

IM-prepared

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B-PREPARED ECOSYSTEM

The B-prepared ecosystem consists of four products: a freely accessible massive collaborative knowledge base and data hub (**Disastropedia**), a cooperative multiplayer Virtual Reality (**VR-prepared**) serious game, an interactive gamified mobile app (IM-prepared) and a Learning Management System (**RU-prepared**) to effectively and comparably measure preparedness levels achieved by VR and/or mobile users on a unified scale. **The walk is available in the IM-prepared mobile application.**

GUIDE@HAND project

The roots of the GUIDE@HAND project go back to the domestic, turistic project of CityGuide started in 2005. Based on the experience gained in the project of CityGuide, SZTAKI started a new development project on new up-to-date mobile and web platforms by renewing our preceding methodology and focusing on guided walks¹.

We have released our next generation service, named GUIDE@HAND.

Content development

Co-Creation Group (CCG) - Represent the internal and external stakeholders

IM-prepared - product goal and statistics

The unique features of IM-prepared include, providing disaster preparedness **content to civilians** rather than **professionals**. Traditionally, disaster preparedness training relies on lectures, informational materials, and live drills. The B-prepared project aims to foster social innovation in this field by using digital technologies to make disaster preparedness training more accessible, engaging, and widely available to the general public. Mobile technologies can reach a broad audience at relatively low cost.

The application provides location-sensitive preparedness-related content in gamified digital walks. IM-prepared integrates mobile games, location-based content, and disaster preparedness training materials into a novel application addressing this gap. The gamified mobile application offers multilingual, GPS-based interactive walks in real-world European locations.

It offers custom-tailored gamified walk packages on disaster situations such as forest fire, king tide, landslide and flood. Each walk consists of several physical locations where users receive information about disasters and preparedness, and minigames and AR activities are assigned to some locations. The application is freely available in the largest mobile application stores.

KPIs

3.1	Mobile app downloads	10 000	18 595
3.2	Number of gamified walks	4	5
3.3	Number of user roles in the IM-prepared open beta	2	2
3.4	User satisfaction	85%+	89.5%

IM-prepared components

Disaster preparedness content is provided to the users in the form of downloadable packages called “walks”. The walk content is created based on historical events. Understanding historical disasters fosters citizen foresight, preparedness, and resilience.

Walks may consist of several multimedia components as follows:

IM-prepared components (1/6) - POIs

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IM-prepared components (2/6) – Navigation instructions

Users are guided along the routes of gamified guided walks through voice navigation. Using the device’s GPS system, the application automatically provides all necessary information and tells disaster preparedness related content at the right place and the right time.

As users reach each point of interest (POI), the relevant description is played automatically on their device. Users can listen to the POI description even in the list-based version of the gamified walk. The languages of the narration are English and the local language.

Some of the narrations were recorded with professional narrators, while others were generated by AI.

IM-prepared components (3/6) – Mini games

IM-prepared offers a wide range of mini game types that start at specific POIs of the gamified walks. Walks includes more than 30 mini games of 11 mini game types such as single-choice question, multiple choice question, matching game, ordering game, rebus puzzle, word search, hangman game, crossword, jigsaw puzzle, memory game, sliding puzzle etc. The appearance of the games (logos, colours, buttons, messages) can be customised.

The games can be played against time (counting forwards or backwards). It is possible to score based on the correctness of the solution and the completion time. For some game

types (e.g., single choice and multiple-choice questions), a question pool can be created. During the game, the user sees a given number of the questions at random from this pool.

After successful login, the results of mini-game and AR activities are collected in the central RU-prepared Integration Hub, together with the results achieved in VR-prepared and activities in RU-prepared LMS.

The B-ready Report gives to the users a clear, consolidated view of their disaster preparedness journey across all B-prepared applications.

IM-prepared components (4/6) – AR games

At present, the following four AR games have been developed within our system, and the list is expected to expand with additional games in the future.

Cardiopulmonary Resuscitation (CPR): This game teaches the correct execution of chest compressions while evaluating hand placement, compression force, and maintenance of the appropriate rhythm.

Fire Incidents: Users learn how to respond to different types of fires and apply the PASS method, while practicing the selection and correct use of appropriate firefighting techniques.

Flood: In this game, players must assemble a virtual mobile flood barrier within a time limit at a real-world location, improving their spatial awareness and object manipulation skills in an AR environment.

Forest Fire: This simulation raises awareness of the dangers of wildfires and assesses users' decision-making abilities and emergency situational awareness through a series of questions.

IM-prepared components (5/6) - Ruote

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IM-prepared components (6/6) – Interactive maps

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Walk versions

The walks have multiple versions according to language, role and mode.

Walks can be available in English and/or local language to ensure broader accessibility

Two roles were implemented, namely citizens (for all age groups) and children (for children aged 11-14). We introduced the dedicated children's role, as children are particularly vulnerable during disasters.

The gamefied walks have a guided and a list-based version for on-site and distant mode, respectively.

Walk modes

Altogether 18 disaster preparedness walks were implemented in 12 European countries.

The content packages can be presented to users in two different types:

Guided walks can navigate you along a predefined route supported by an interactive map. This type of walk contains POIs and navigation instructions; therefore, we recommend using it **on site**. Before starting the walk, one should go to the starting point, which is indicated by a flashing blue circle on the map. To use the walk, the location service (GPS) should be turned on the users mobile device. Five walks including the Isar flood have a guided version.

List-based walks help you to explore the POIs by selecting them from a list in any order. They do not contain a route and navigation instructions. We recommend them primarily for remote use, but they can also be used on site. All IM-prepared walks have a list-based version. The list-based type of walk presentation can be applied in **Distant mode**.

“1899 Isar Flood in Munich” walk map

The guided walk named as “Isar flood in Munich of 1899” navigates users along a given route of sights and presents location-dependent information about POIs along the route.

Here you can see the route of the walk on the map on the mobile device and in the walk editor.

“1899 Isar Flood in Munich”

The walk has four versions:

Walk demo

Here you can watch a short video on the walk.

Minigames

Several mini-games are available in the walk such as single-choice question, multiple-choice question, matching game, ordering game, rebus puzzle, word search, hangman game, crossword, jigsaw puzzle, memory game, sliding puzzle, etc.

The games can be accessed from the More menu as well.

You can use the QR code for testing the games.

AR simulation

The walks may include AR activities.

Isar flood walk includes CPR game. This game teaches the correct execution of chest compressions while evaluating hand placement, compression force, and maintenance of the appropriate rhythm.

Evaluation

Most participants reported positive experiences with the application.

Conclusions and future work

Thank you for your attention!