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AR & VR Applications
UXD M WS21
Laura Forster (laf3489@thi.de)
Nadine Kupitza (nak7705@thi.de)

AUGMENTED FLIGHT

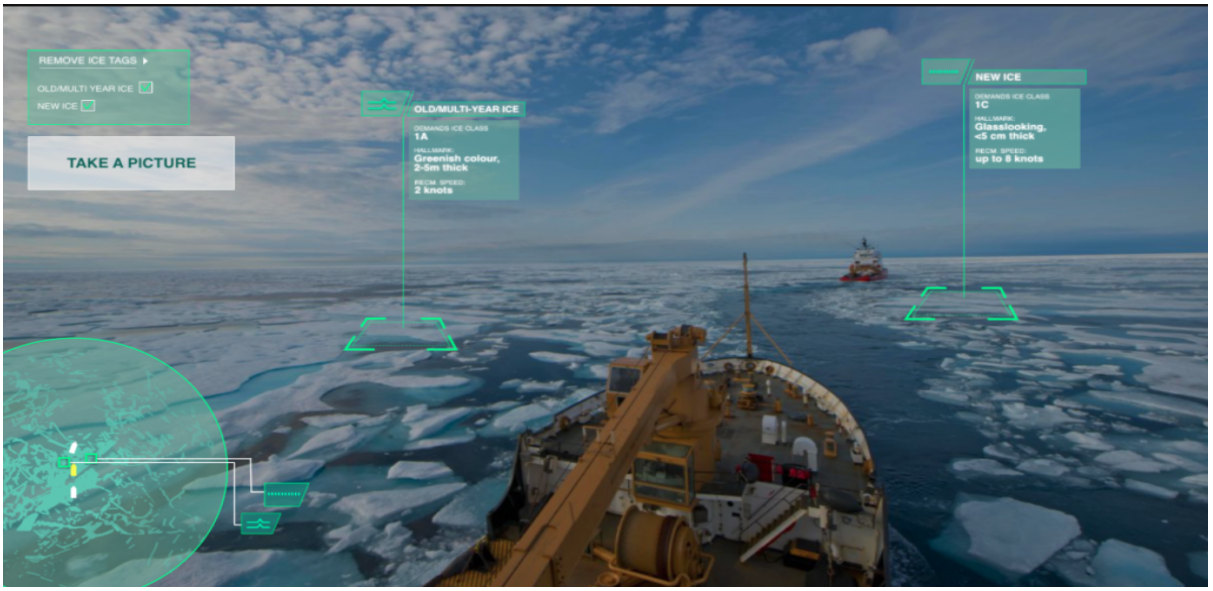
First Project Outline

Ever since flying around the world has been open to the public, passengers always seeked to get one of those popular and rare window seats. Passengers enjoy looking outside the window and guessing where they are currently at. With the introduction of screens in the aircraft, on the back of the seats, it has become easier for passengers to determine where they currently are, which city it is, that they see at the horizon.
Even if the screens already offer more information about the flight and location, the experience still does not vary much from what we had in the past, and moreover, did not significantly develop further. Comparing it to the automotive industry, vehicle brands always try to integrate the newest technology and seek for the best experience for the users. In order to emphasize this, we would like to list the example of head-up displays, that offer the driver an extended reality and provide more information about the vehicle status and surroundings. So why not think about integrating the same technology and a similar use case into the context of aircrafts, to enhance the experience of passengers? With a head-up display, the windshield of the car serves as the final mirror, which casts the digital image onto the road. This content can be both static and augmented. In an airplane, the window would be the alternative to the windshield.

In our project we want to explore the opportunity of projection technology in aircraft windows, to display detailed information about the flight and location. We therefore use Augmented Reality as a prototyping tool, to explore and also test the opportunity to improve the user experience during flights. In the following weeks we will discuss our prototyping opportunities, like creating an app for tablets or using Microsoft Hololens. In reality, the use of projection will have advantages over AR technology implemented with glasses. For instance, the use and interaction will be more natural, when passengers can just look out of the window, instead of putting glasses on. Especially for people who wear glasses (about 64% of the German population) it will be easier and more comfortable to experience the information without any additional devices. Another argument is that providing AR glasses to passengers will certainly be expensive in procurement and cleaning, and

economically, just makes no sense. Nevertheless we might consider AR Glasses for our project, in order to prototype the experience and create a very close result.

In order to exhaust all possibilities and create a natural and mind blowing experience, we will not only try to focus on an aesthetic and informative visualization, but also make it interactive. For this project, we use direct and natural interaction oriented to the everyday experience of the users, which is also intuitive and an easy hand-eye-coordination. For the users, it appears as if they can interact directly with a virtual object. As an example, the user should be able to navigate through the information and decide what he or she wants to see. Talking about information, we consider adding information about countries and cities in general, but also informative facts about certain landmarks and buildings. So far, we have not found any similar project in the context of airplanes. Instead we found a very nice visualization in the context of ships, which we take as an inspiration and reference for our information visualization.



Source: Pinterest (https://www.pinterest.de/pin/536772849347252455/)

For creating the AR content for our "Augmented Flight" project we will use Unity. As already stated before, we will consider either a tablet or a hololens as a hardware device. Depending on the hardware, the interaction input will take place through gestures, controllers or touch.

Talking about a timeline, our next step will be to create some prototypes in Figma of the screens, decide about the hardware and get familiar with Unity. Afterwards we will start implementing our visual screens in Unity and integrate Usability Studies to always put the user at the center of our project.