



NTNU

Norwegian University of
Science and Technology

**ULTIMATE - An audiovisual journey through the use of art and
technology in Virtual World**

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ULTIMATE



WATER SMART INDUSTRIAL SYMBIOSIS

ULTIMATE (H2020:IA - EASME - CE-SC5-04-2019)

2020-2024

WP3 - Stakeholder and citizen engagement, multi use play spaces (NTNU)

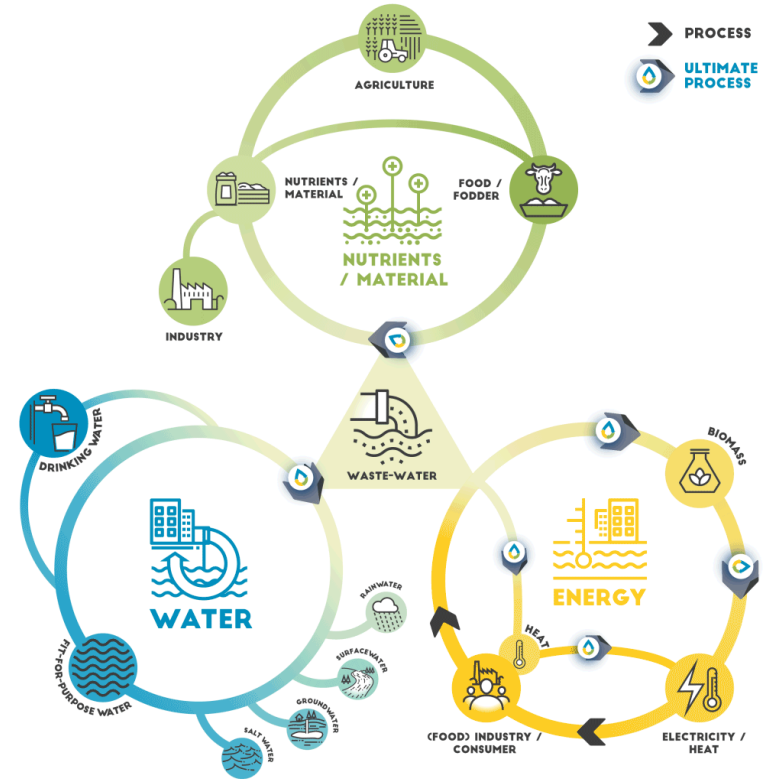
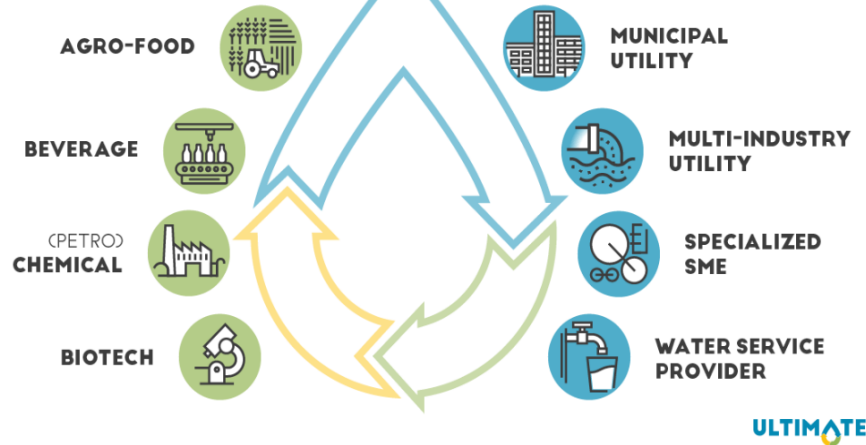
<https://ultimatewater.eu/>

Water Smart Industrial Symbiosis

SYMBIOSIS BETWEEN:

INDUSTRIAL SECTORS

SERVICE PROVIDERS





IMX Process based on Co-Creation



Explores synergies between Art and Technology in the design and build of the IMX



The project leading to this application has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 869318

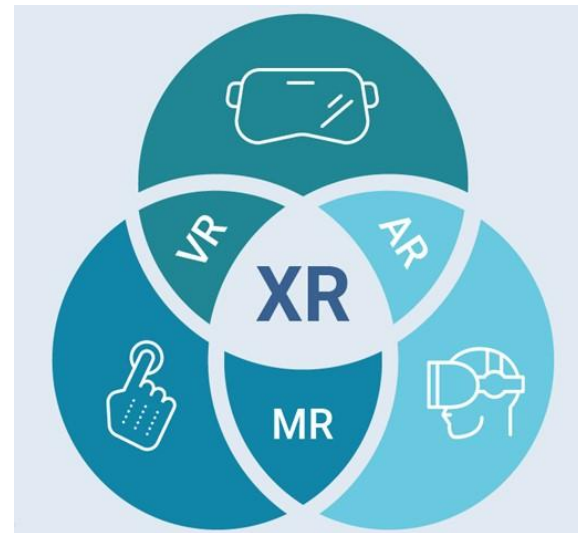
CS2, CS3 and CS9 were chosen for IMX engagement



WP3 involve and engage stakeholders (NTNU)



In ULTIMATE we are combining AR and Digital Storytelling





An aerial photograph of a school campus. A large, multi-story building with a red roof is the central focus. Several red circles are drawn on the image, highlighting specific areas: one on a building to the left, one on the central building's roof, one on a building to the right, and one on a paved area in the foreground. A stick figure is positioned in the lower right, pointing towards the central building. In the bottom left corner, there is a small inset showing four panels of a person's hands interacting with a large screen, likely a digital map or interface.



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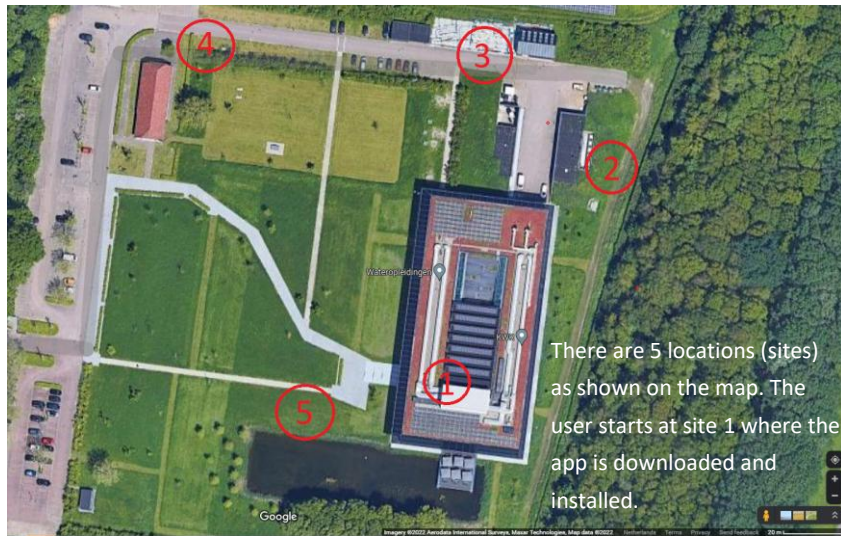
Technical diagram of the projector stand and table assembly. The diagram shows a yellow trapezoidal projector stand on top of a brown rectangular table. The stand has a height of 100 cm and a top width of 168 cm. The table has a height of 75 cm and a top width of 168 cm. The table legs are made of aluminum with a thickness of 4 cm. A small inset image shows the physical prototype of the stand and table.

Fictional Water Smart Industrial AR on a physical interactive floor map

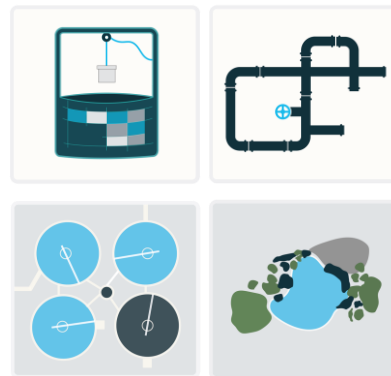


CS2: An AR IMX with a gaming element

The whole experience is located in the premises of KWR institute in Nieuwegein, Netherlands.



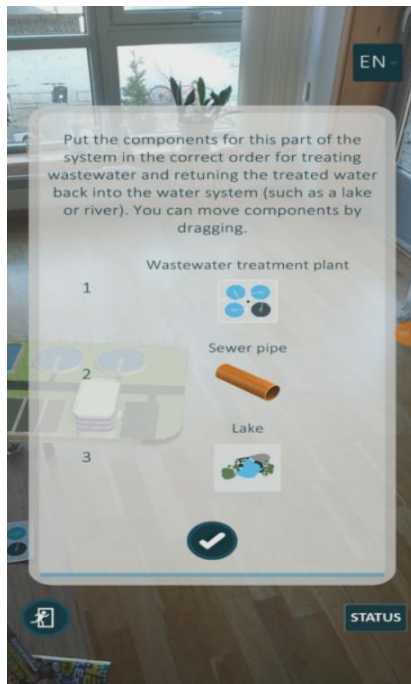
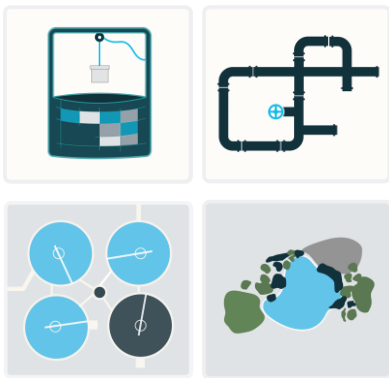
Sites 2-5 include physical stands with the following markers on them:





Playing the game

Scanning the marker
and clicking on the **AR**
object as we see on
the picture.

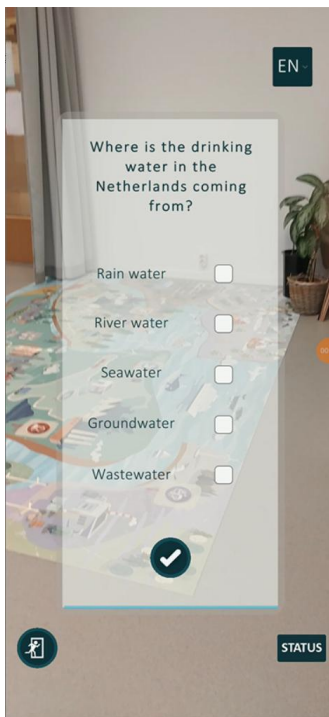


At each site the user
needs to complete
various tasks in order to
move on to the next
site.

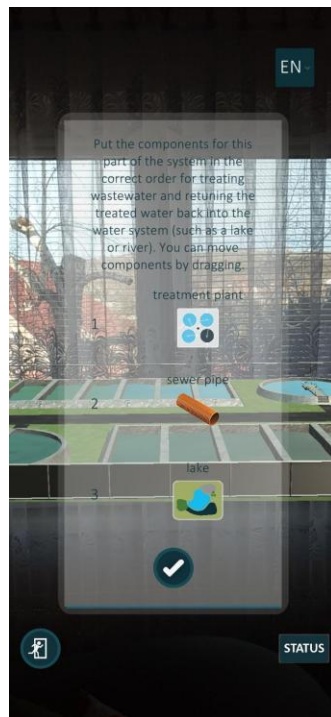




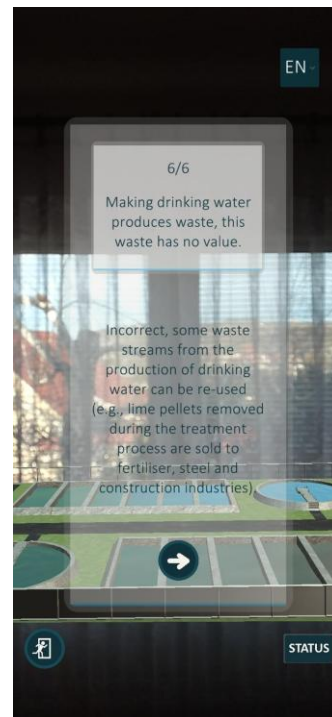
CS2 example tasks



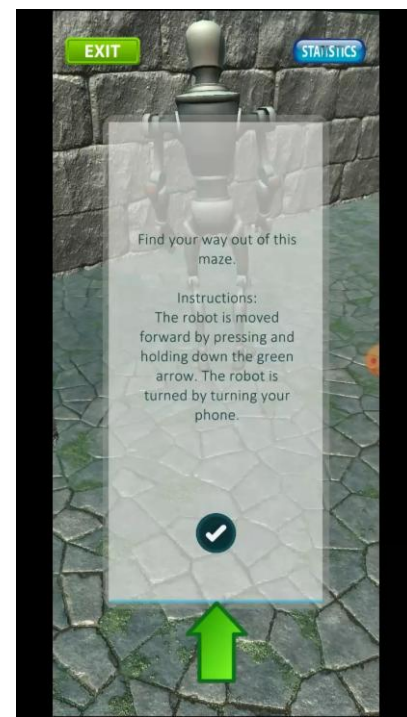
multichoice questions



sorting things related to water



true/false statements



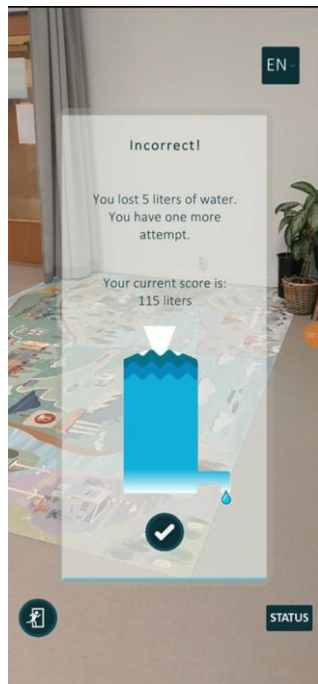
getting out of a maze



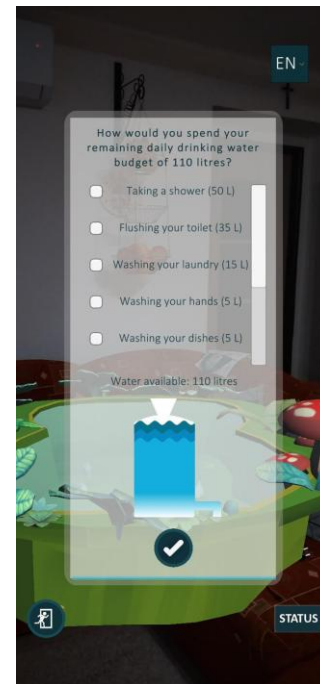


CS2 gaming example

The user starts with 120 liters of water and with each wrong answer, **some amount of water is lost**.



At the end of the game the user can use the rest of the water for different activities such as **taking a shower, flushing the toilet or washing the dishes**.



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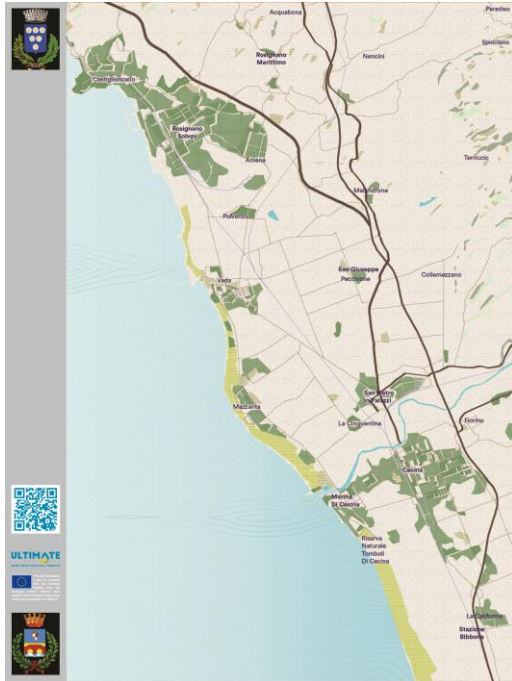
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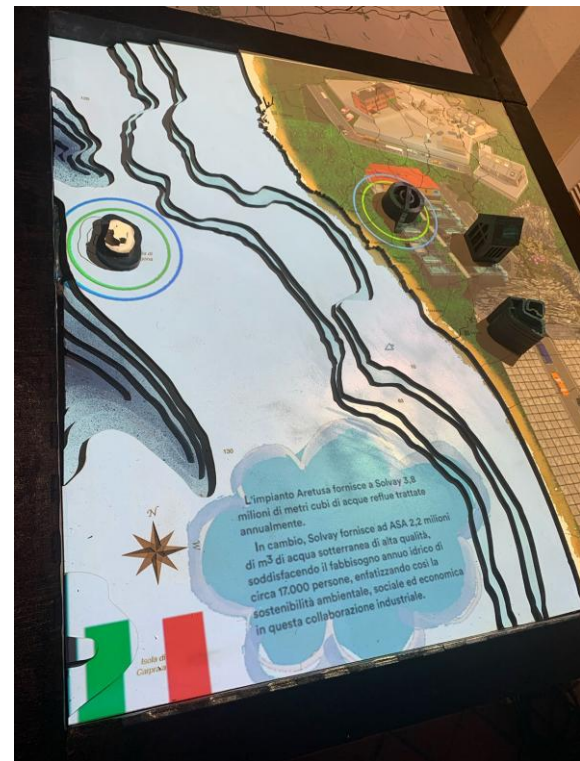


CS3: An interactive tabletop game





An interactive table





CS3 IMX opening 27.01.24





CS9 – An AR IMX with an artefact



The map represents a fictitious town where each marker is an industry or establishment. The user installs the app and through it, the user can learn more about these places in the infographics part of the experience. Here, the markers are scanned and AR objects appear that can be manipulated.

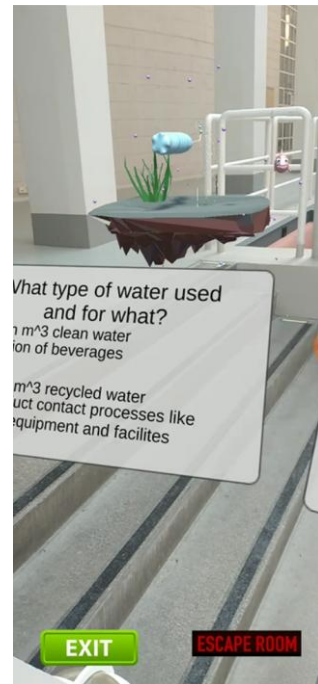
Map is a 3x2m vinyl floor



CS9 Marker based infographics



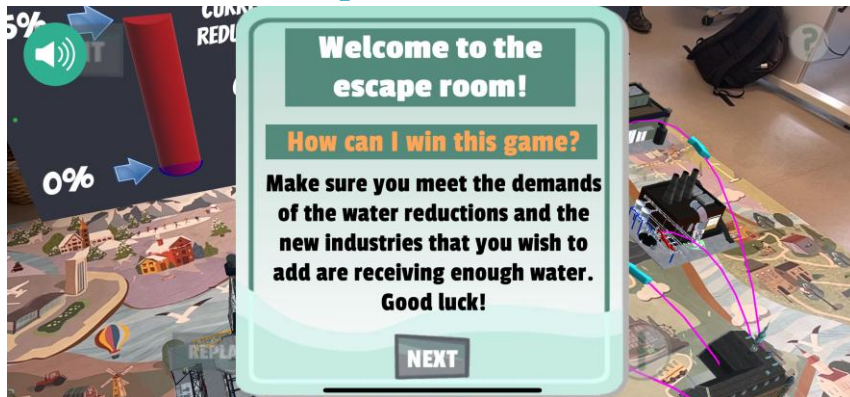
Scan a marker
with your
device



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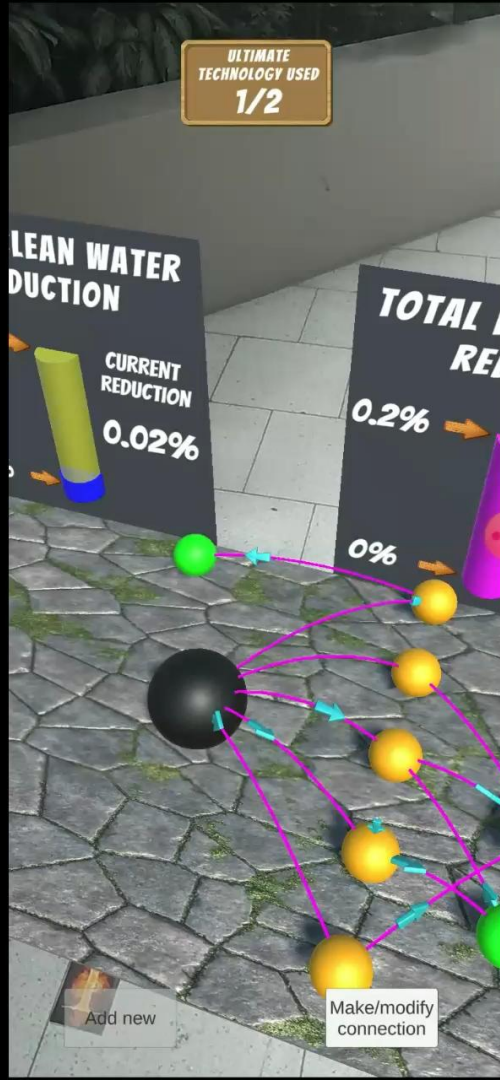


CS9 escape room





Escape room



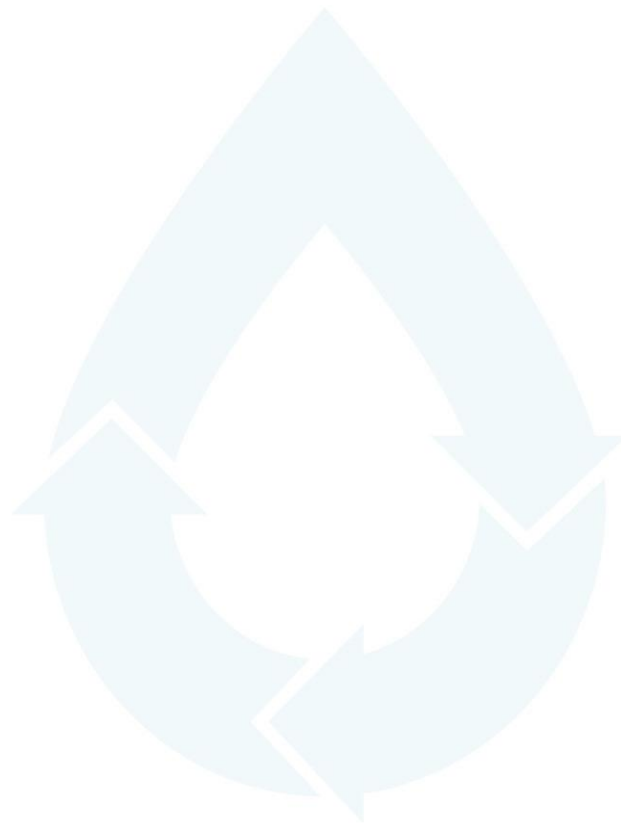


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Contact



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