



**UiT ArcLog**

**NARVIK**

# Deliverable 2.3.1

## An immersive and interactive VR virtual planetarium application

**Interreg**



Co-funded by  
the European Union

Northern Periphery and Arctic

**GLOW2.0**



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## Introduction

The Northern Periphery and Arctic funded project **GLOW2.0 – Green Energy Technologies for Tourism Growth** aims to support enterprises and public organisations in developing tourism flow during the dark winter months by enabling the application of immersive technologies at an enterprise level and developing common use applications presenting the night sky.

As part of Work Package 2, *Activity 2.3 - The build, test, revise across the scalable outputs*, GLOW2.0 aimed to create the world's first Virtual Reality (VR) planetarium. The goal of the VR pilot activity was to create an immersive and interactive application. The activities consisted of:

- Creating an Alpha-version build for testing within the project partners and SMEs,
- Verifying and validating the application,
- Creating a Beta-version built to test with a group of the audience.

The activity took place during period 3 – 5 (12.2023 – 05.2025) of the project and was promised for delivery by the end of period 5 (May 2025). Activity 2.3 includes the design and development of immersive technology with:

- Established multiple locations (Ireland, Iceland, Norway and Finland)
- Design interaction and adapt user experience elements to the virtual reality
- Testing and feedback.

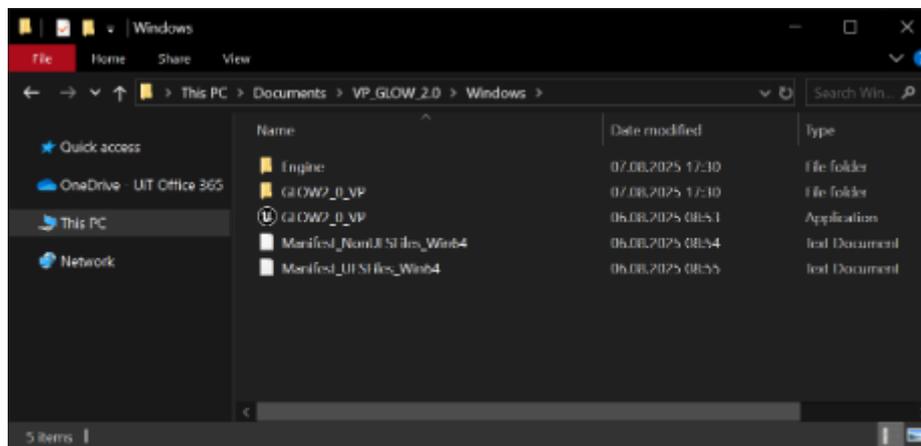
The activity outputs are:

- Deliverable D.2.3.1 – An immersive and interactive VR virtual planetarium application
- Output 2.1 – Virtual Planetarium.

## How to download and install the Virtual Planetarium application

The Virtual Planetarium application can be downloaded here: [VP\\_GLOW\\_2.0](#) (the link expires on 05.09.25).

After the download is complete, please un-zip the file. You can choose the destination path of the folder yourself, but it will be easy to find later if you add it in the “Documents” folder. When the folder is extracted, the name will be the same as the zipped file, and after entering the folder, there will be a new folder named “Windows”. Enter this folder to find the application, and if you look at the screenshot below, the application is the file in the middle:



You could be prompted to allow the application through firewall, please accept this.

Make sure to have Meta Quest Link installed along with SteamVR. You would have to launch Meta Quest Link first. It is not necessary to launch SteamVR, when opening the Virtual Planetarium, it will do this automatically.

Note: In the dashboard in the Meta Quest Link application, there will be a message prompting that Meta Quest Link is not set as the default OpenXR runtime. Do NOT set it as default, the Virtual Planetarium is running with the SteamVR runtime.

Meta Quest Link is not set as the default OpenXR runtime. This might prevent some applications from launching correctly. [Set as default](#)

## How to work in the Virtual Planetarium application

The concept chosen was a full-scale virtual environment with stars, earth, earth's moon and with the possibility to control the day/night-time, clouds, and aurora. The following locations were established and implemented in the Virtual Planetarium:

- Ballycroy in Ireland (54.023625512826825, -9.821070438792622)
- Narvik in Norway (68.43839912909186, 17.427195711951054)
- Koli in Finland (63.094396322339804, 29.808824282527556)
- Hafnir-Rekavatn in Iceland (66.08909898169254, -20.38473778450503)

The experience will begin in an environment where you can look at the stars without any distractions, select the different locations that you want to visit, or visit the roofless "cabin".

When the Virtual Planetarium is started, please choose a location you would like to begin your experience with (Fig. 1).



Figure 1 – Country selection menu

This "wall" is where you can select the different locations by moving in front of them, pointing at the flags and using the selection button on the controllers (Fig. 2).

Note: The wall will not be visible from the backside.

When you are visiting one location, you would have to navigate back to the start before traveling to the next destination. You will find this on the menu “Return to start” activated by the VR headset controller (Fig. 2-3). There is ambient music playing, you can control the volume using the volume button on the headset.

The application menu (Fig. 3) could be accessed by pressing “Y” or “B” buttons on the controllers (Fig. 2). On this menu you can change the time and date, weather, reset the orientation, return to start or quit the application.

Fig. 4 – 5 demonstrate how the location selection and the menu look in the VR headset. Application has the option to adjust parameters of the sky and weather manually (Fig. 6) as well as pre-made weather scenarios like “foggy”, “light rain” etc (Fig. 7 – 8).

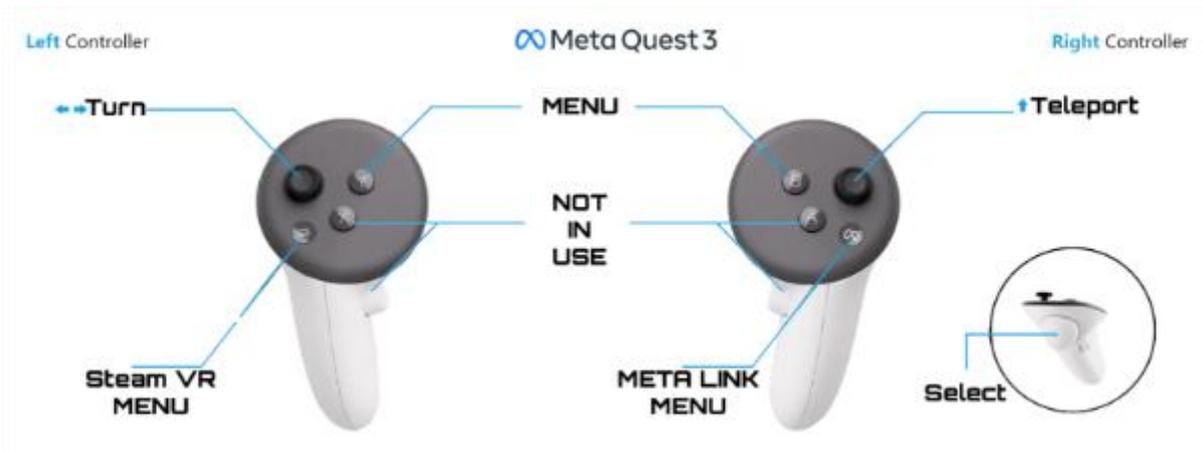


Figure 2 – Controller mapping



Figure 3 – Menu activated on the controller



Figure 4 – Selection of the locations

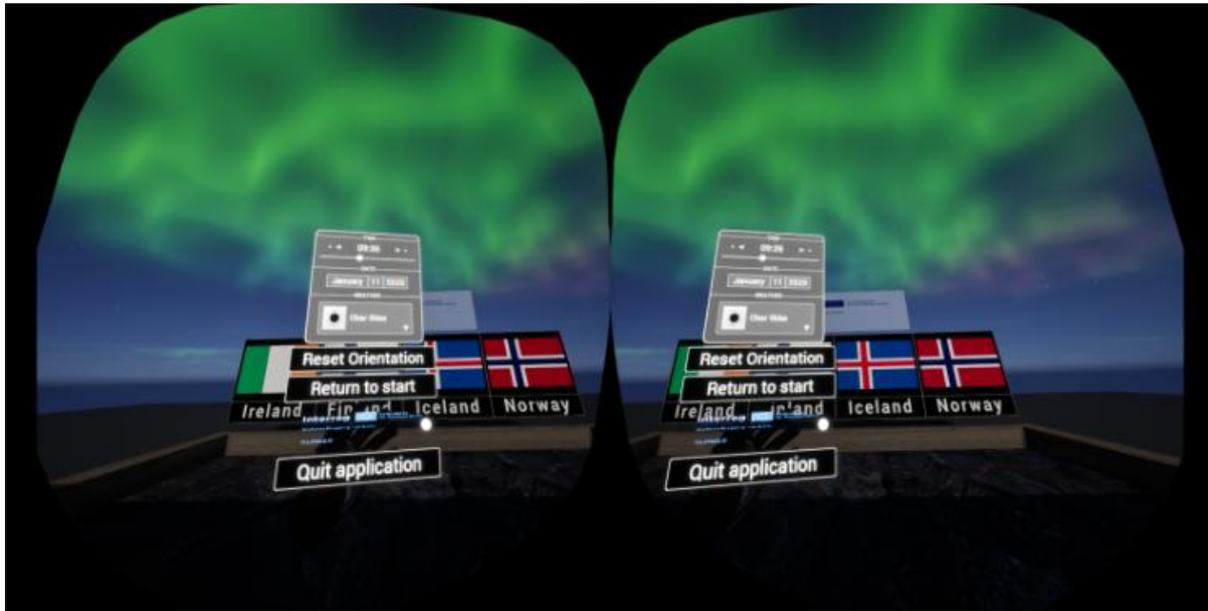


Figure 5 – Menu inside the headset



Figure 6 – Adjust the parameters of the skies and weather

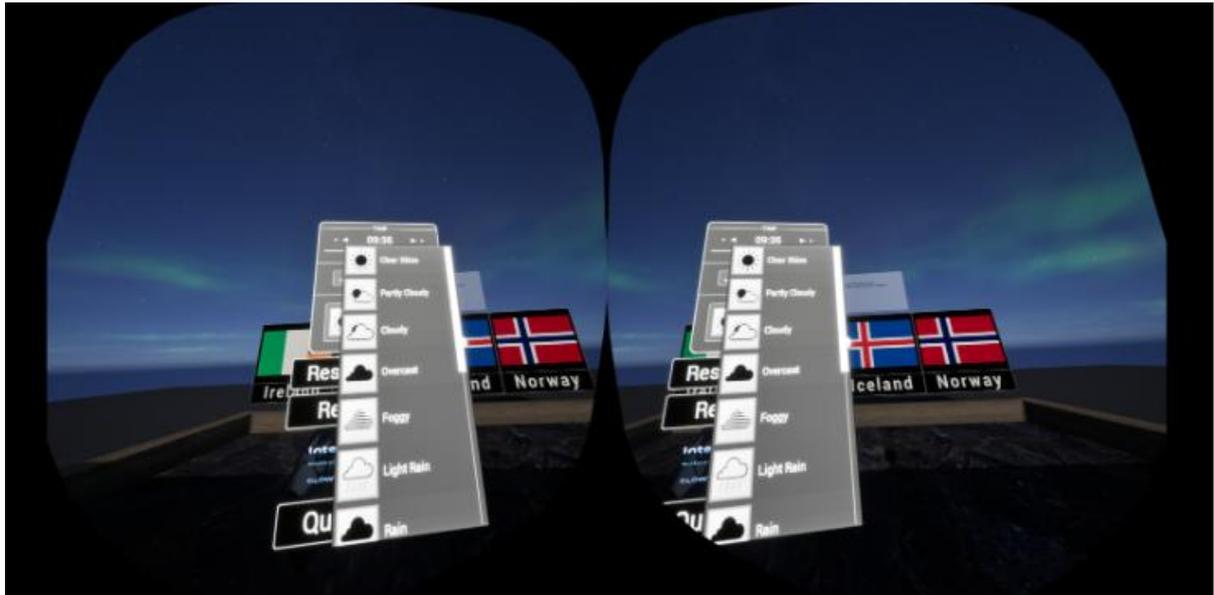


Figure 7 – List of pre-made scenarios

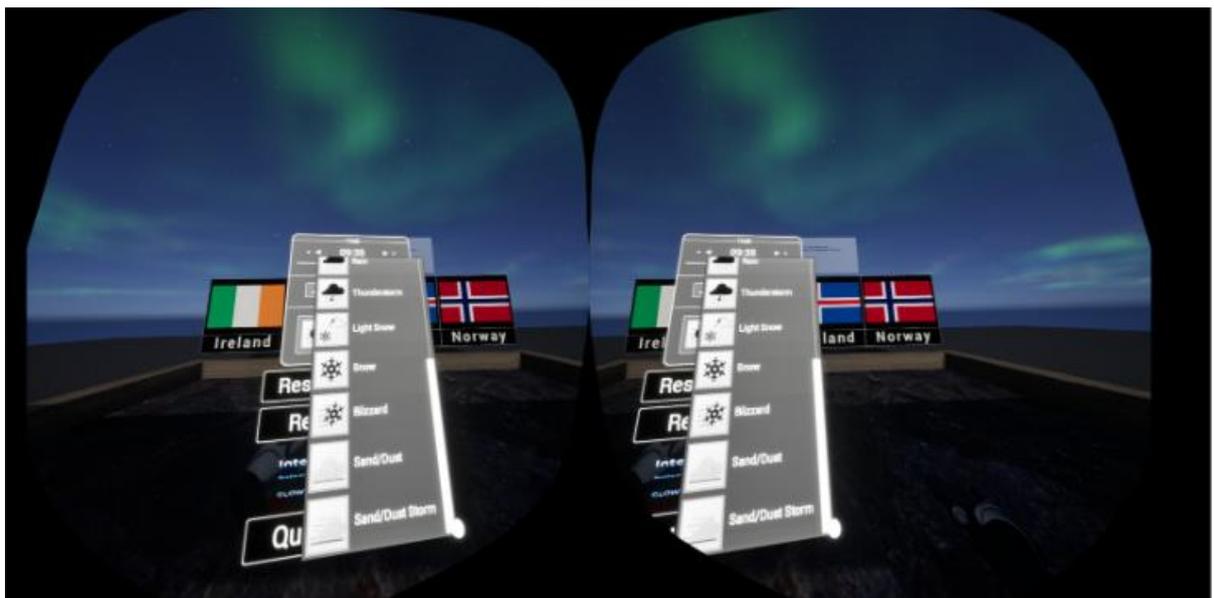


Figure 8 – List of pre-made scenarios part 2

## FURTHER INFORMATION

GLOW2.0 - Green Energy Technologies for Tourism Project has been funded by Interreg Northern Periphery and Arctic Programme.

Link to project website: [NPA GLOW](#)

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