Utogla _ Near Future: How smart glasses shaping the future

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Content

Introduction to the work

1 Introduction

Utogla' is a hybrid of the words 'utopia' and 'glasses'. This product is based on HUAWEI's EyeWear (HUAWEI, 2022) and takes into account the needs of near-future users for smart glasses (M Claudia, t. D., Jung, T., & Han, D., 2016) (both functional and non-functional needs) and integrates functionality by setting different scenarios to provide near-future users with provide an achievable, multi-interaction-model, multi-situational interactive smart utopian world.

The main functions realised by 'Utogla' are scenario modes based on the interconnection of multiple devices targeted to many different situations. In these modes, 'Utogla' users are free to use the functions appropriate to the current scenario and interact freely with others using features such as interface sharing, music sharing and drop-in. 'Utogla' can be detached from the smartphone to enable call, SMS, time, weather, navigation, camera, settings, search, real-time translation (simultaneous interpretation), health monitoring, mode selection and other functions through AI intelligent voice and gesture control.

2 User value analysis

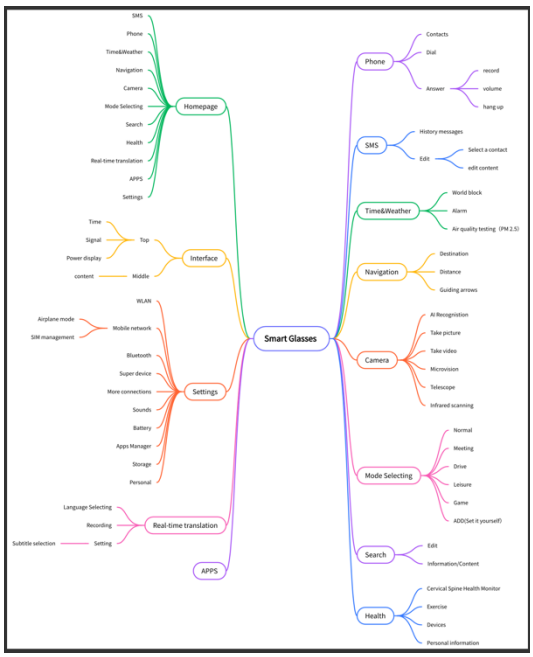
a. Analysis of user needs

An analysis of near-future user needs for the use of smart glasses (M Claudia, t. D., Jung, T., & Han, D. , 2016), taking into account achievable factors (Syberfeldt, A., Danielsson, O., & Gustavsson, P. , 2017), was conducted according to Use and Non- use the list of

functions was collated as follows.

b. List of functional requirements
- Daily communication: calls, SMS
- Bluetooth and internet connectivity
- Time and weather
- Health monitoring
- GPS navigation
- Alarm clock and memo
- Entertainment: music, movies, games, electronic pets and more
- Real-time translation, simultaneous interpreting
- Photo and video taking
- Device file interjection
- Microvision and telescope functions
- Audio recording, voice transcription
- AI recognition based on Mixed Reality technology
- Multi-device interconnection
- Screen casting and audio sharing

c. List of non-functional requirements
- Volume adjustment
- Brightness adjustment
- Gesture control
- Intelligent AI voice control
- Battery life



3 Information architecture

a. General architecture (illustration)
Based on user requirements, the functions are integrated and refined, and the general information architecture is proposed as follows.

b. Multi-device interconnection
"Utogla" can be used as a stand-alone optical glasses or sunglasses, and on this basis, when used alone, it replaces the current smartphone as an all-round intelligent assistant butler. The locator serves as an object finder, the microphone combined with gesture controls helps the user to interact, the surround sound provides the ultimate sound experience, the sensors provide health monitoring and the professional AR lenses help to start a smart life with navigation, translation, AI photography and more. It can be even more useful when used with multiple devices in different life scenarios.

Suggested scenarios.

- Glasses only: Normal Mode, Drive Mode, Exercise Mode, Focus Mode
- Glasses + Glasses: Normal Mode, Leisure Mode, Meeting Mode, Game Mode
- Glasses + screen: Leisure Mode, Meeting Mode, Game Mode
- Glasses + wearable device (watch/bracelet): Exercise Mode, Leisure Mode, Game Mode

4 HCI application scenario settings

a. Normal Mode

In Normal Mode, Utogla is able to meet a variety of tedious daily life requirements such as shopping, health monitoring, reading, office work, navigation, photography, communication, etc. through the mixed reality AR lenses.

b. Special scenes

Night scenes: Night scenes take into account the tolerance of the human eye and reduce the projection brightness.

Elderly care: more concise interface, large fonts, while the device is connected to emergency contacts in real time

Childcare: more concise interface, real-time connection between the device and the guardian's device

c. Dedicated scenarios

Meeting mode: helps users to book and notify meetings, record minutes, incorporates face recognition to remind attendees of their names and identities etc., interconnects with the screen and other glasses (headphones) to share meetings and meeting cloud space in real time. Message alerts are muted.

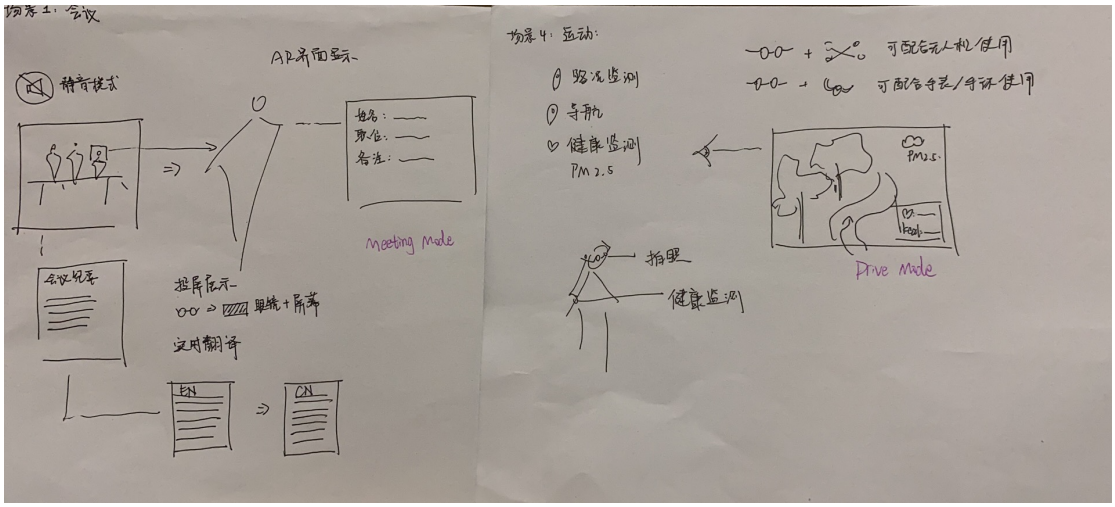
Driving mode: concentrates on navigation mode, safety reminders, mileage and time reminders and other functions.

Leisure mode: a collection of music, audio and video functions, recommended for use with other screens.

Game mode: can be interconnected with other Utogla for multiplayer games or with joysticks, screens, etc. for physical games.

Exercise mode: Interconnects with watches, bracelets etc. and helps monitor the day's weather and road conditions.

Focus mode: simple interface, only the necessary functions such as time and countdown are retained, and message alerts are muted.



5 Operation Flow & Interaction Form

a. Gesture control

Control Utogla's non-functional needs by double-tap and swipe gestures

b. AI Voice Control

Connect to the intelligent AI voice assistant via the built-in headset and microphone to free up your hands

Implementation

Prototype link：

https://www.figma.com/file/BwtNG5Rem3KyZvEU63sFYl/Untitled?node-id=0%3A1

PPT link：

SMART Glass.pptx

Video presentation：

Smart Glasses_Utogla.mp4

Reference

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M Claudia, t. D., Jung, T., & Han, D. (2016). Mapping requirements for the wearable smart glasses augmented reality museum application. Journal of Hospitality and Tourism Technology, 7(3), 230-253. doi:https://doi.org/10.1108/JHTT-09-2015-0036

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