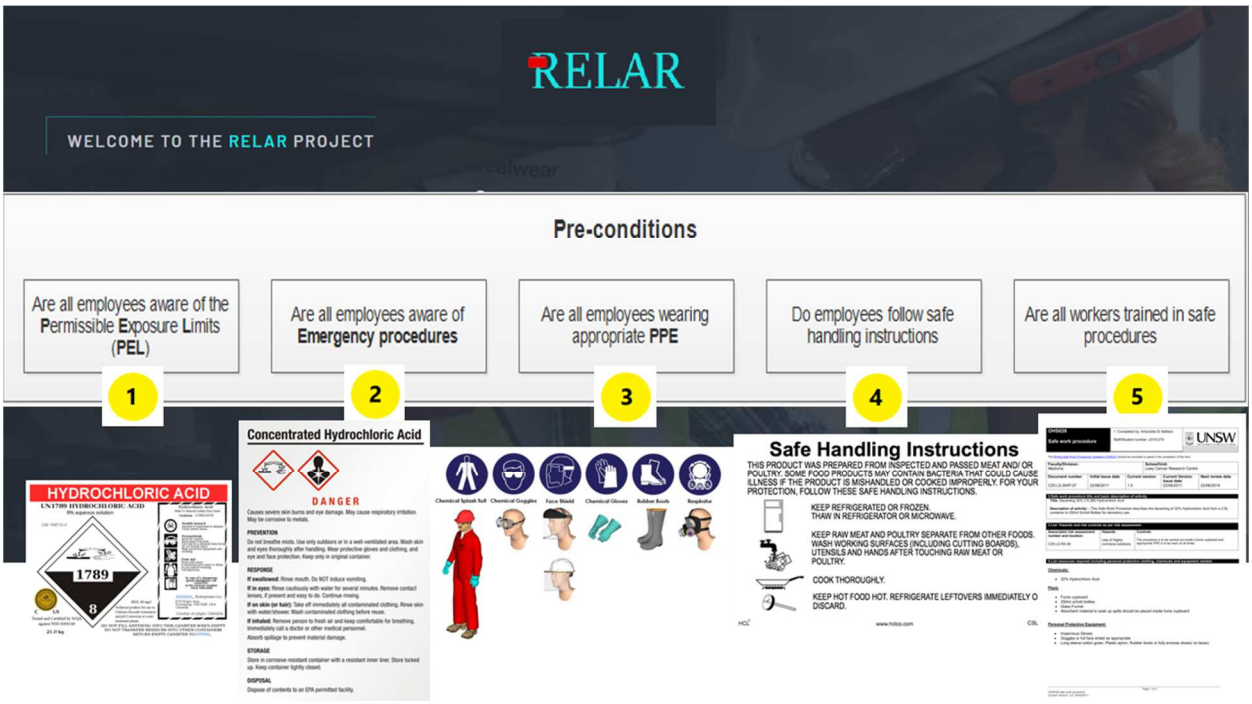
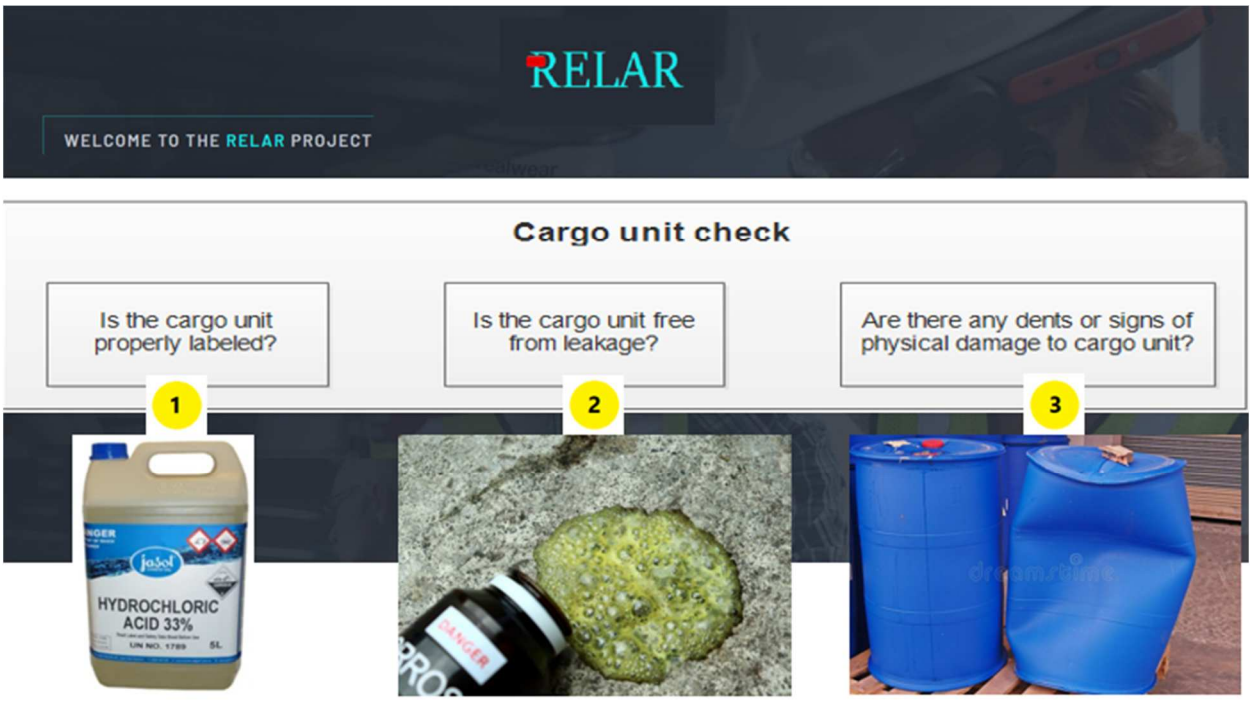


1. **Pre-conditions are precautions and measures student/lecturer must be aware off before executing the operation (task).**

To each of the active button (numbered from 1 to 5) we added relevant documents and instructions (images and PDF's):

1. Permissible Exposure Limits (PEL)
2. Emergency Procedures
3. Personal Protective Equipment (PPE)
4. Safe Handling Instructions
5. Safe Work Procedures

2. **Cargo Unit Check**

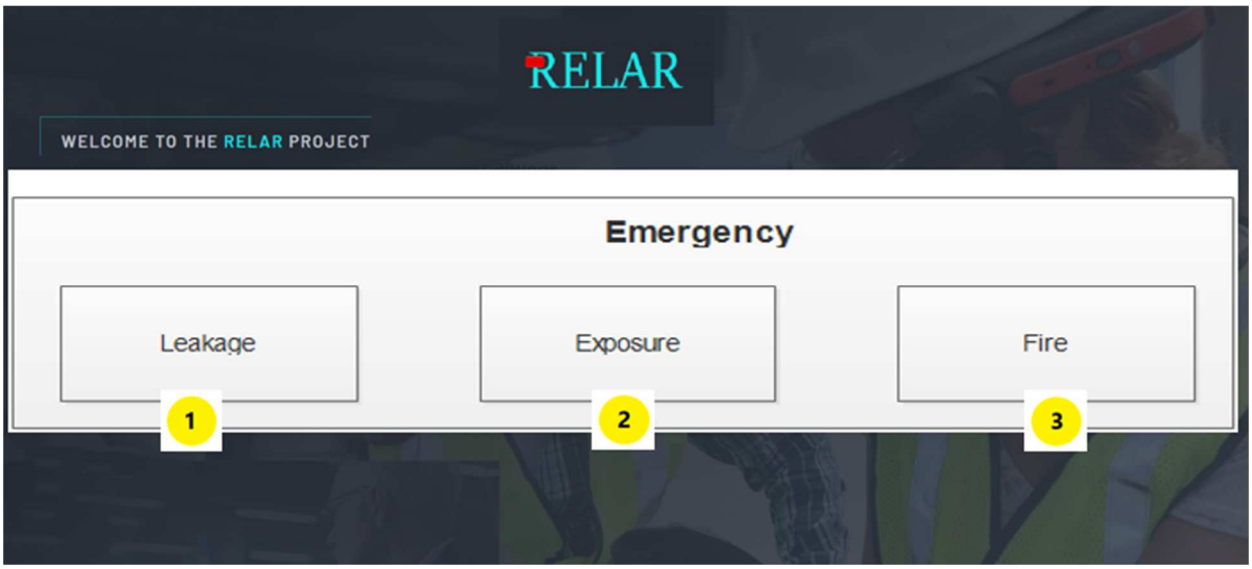


This section is divided into 3 parts:

1. Properly labelled cargo unit
2. Leakage free cargo
3. Physical damaged cargo check

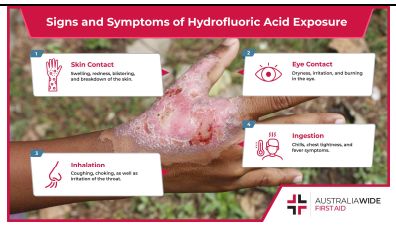
The students/lecturers are checking cargo units based on certain cargo type, packing and volume.

3. Emergency



This section is also divided into three parts based on possible dangerous situation that may occure.

1. Leakage
2. Exposure
3. Fire

		HCA by itself is not flammable but in contact with certain metals (Mg, Al) couse a reaction.

When exposed with Hydrocloric Acid certain measures are necessary:

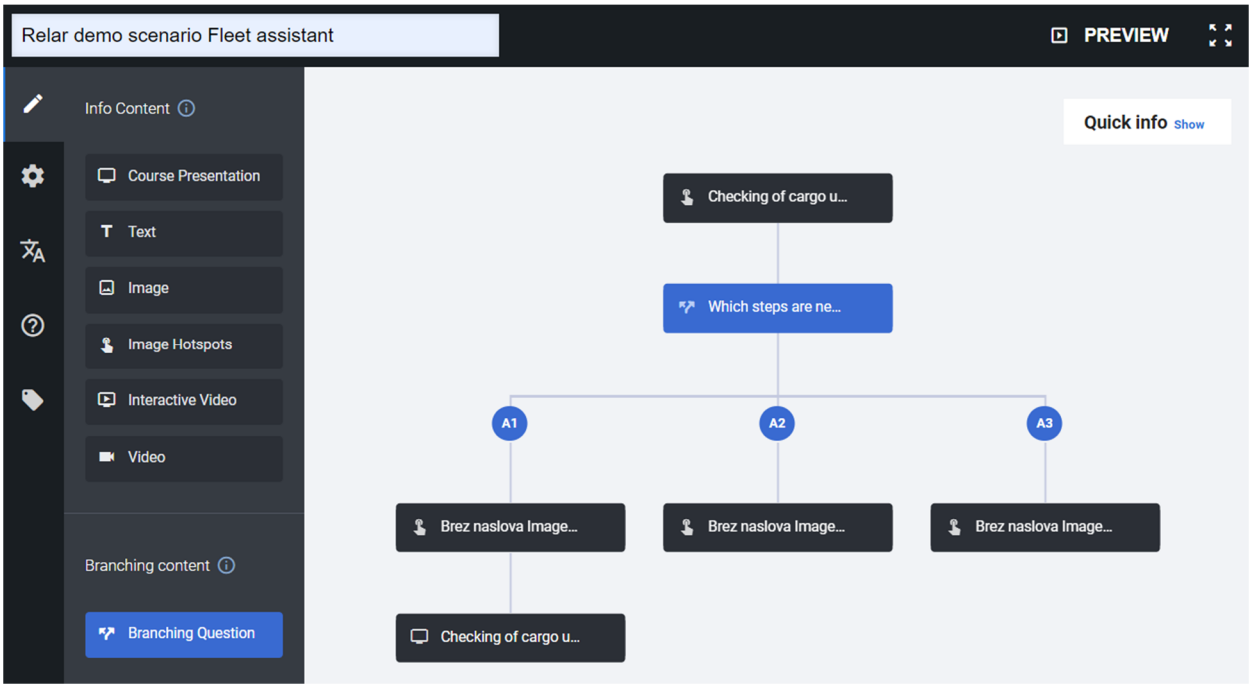
Eyes washing	Shower (whole body/skin)	Inhalation (oxygen) mask
		

In every operation there must be always two persons in operation so in case of emergency one calls an ambulance or firefighters and first secure and help exposed person.

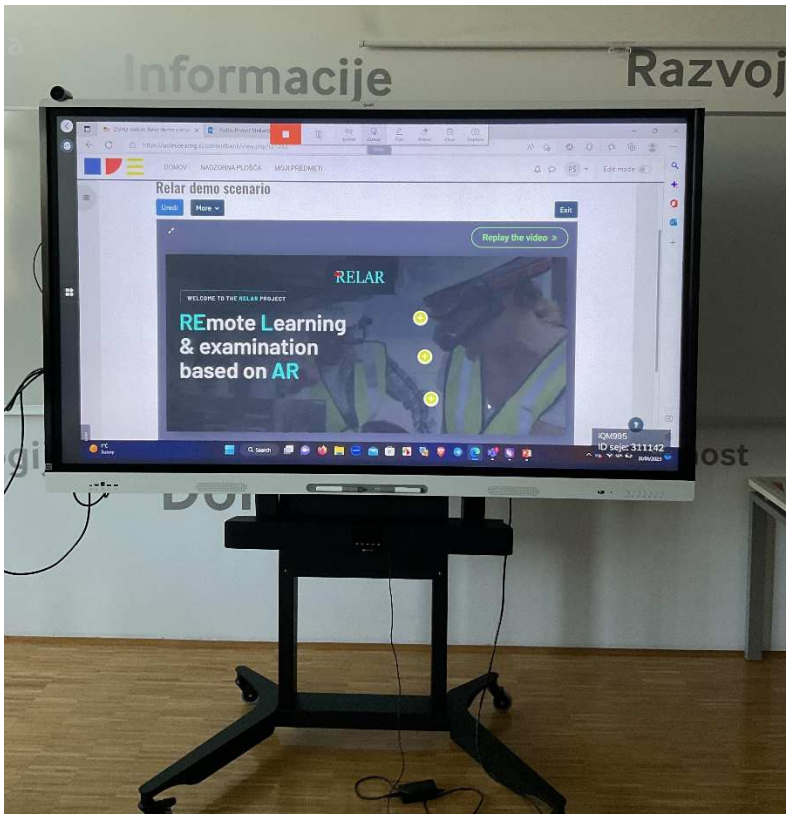
Digital Workflow

Based on technical issues we faced during the testing of HMT-1 glasses and connections through Foresight we decide to use open source Platform – H5P and build a branching scenario.

At the moment this seems like acceptable and suitable solution.



We are modifying and reshaping the content look and functionality.



We tested the branching scenario in the classroom.

Using H5P within the Moodle environment we solve the problem with app code scanning.

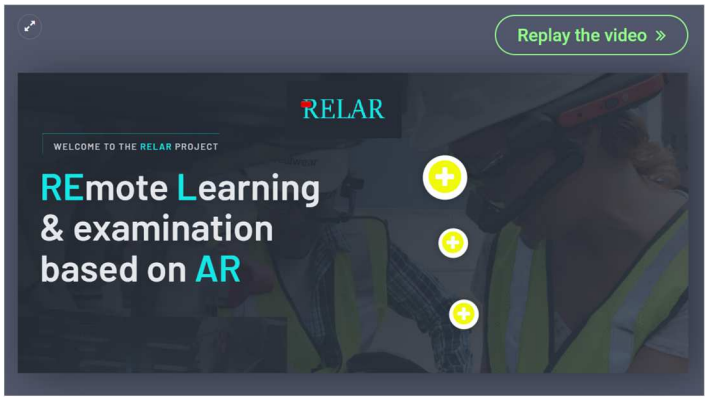
Opening the active repository is indeed with the voice command; Mouse click but that not appear as a problem in executing the process.

- *Public Resource Repository*

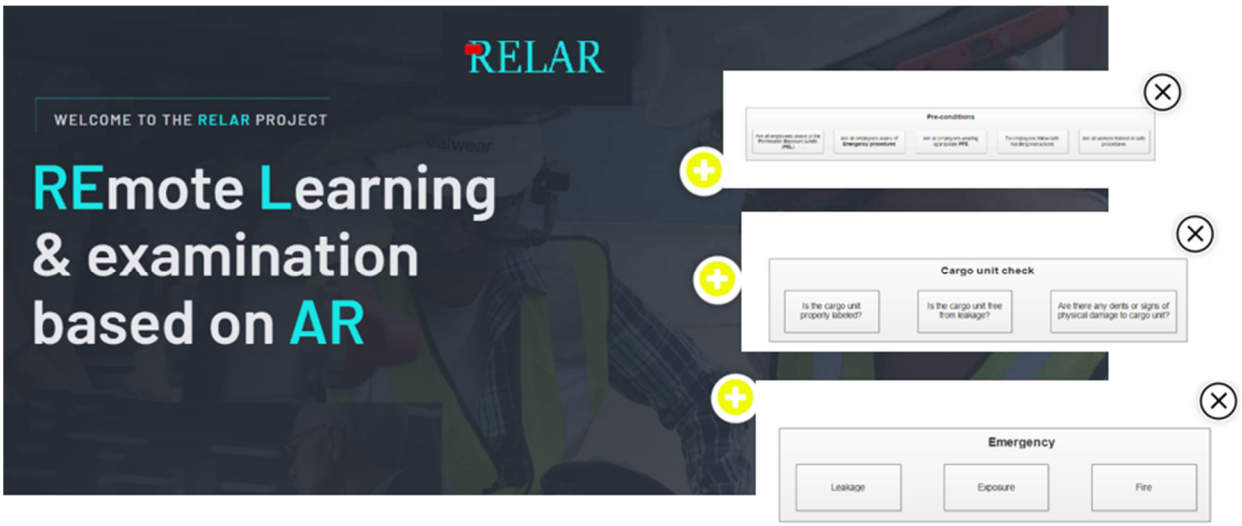
Since many public educational institutions on different levels have access to a Moodle Platform that ease the process of creating content for those teachers and lecturers that will be interested and have the motivation.

- *Resources*

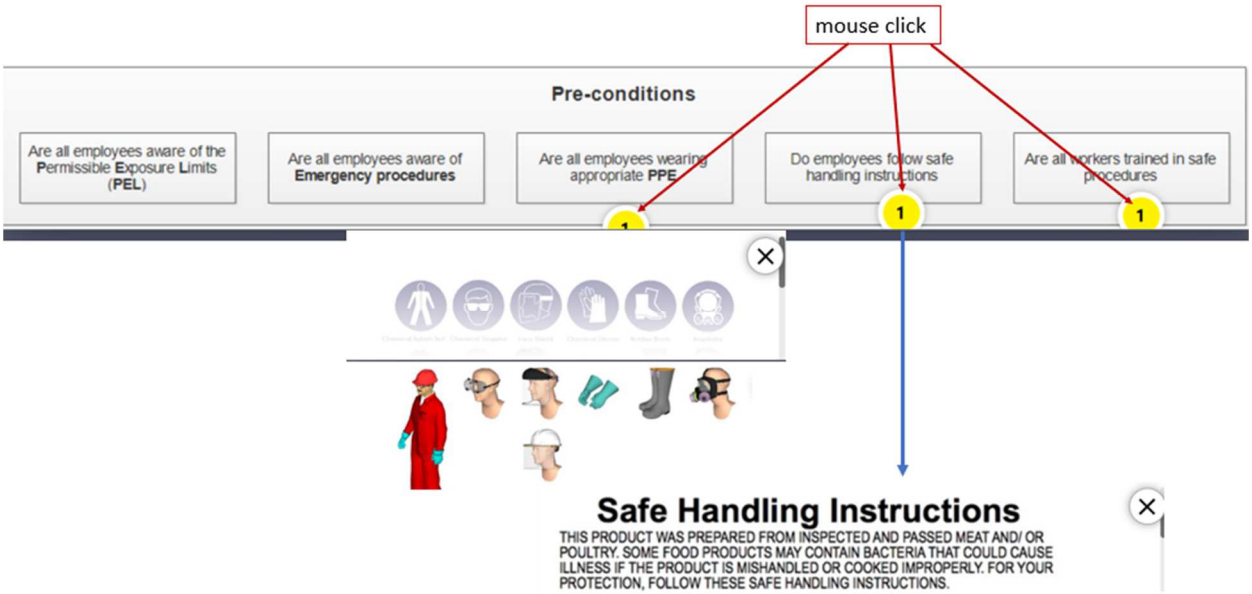
1.1.1 Testing of Scenario with students.



Interactive points – indicate the content.



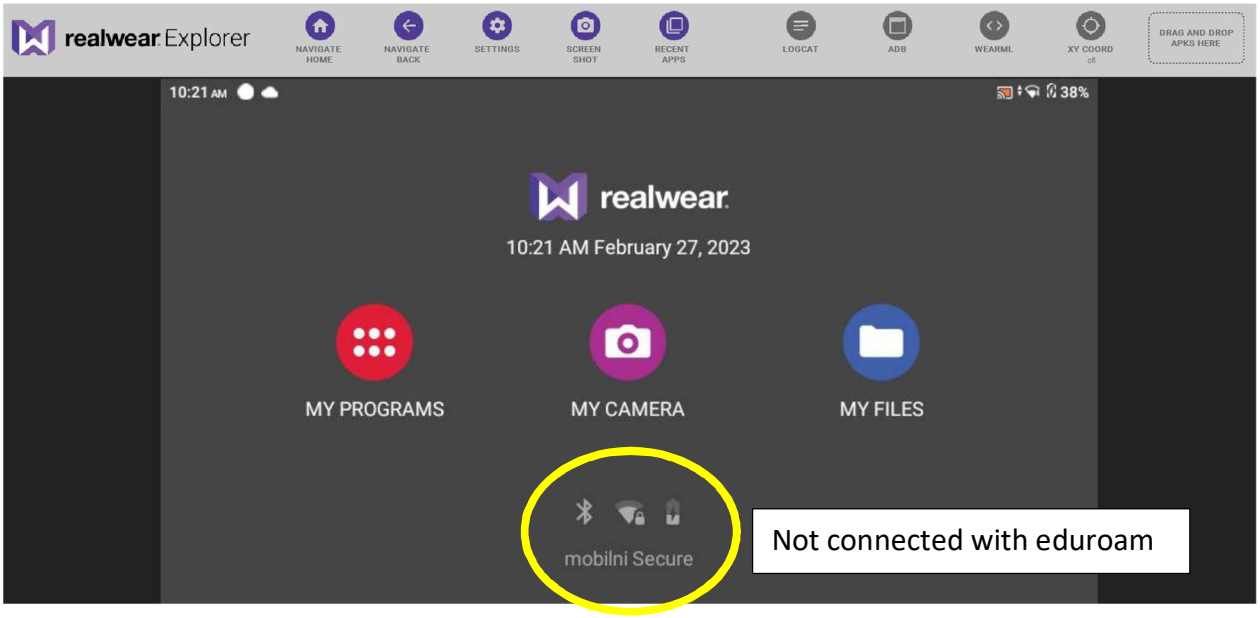
Each section is later divided into individual steps:



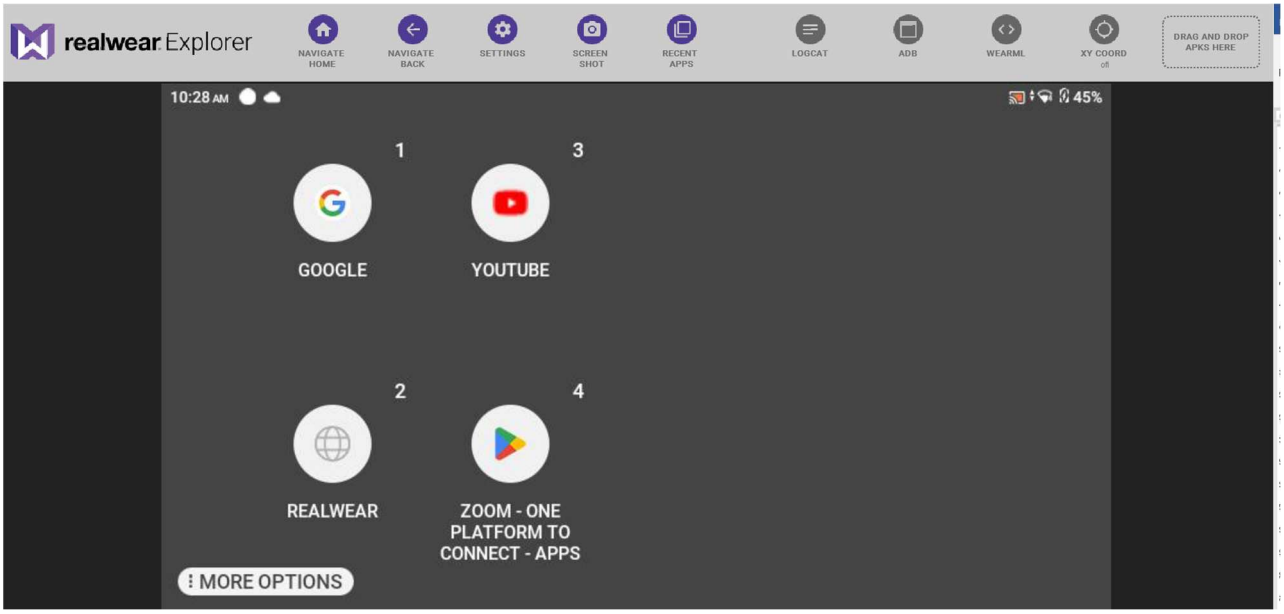
At the moment we are in the phase to agree with one of our partner companies to test the scenario on the field – truck or container inspection and to make a movie – use case of inspection procedure.

Tin the next step we test the Platform scenario online SCNG (Slovenia) – SAMK (Finland).

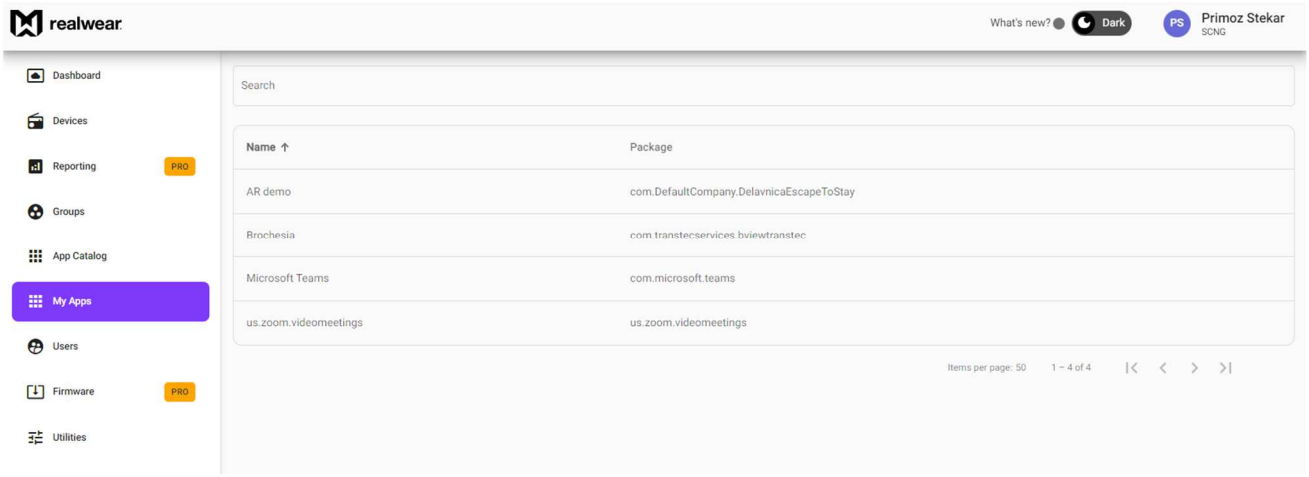
Wireless connection; we faced the problem since Android devices can't be connected to pedagogical Eduroam network. Therefore we establish separate access point in the classroom.



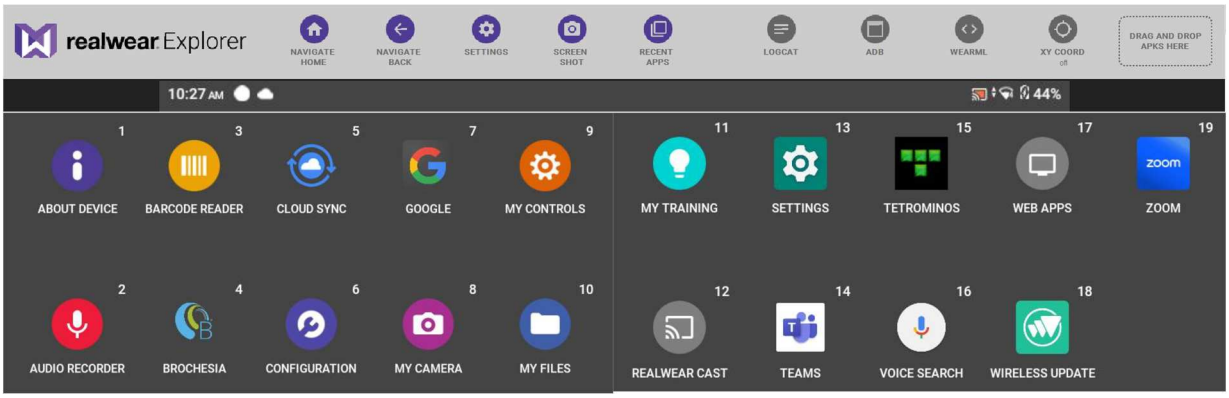
WEB apps



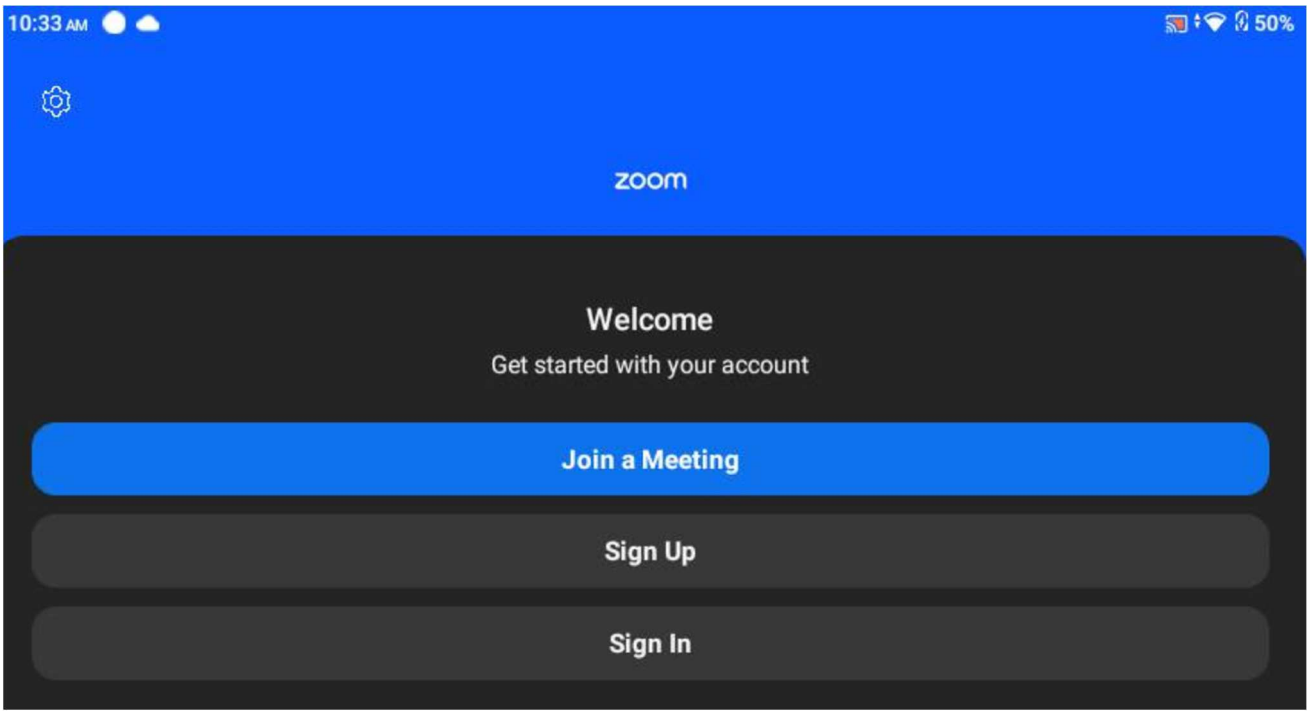
During testing we faced the issue since APP's on the HMT-1 desktop were not synchronised with Realware Foresight:



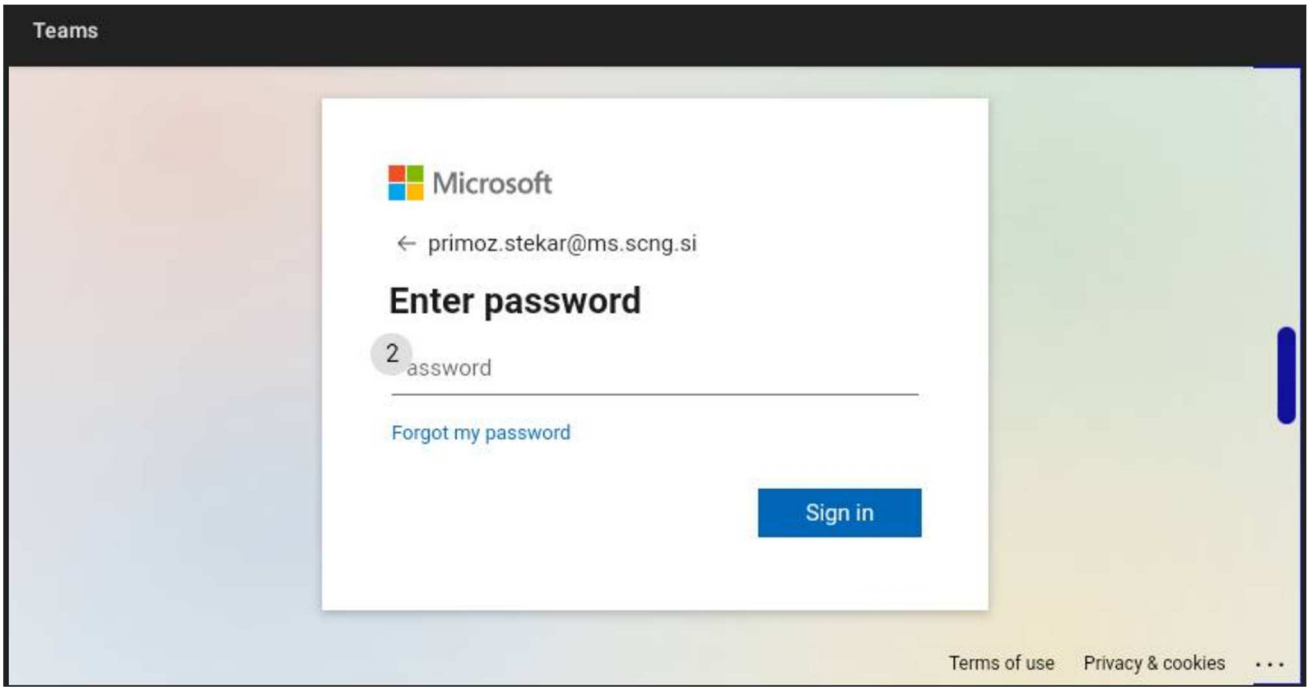
We solve this with downloading APP's directly to HMT-1 device platform.

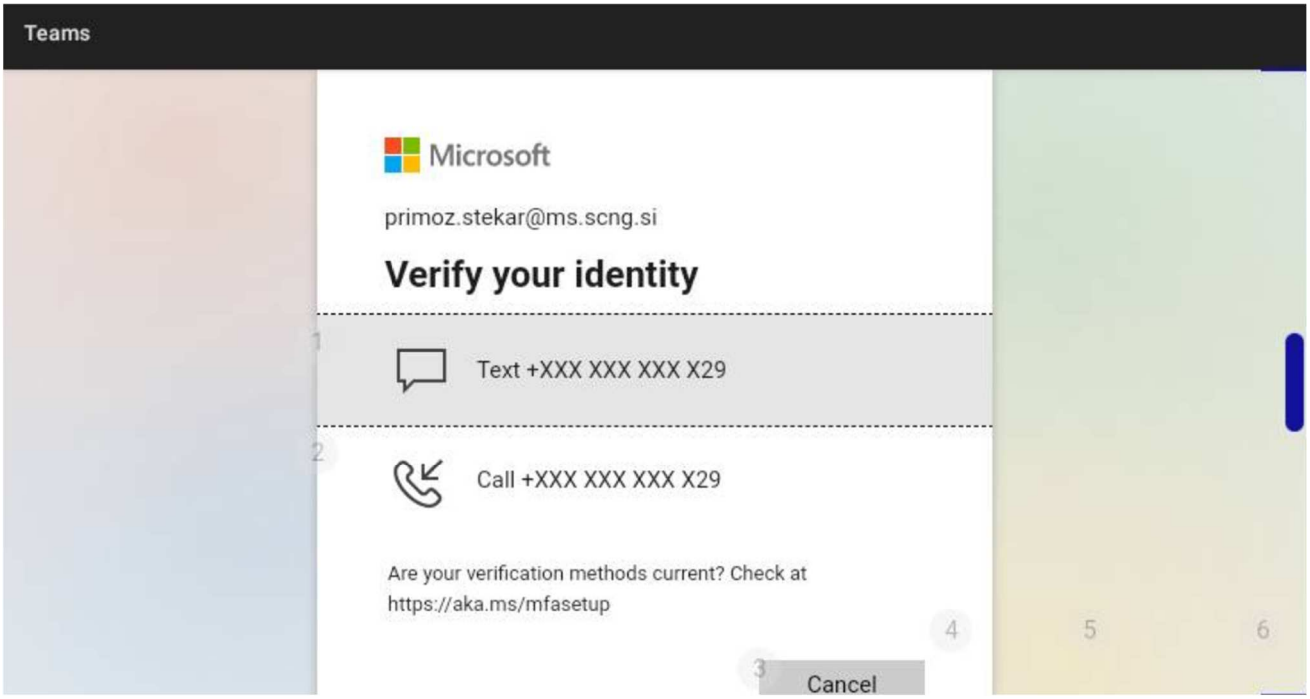


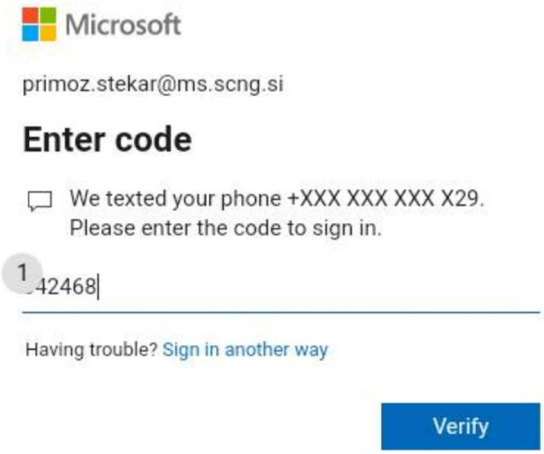
For remote online connection we used Zoom APP.

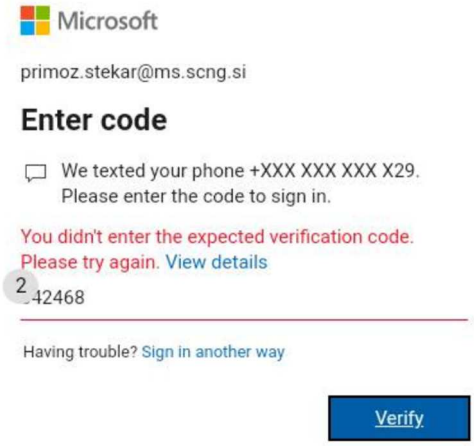


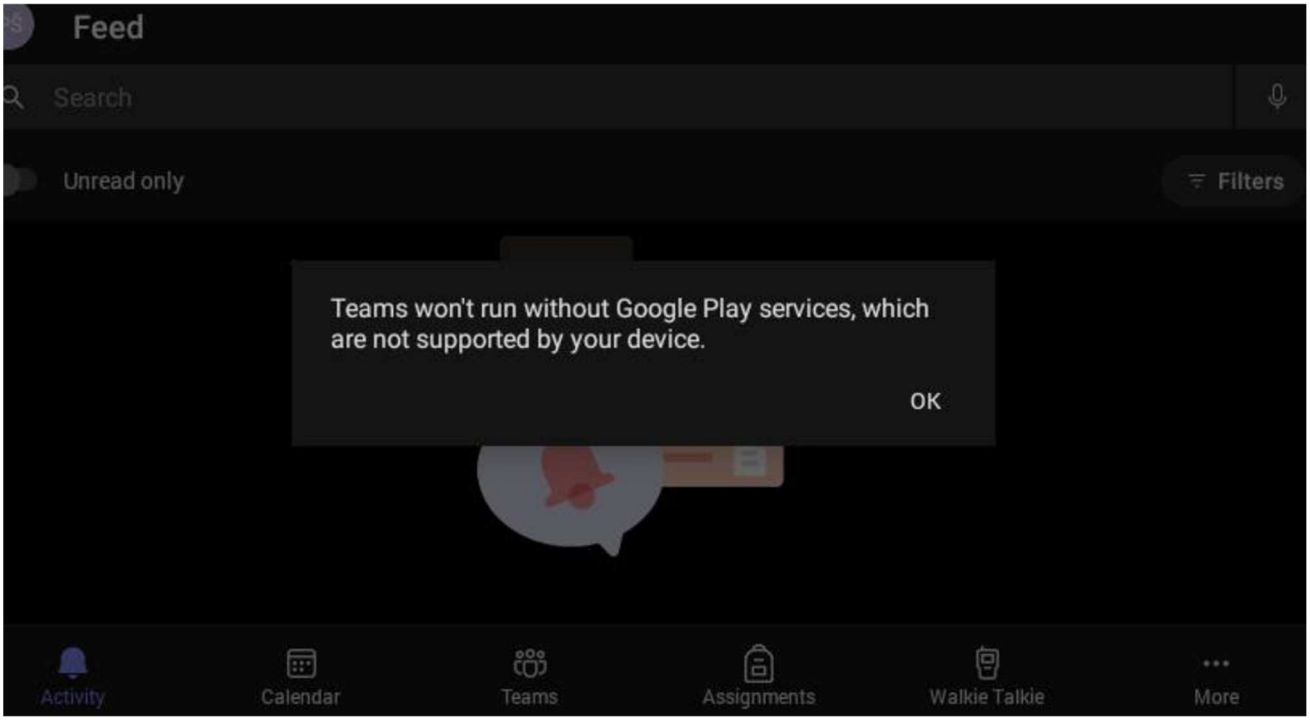
Since we run into a problem connecting through the Teams. Development team at Realware informed us that they are working on Microsoft connectivity with HMT-1 and searching for best solution.

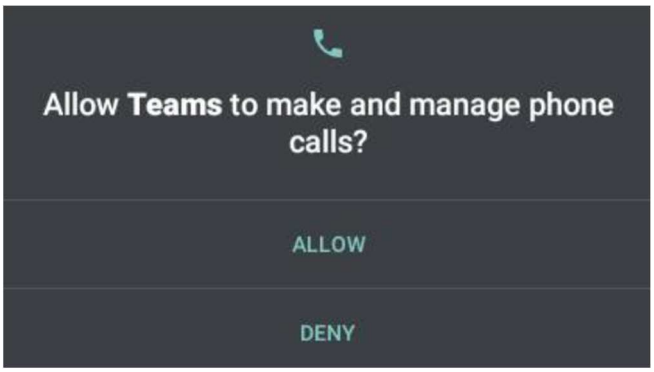


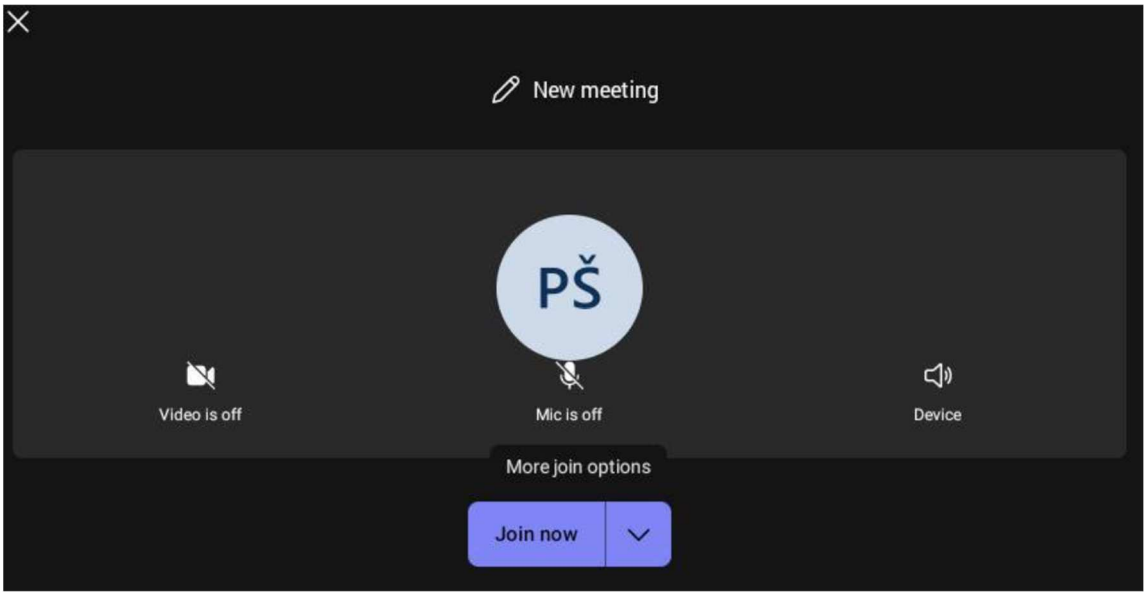



Microsoft
primoz.stekar@ms.scng.si
Enter code
We texted your phone +XXX XXX XXX X29.
Please enter the code to sign in.
1
42468
Having trouble? Sign in another way
Verify

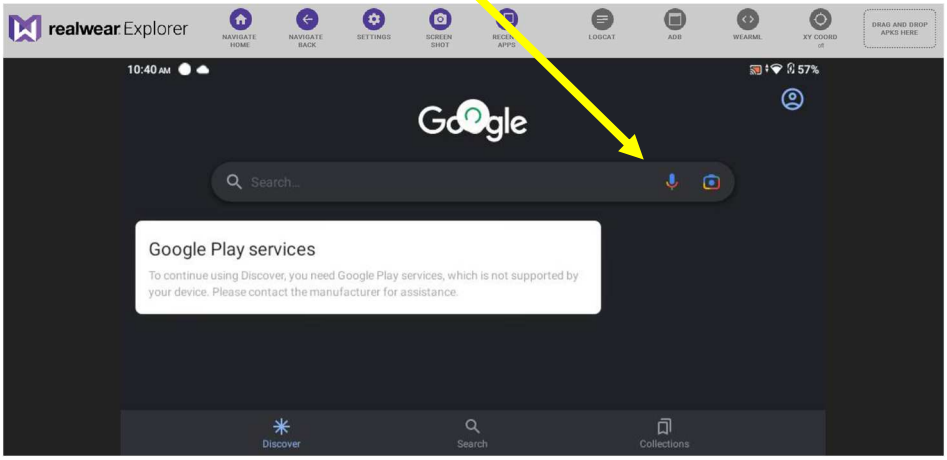

Microsoft
primoz.stekar@ms.scng.si
Enter code
We texted your phone +XXX XXX XXX X29.
Please enter the code to sign in.
You didn't enter the expected verification code.
Please try again. View details
2
42468
Having trouble? Sign in another way
Verify


Feed
Search
Unread only
Filters
Teams won't run without Google Play services, which are not supported by your device.
OK
Activity
Calendar
Teams
Assignments
Walkie Talkie
More

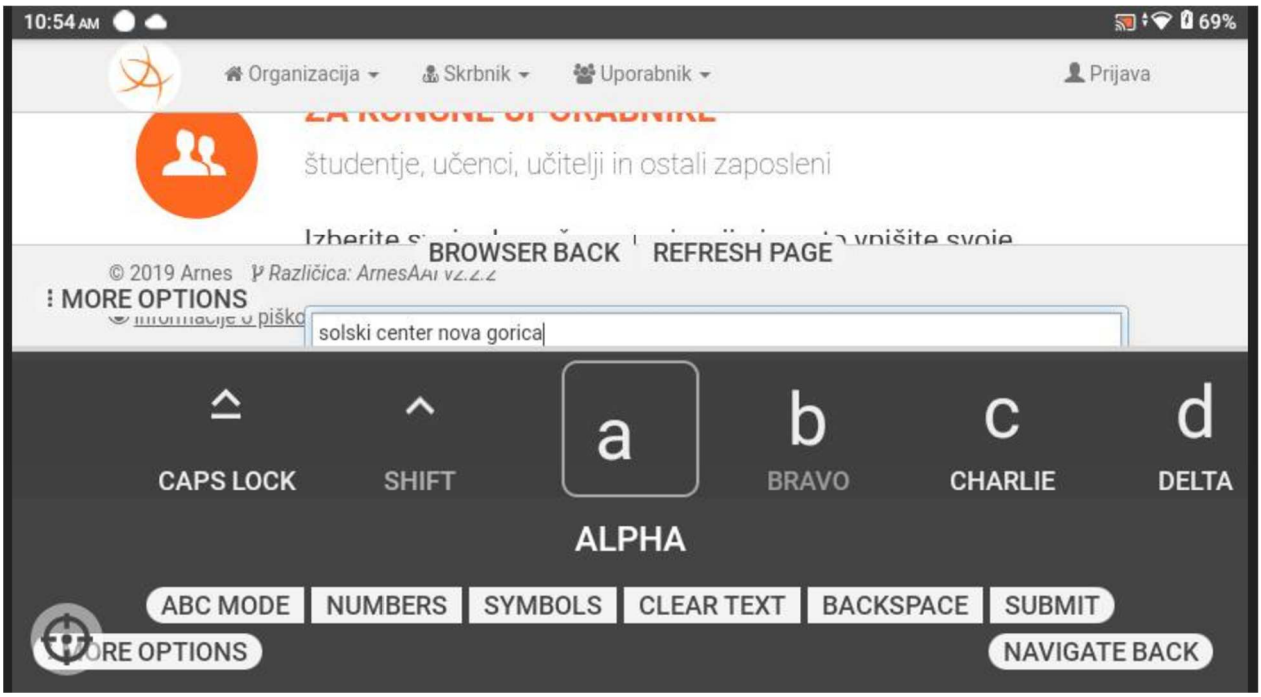


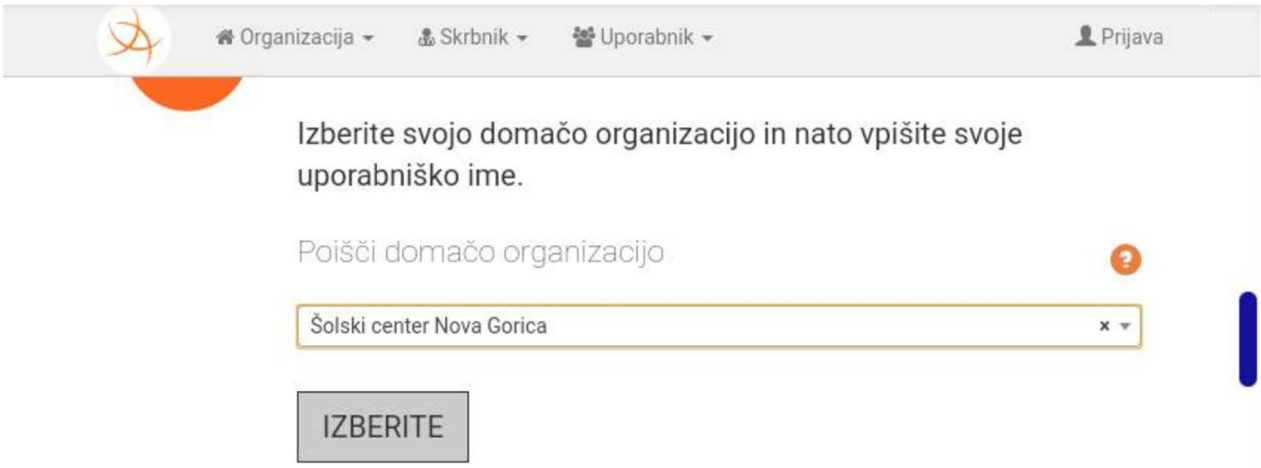


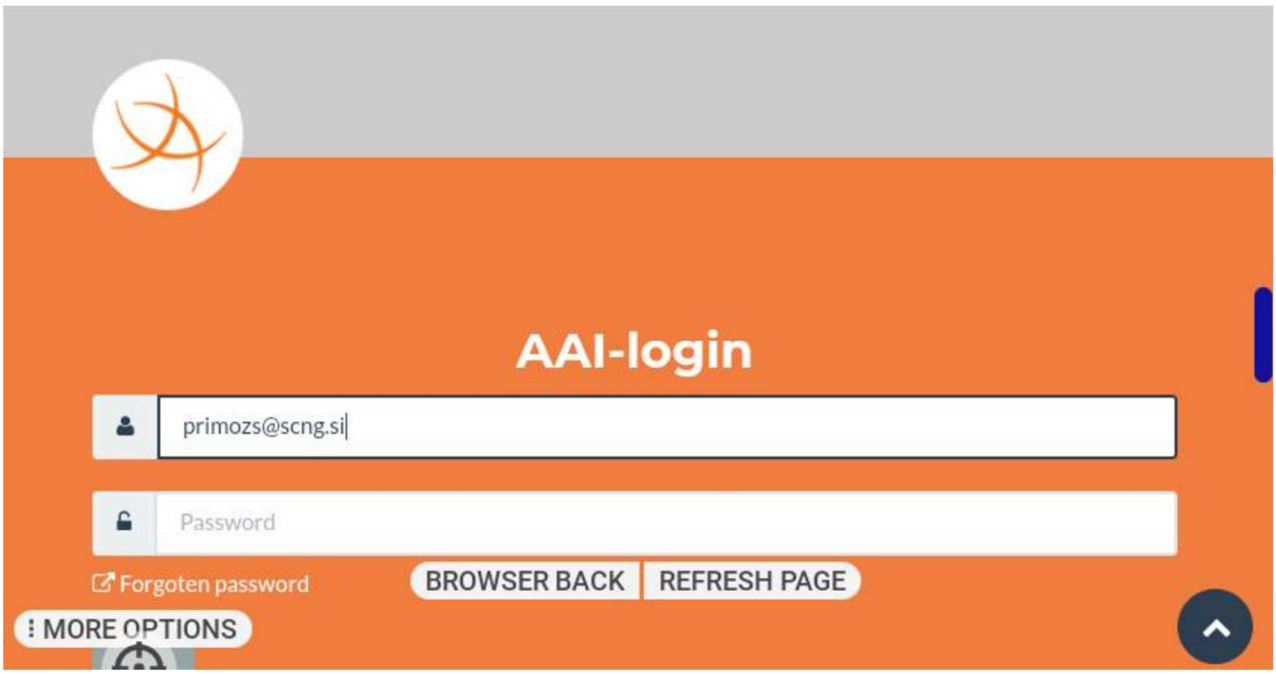
Activating the browser via Google was the issue we tried to solve.

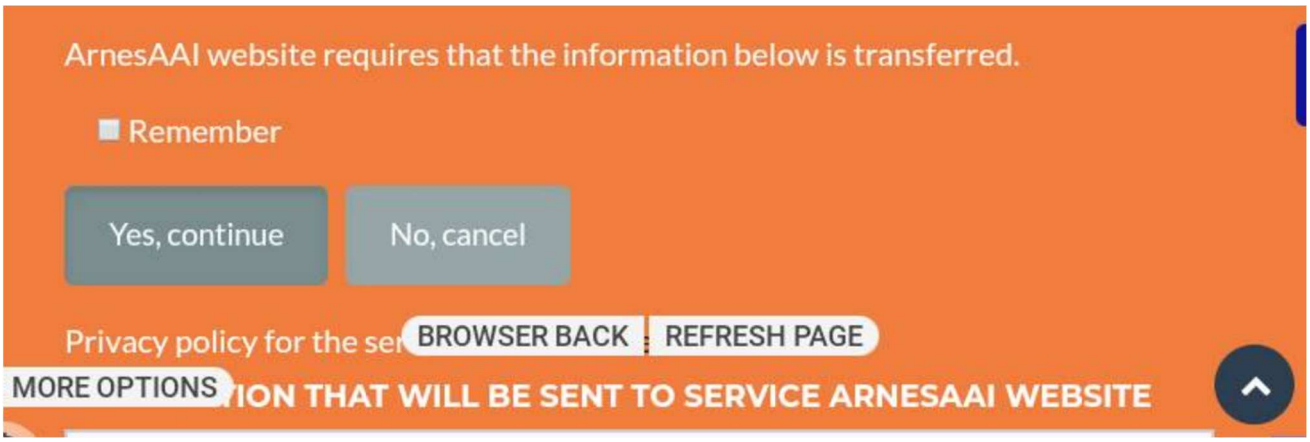


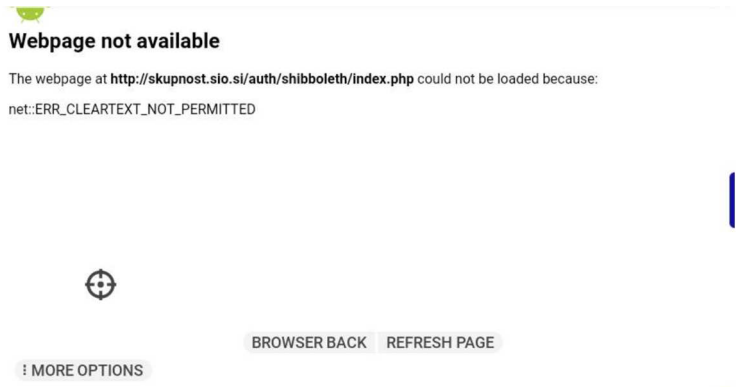
Next attempt was to establish the connection through our national academic network (ARNES).







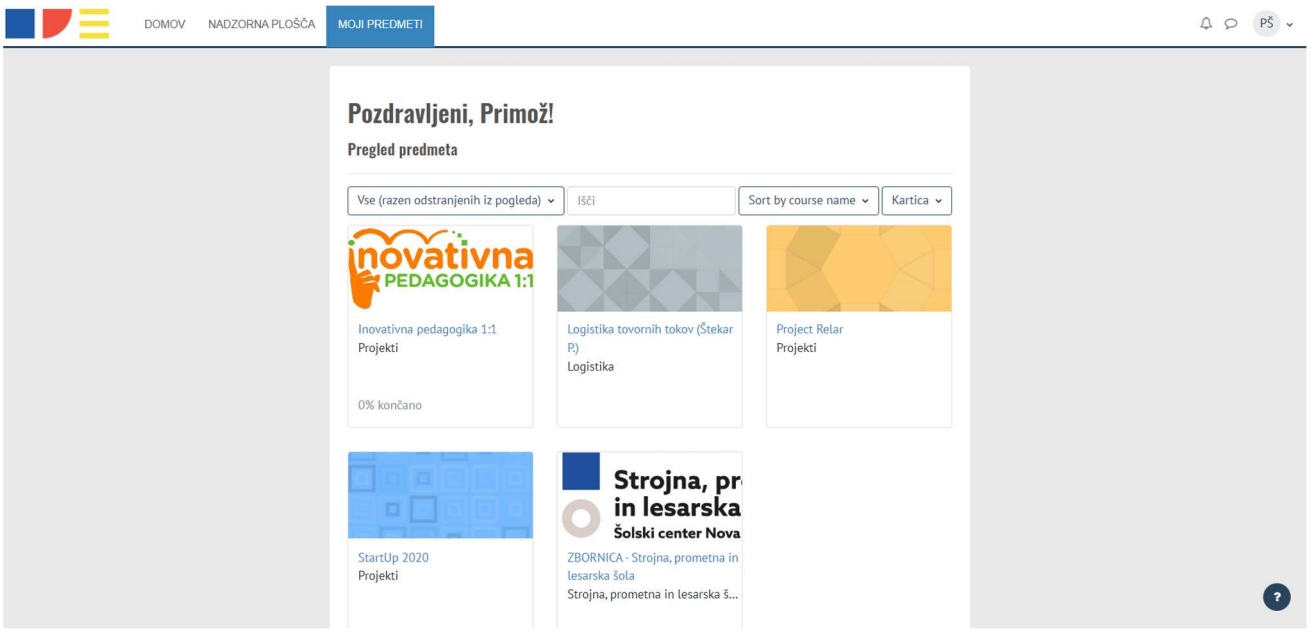




Our aim was to establish the working environment through which we can access via HMT-1 glasses.

Searching for various possible solutions we decide to use H5P branching scenario based on Moodle environment.

Using laptop unable us to enter and use the case with no problem.



Project Relar

Predmet | Nastavitve | Sodelujoči | Ocene | Poročila | Več

Zbirka vsebin

Išči | Dodaj | Naloži

REL

Ime vsebine	Places linked	Zadnja sprememba	Velikost	Tip	Avtor
Relar demo scenario	0	27/01/23, 09.17	9.4 MB	Arhiv (H5P)	Primož Štekar

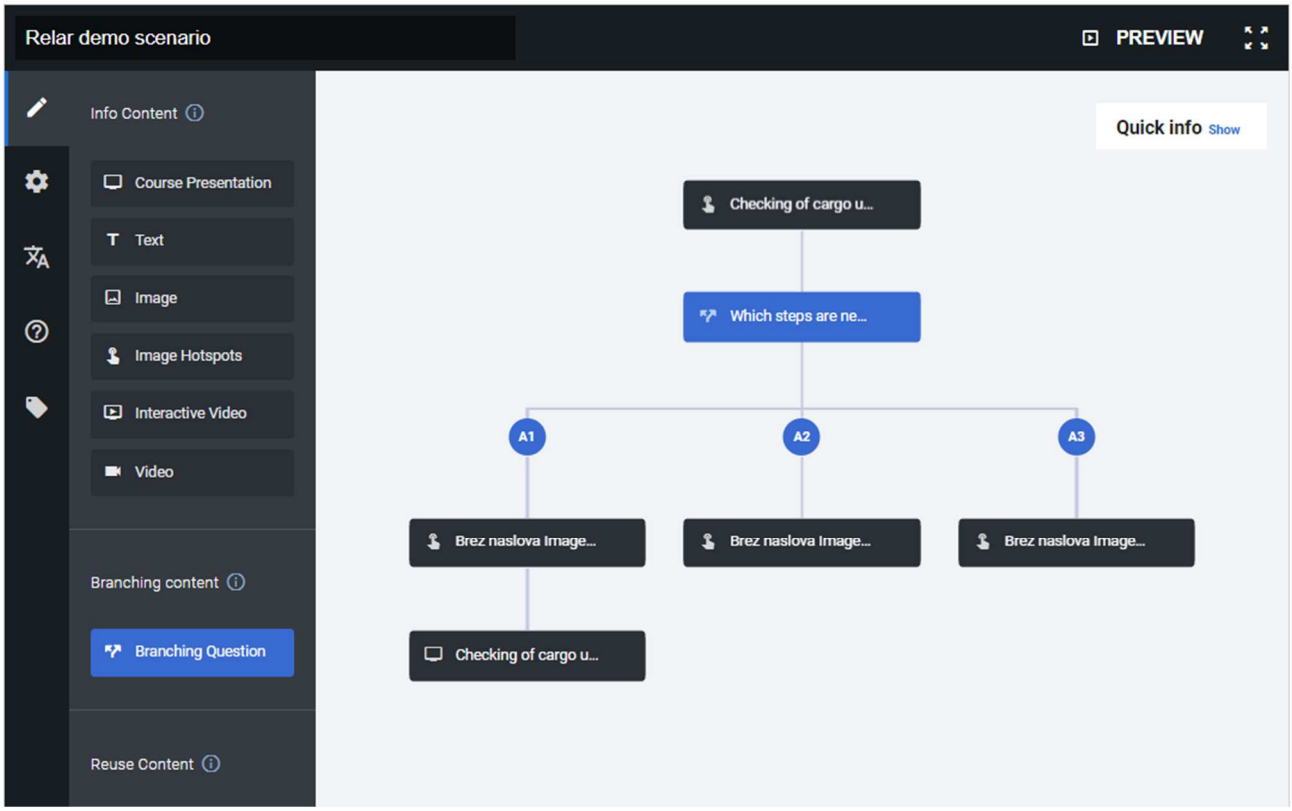
Relar demo scenario ▸ Uredi

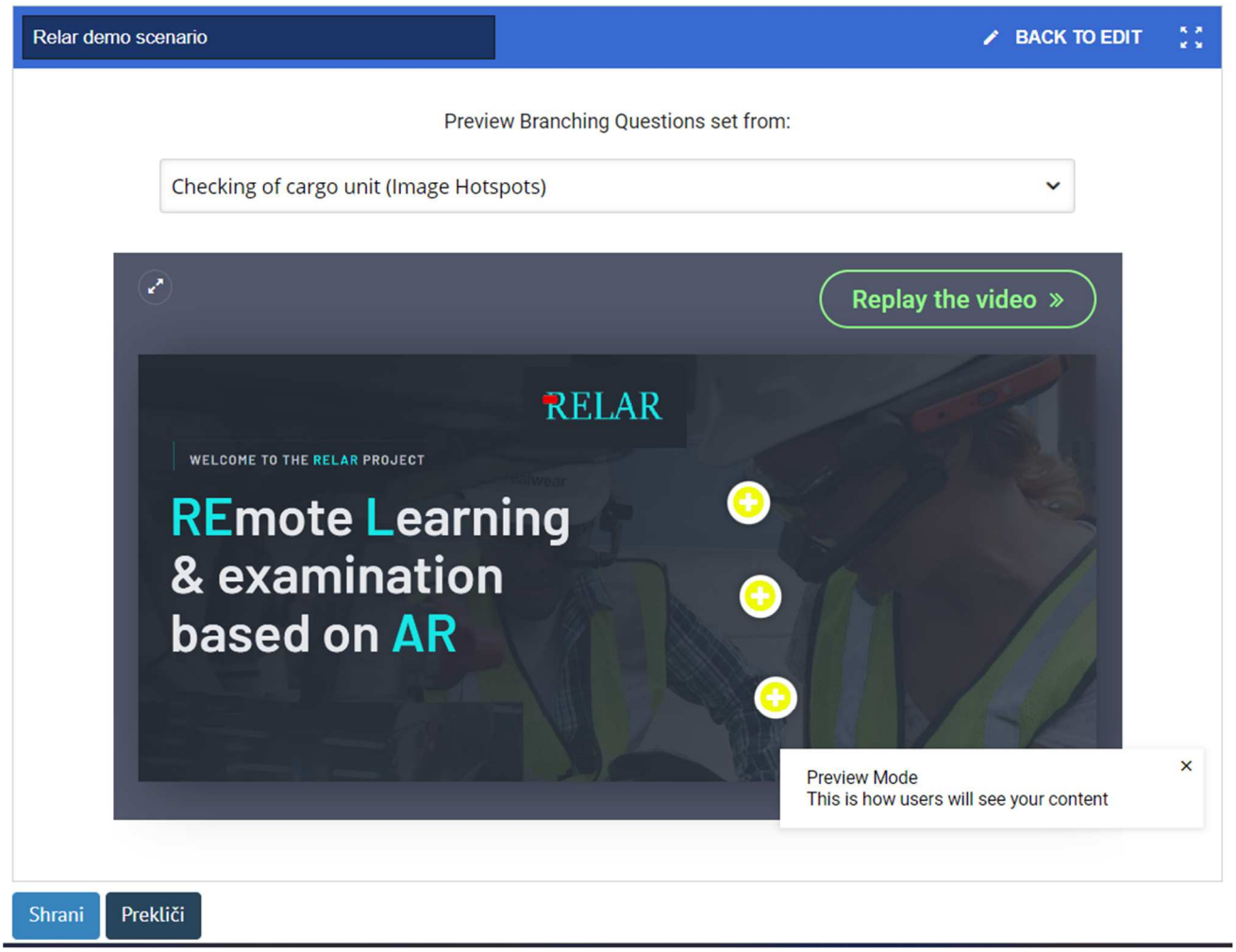
Project Relar

Predmet | Nastavitve | Sodelujoči | Ocene | Poročila | Več

Relar demo scenario

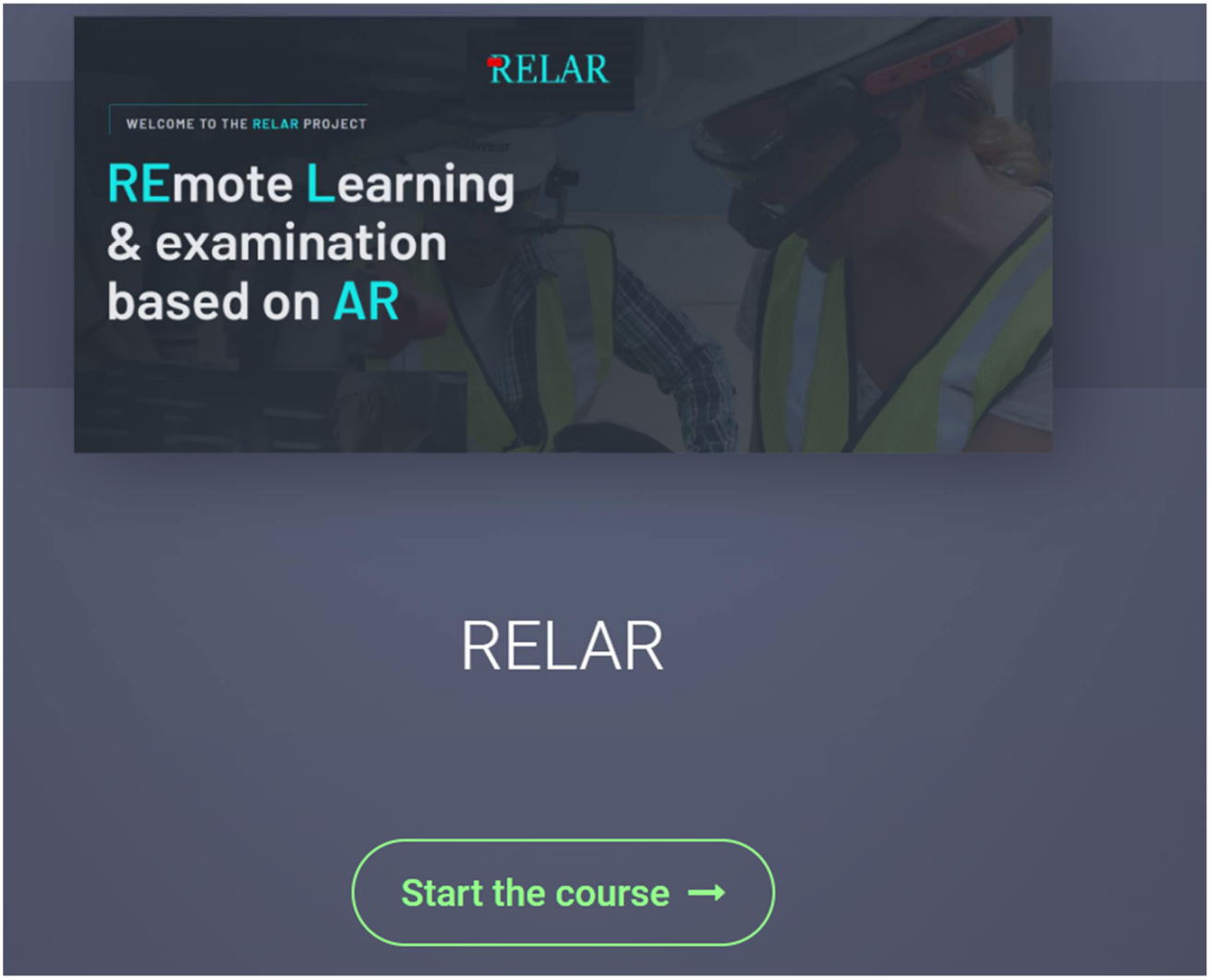
Kopiraj | Prilepi in zamenjaj


Relar demo scenario
PREVIEW
Info Content
Course Presentation
Text
Image
Image Hotspots
Interactive Video
Video
Branching content
Branching Question
Reuse Content
Quick info Show
Checking of cargo u...
Which steps are ne...
A1
A2
A3
Brez naslova Image...
Brez naslova Image...
Brez naslova Image...
Checking of cargo u...


Relar demo scenario
BACK TO EDIT
Preview Branching Questions set from:
Checking of cargo unit (Image Hotspots)
Replay the video »
RELAR
WELCOME TO THE RELAR PROJECT
REmote Learning
& examination
based on AR
Preview Mode
This is how users will see your content
Shrani
Prekliči

But with glasses we faced quite some challenges.

First page:



The app has limited options to arrange the first page:

1. Make the image on full screen (background)
2. Move the title (only option is to eliminate)
3. Move the position of the active button (when using HMT- 1 does not appear on the screen – it is located on the bottom of the screen – almost invisible and could not be activated via voice command)

After all attempts and issues we went through we tested the scenario at Train the trainer event in Rauma (Finland).

The technical hindrances experienced during testing; scenario 3

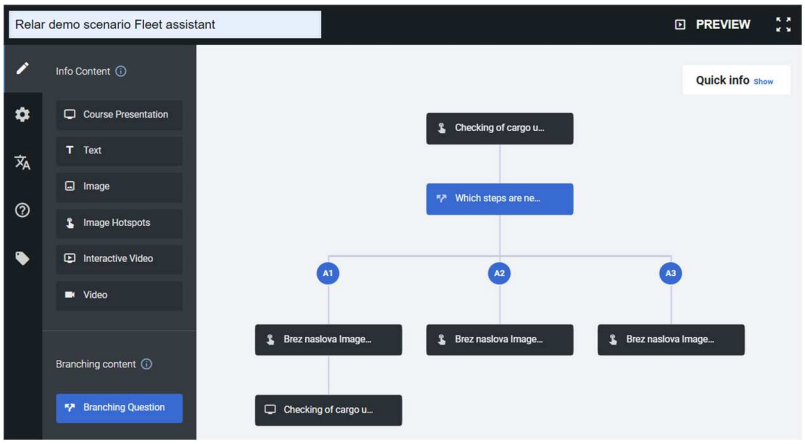
As part of the project delivery three day train the trainer was event was held in Rauma 28th- 30th March 2023. Scenarios *Logistics and Fleet Assistance* and *Marine Engineering* were presented for the audience on site and the presentations were also streamed online. Scenario 2 (Shipyard Technician) led by the MCAST was presented online and streamed to the audience accordingly. First publicly ran trials with the developed scenarios were conducted in Rauma on Wednesday 29th March 2023 during the RELAR Train the Trainer event. Detailed contents of the Scenarios are explained in the previous report for the Output 2 Task 1. The technical challenges experienced during the testing of Scenario 3 can be divided in three categories. In the following paragraphs the technical hindrances of the HMT-1 glasses, the shortcomings of the selected applications, and finally effects of user-specific personal preferences are elaborated.

From technical perspective HMT-1 glasses are clearly meant for one-on-one communication. There are no clear technicalities that would cease the use in group learning context. However, rather than having a shared situational awareness the lesson consists of multiple one-on-one sessions lined up simultaneously. The interaction between students physically apart is minimized when human involvement is merely enabled between a single student and the teacher. This disconnects the student from a group learning situation. Moreover, a teacher loses the awareness of status of a single student unless frequently re-routing to a connection to an individual student. A meeting application such as Microsoft Teams allows group situations, but in MS Teams the Realwear Explorer image is presented along with all meeting participants and possible chatting functions and such. After these, the student visualization is presented as part of the Realwear Explorer- screen. Image 1 illustarates the student visual being a screen in a screen in a screen. All the screens have their associated tools and selection illustrated around the main screen. This walks us to the limitation of what can be visually presented. HMT-1 visualisation has its known limitations in size and unless accompanied by a computer or such, a visual feel of interaction is reported to be very limited by the students. Based on the above an initial conclusion is, that the selected technology best suites in a self-guided learning context where the scenario is designed to support individual progress and the teacher is in the background stepping in when assistance is needed.

Image 1. Primoz Stekar introduces the Scenario 3 structure for the audience in Rauma Train the Trainer event (Janne Lahtinen, 2023).

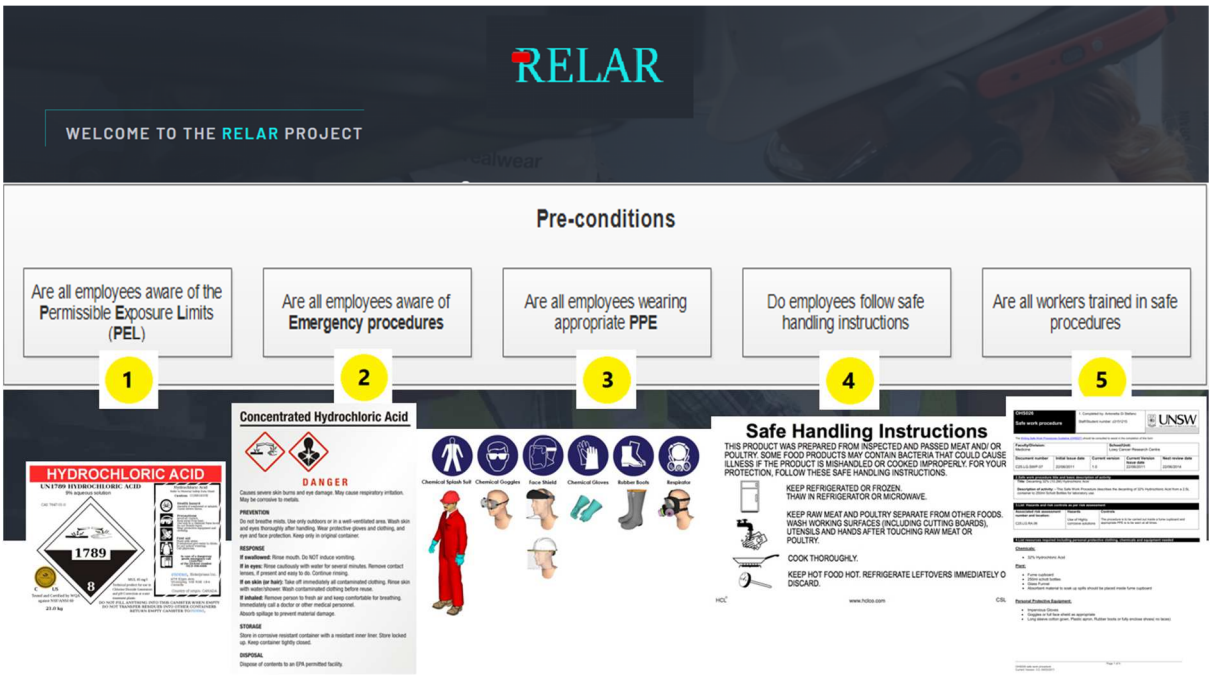
The application selected for the Scenario 3 is H5P, that is an HMTL- protocol based online platform. It offers low-threshold access and it interconnects well with other applications across the chart used in education. H5P offers multiple functions such as the use of “hot spots” as visual links to enclosed information, pictures, video, and literature.

We started with H5P Branching scenario adopting Scenario requirements for execution.



Through the process preparation we decide to divide the scenario into three levels which suited the content of the cargo inspection:

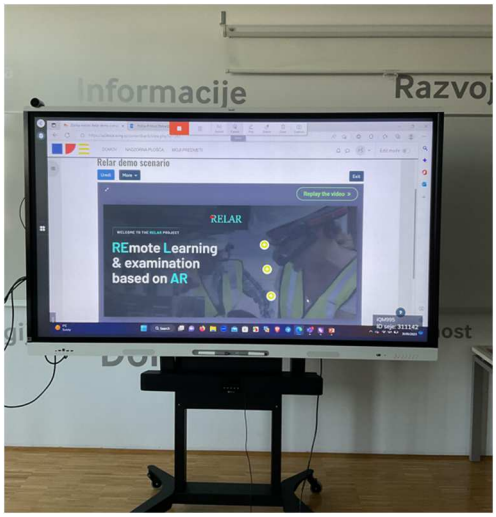
1. Pre-conditions.
2. Cargo unit check.
3. Emergency procedures.

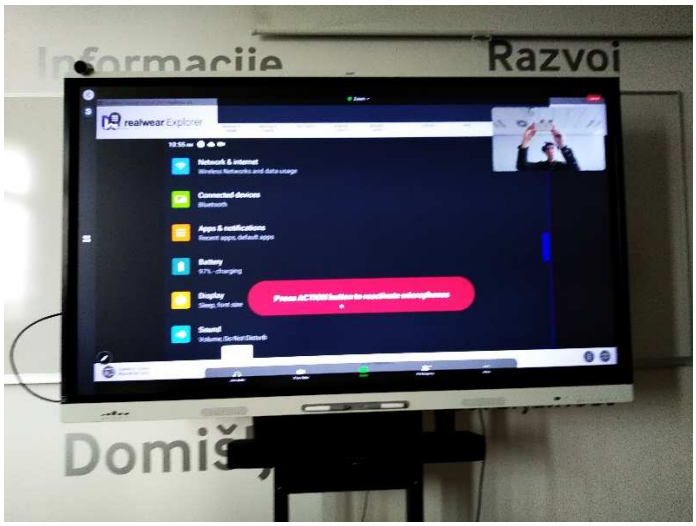


Within the branching scenario we used before mentioned ‘’hot-spots’’ like active icons which can be activated with HMT glasses.

First testing brings to the surface some technical issues we had to solve:

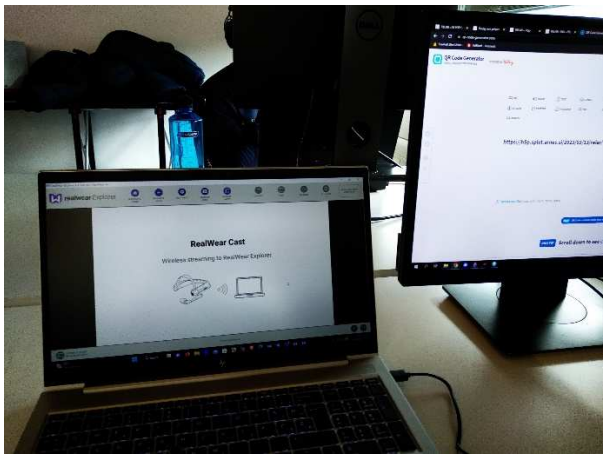
1. Wi-fi connection – the HMT (android based) glasses are not working within pedagogical Eduroam wi-fi environment, so we had to establish other on the spot wi-fi router.



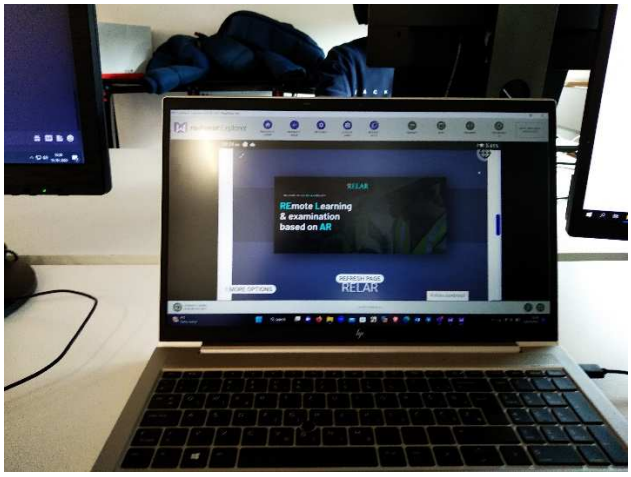


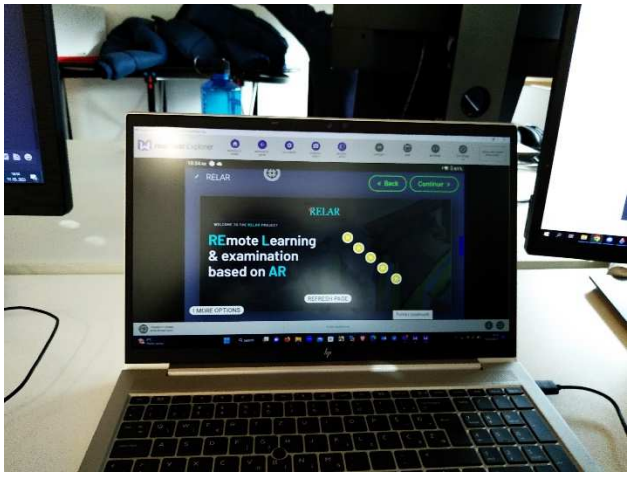
2. Establishing remote connection within MS365 environment. We find out that during testing Zoom environment work much easier and better. But on the other hand we succeed to work within MS Teams environment during the workshop in Rauma.

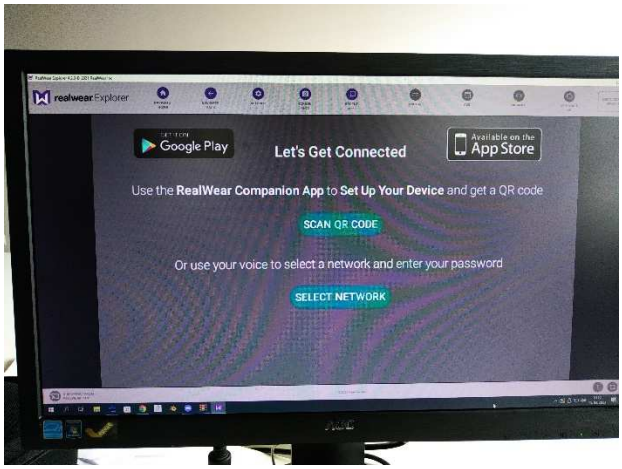
To enter the H5P with HMT-1 glasses was another challenge we need to address and solve. After trying to enter through web page, e-classes we find the solution with direct access through generated QR code:



After few unsuccessful attempts we succeed to enter the environment and activate hot-spots to work.







During the testing it became implicit that the construction of the scenario must be very simplified as the HMT-1 visualization does not enable user-readable highly detailed tables or small font-text unless zoomed in multiple times. Zooming in again disconnects user from the content forgetting the main subject student is working with.

The experience with the HMT-1 best suits examining the level of capability rather than initial teaching and collection of knowledge base. This feature is highlighted in a safety critical subjects such as the examination of a chemical container in Scenario 3. Documentation presentation in HMT-1 screen is landscape, when majority of the educational content is published in vertical orientation. Image 2. illustrates a practical issue of sharing of information in an A4 PDF when the zoom level must be increased to be able to read the text. Moreover, the slide bar in the PDF is not functional in the HMT-1-environment, but voice commands must be used. It can be concluded, that if using H5P as a platform with the HMT-1, all material needs to be prepared in a landscape format with large fonts and with no very detailed visual information.

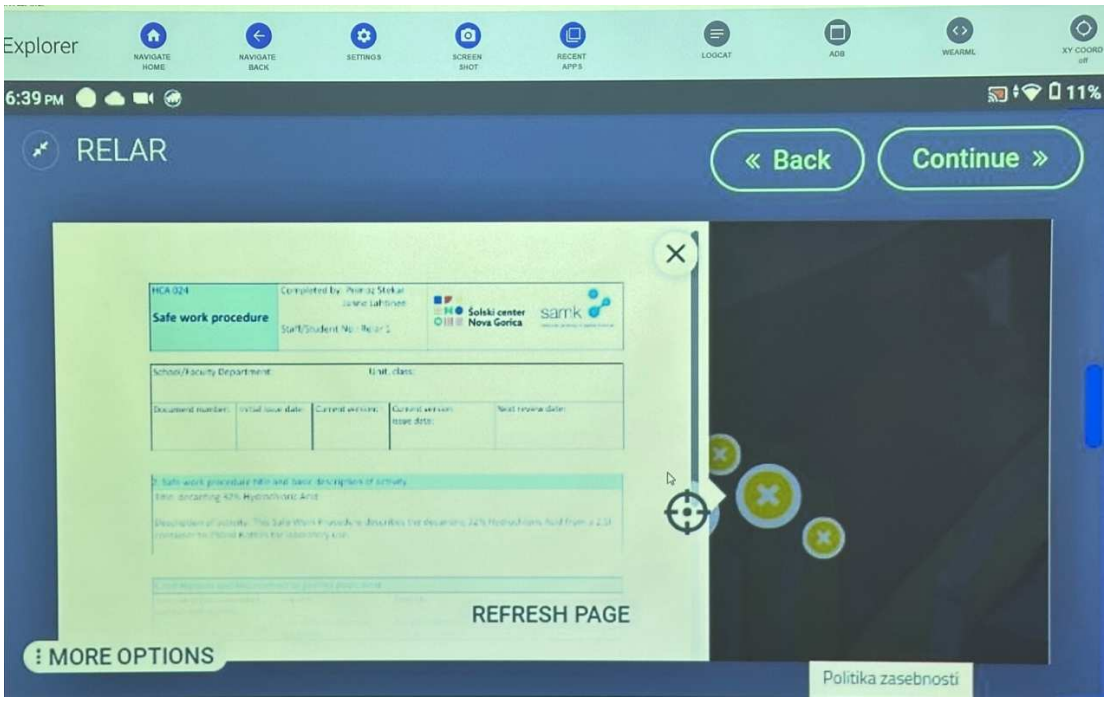
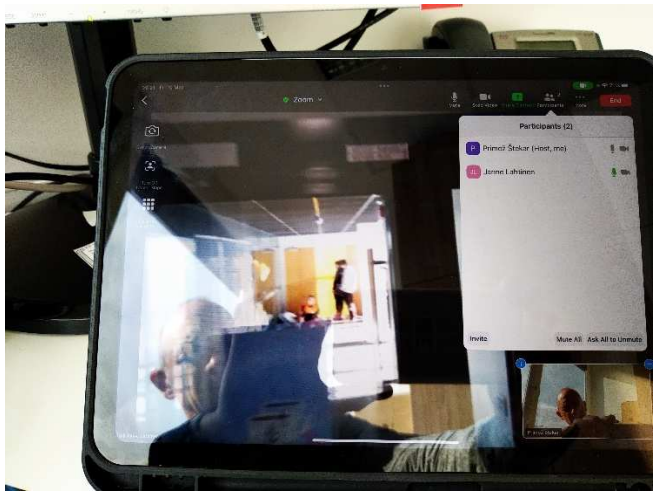


Image 2. Safe working procedure as seen in an HMT-1 screen by a student (Janne Lahtinen, 2023).

Before the partners Train the trainer event we want to make sure that everything will work well so we execute various pre-test procedures:

1. With students

2. Partners meetings testing responsible for scenario preparation – within Zoom environment.



User-level preferences became physically present during the practicing of the use of the glasses. The size-adjustments, personalized voice commands, movement speed and sensitivity of the cursor, and the volume settings makes the HMT-1 glasses highly personal item. This assumption is supported by the previously made of the technology being most suitable to a one-on-one learning context. Students experienced the default setting glasses being difficult to suit in a diverse learning context when multiple features of an application, and even multiple applications, are used. Feedback from interviews after the test indicate high importance for the learning of the use of the glasses, the use of the application and the opportunity to personalize the glasses before immersing into the course.

After testing and consulting with other teachers we find out that the easiest way to enter the platform H5P and start the course is to use QR code. The next step was to generate QR code to enter the environment unable access from HMT-1 as well as smart phone via code reader app.

Furthermore we search for the solution to ease the online access with HMT-1 device. With the same analogy we create the QR code to access direct to ZOOM meeting (with the invitation from host).

H5P enter code.

Zoom meeting enter code.

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