Table of Contents

Introduction

Presentation

This project, a collaborative effort by six European students, focuses on enhancing child well-being during the pre-visit phase. By blending engineering and creative design, we aim to transform the waiting experience through interactive digital art. As illustrated in Table 1, this multidisciplinary strategy ensures our intervention is inclusive, comforting, and tailored to the emotional needs of young users.

Table 1: caption

Name	Country	Studies
Ronja Kruse	Denmark	Dental Technology
Hanna Kaczmarek	Poland	Industrial Biotechnology
Anouc Daindu Goedhart	Netherlands	Industrial Design Engineering
Daniel Aagaard Pérez	Spain	Informatics Engineering
Julie Bonnet	France	Packaging Engineering
Kemal Yilmaz	Belgium	Electronics - ICT

Motivation

Hospital and waiting rooms can be stressful and uncomfortable for many patients, especially for children or people who need to stay for a longer period of time. Clinical healthcare environments are often designed mainly for medical efficiency rather than emotional comfort.

Research shows that the surrounding environment can influence patient well-being and recovery. Calming visual elements or familiar environments can help reduce stress and improve emotional comfort.

This project is motivated by the idea that technology can be used to create more comforting and supportive healthcare environments without requiring major physical changes. Immersive visual technologies offer new ways to improve patient experiences during the waiting time for a medical appointment or hospitalization.

Problem

Medical environments are often designed for medical efficiency rather than patient comfort, which can make them feel cold and impersonal. This can increase stress and anxiety for patients, especially due to unfamiliar surroundings and medical procedures. Research shows that calming visual environments or natural elements can help reduce stress and support recovery. However, many medical areas still lack accessible solutions to create more comforting and engaging environments for patients.

Objectives

The main objective of this project is to explore how immersive projection technology can improve the

emotional experience of patients (especially children) in medical environments.

The specific objectives of the project are:

- To investigate how medical and hospital environments influence patient stress and recovery
- To explore existing technologies such as projection systems, immersive environments, and digital distraction therapy
- To develop a concept that transforms hospital or waiting rooms into calming and personalized spaces
- To reduce stress and anxiety for patients during hospitalization/waiting time
- To improve the overall patient experience through design and technology

The overall goal of the project is to design a concept that can create a more comforting and supportive hospital environment, particularly for children and long-term patients.

Requirements

Specify here the identified and mandatory requirements the solution has to fulfil

Requirements

The proposed solution must meet the following requirements:

User & Experience Requirements:

- The system must reduce patient stress and anxiety during waiting or treatment periods.
- The system must create a calming and comfortable environment using visual and sensory elements.
- The system must be suitable for children and adaptable to different age groups.
- The system must provide a sense of safety and personal space for the user.

Healthcare Environment Requirements:

- The system must be suitable for use in hospital or waiting room environments.
- The system must not interfere with medical equipment or workflows.
- The system must comply with hygiene standards for shared healthcare environments.
- The system must be easy to clean and maintain.

Functional Requirements:

- The system must provide immersive visual content (e.g. projection or display).
- The system must integrate at least two sensory elements (e.g. visual, audio, scent, or movement).
- The system must be easy to operate by healthcare staff.
- The system must allow quick setup and minimal preparation time.

Accessibility Requirements:

- The system must be accessible for users with reduced mobility (e.g. wheelchair users).
- The system must allow safe entry and exit.

Technical & Design Requirements:

- The system must be safe for use in indoor healthcare environments.
- The system must operate with low noise levels.
- The system must be energy-efficient.
- The system must have a compact footprint suitable for limited spaces.

These requirements are derived from user needs, healthcare constraints, and insights from the state-of-the-art analysis

Tests

Report Structure

Chapter	Description
1 Introduction	...
2 Background and related work	Existing research and studies
3 Project Management	...
4 Marketing Plan	...
5 Eco-efficiency Measures for Sustainability	...
6 Ethical and Deontological Concerns	...
7 Project Development	...
8 Conclusions	...
9 Acknowledgements	Bibliography of sources and articles used