Bridging the distance between medical expertise and the emergency location through assisted reality

/ Graduation Project

Hanzehogeschool Groningen
University of Applied Sciences
digital society hub

Short Problem Statement

How can high quality realtime video (assisted reality) and additional sensors be used to provide emergency care at a distance?

Introduction

In emergency situations, every moment counts. This is especially true in ambulance care, where it is of vital importance for medical professionals to quickly and accurately judge the right course of action. For example, ambulance personnel need to judge whether a patient can be treated at home, whether they need care at a regular hospital, or whether the patient needs specialist care such as a burn victims unit. Accurate decisions are needed to provide the right patient care, but also to reduce inefficient care and to prevent unnecessary ambulance trips.

The 5G network provides a unique opportunity to allow medical professionals to work together at any location. Not only can ambulance personnel send live video and sensor data to the appropriate specialist for a consult, but by connecting to wearables, these specialists may be able to communicate instructions more effectively to the field.

Research question

This project mainly concerns itself with the usability aspect of the question. That is, given that the 5G network functions as it should, how should the opportunities afforded by the 5G network be used and presented to ambulance personnel and medical specialists to contribute to more accurate field diagnoses?

The question has several components:

- Which information (video and/or sensor) should be gathered in the field and transmitted to the medical specialist in order to provide the specialist with the necessary information to make a well-informed decision?
- In what way should the specialist be able to communicate with ambulance personnel?
- To what extent can wearables such as AR glasses, possibly in combination with other devices, help to create a more interactive diagnostic process between ambulance personnel and medical specialist?
- How should this functionality be designed so as to support complex decision-making with respect to treatment and referral.

Themes: Augmented reality / sensor technology / 5G / emergency medical care	**Primary Client:** Ambulancezorg Groningen: https://www.ambulancezorggroningen.nl/
Project requirements: affinity with AR/VR and/or sensory technology	**Contact AZG:** Bram Oosting
5G context. This project is part of the 5G innovation lab at EnTranCe. 5G technology provides the reliability, bandwidth, latency, and priority needed to make practical application of this project a success.	**More info?** Contact Chris Dijksterhuis. c.dijksterhuis@pl.hanze.nl
This project is in collaboration with HealthHub Roden	