

Requirements Documentation – Free choice group

HomeDork – Interactive Smart House

Revision History

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Date	Version	Description	Author
10/9/2021	1.0	Initial addition to documents	A, B, C, D
23/9/2021	1.1	Changes to the priority	A, B, C, D
14/10/2021	1.2.0	Additions of R3, R4, R7 and edits in remanding requirements based on input from Furuboda.	A, B, C, D
23/10/2021	1.2.1	Spelling checks and discussions	A, B, C, D, E
27/10/2021	1.3.0	Grammar revised	E
14/11/2021	1.3.1	Changes in document formatting such as versioning, tables, and titles according to group standards.	A

Requirements List

Requirement Description	Priority	Completion (%)
R1. Haptic vibration	Essential	90
R2. Voice commands	Essential	50
R3. High contrast	Essential	90
R4. Personalized status commands	Essential	10
R5. Scheduled commands	Essential	5
R6. Magnifying zoom	Desirable	40
R7. Bliss expressions	Desirable	0
R8. Game	Desirable	100
R9. Disco mode	Optional	0
R10. Hand gesture commands	Optional	0

Requirements Descriptions

R1 - Haptic vibration

The system should be responsive in the way that it for example vibrates when an option is clicked or reads the chosen command out loud. The system could also be responsive in the way that when the light turns on, the system gives a spoken voice confirmation. This is essential for those who are visually impaired or need the feedback for confirmation due to neurological constraints. This requirement is closely connected to [S5 – Interactive feedback]. The users should be able to toggle this feature, to make it adaptable to any users' needs [S2 - Adaptability].

R2 - Voice commands

Users can enter text into the application instead of using the standard keyboard. Users can also select text on the screen and have it spoken to them. From experience with the students at Furuboda, the voice to text is essential to many students with poor vision. The users should be able to toggle this feature, to make it adaptable to any users' needs [S2 - Adaptability].

R3 - High contrast

For users with visual impairments, black text on white background is very difficult to see, therefore an option for high contrast colors will allow them to read the screen. The users should be able to toggle this feature, to make it adaptable to any users' needs [S2 - Adaptability].

R4 – Personalized status commands

A user can define what should happen in the smart house when he or she presses the adaptive button. If a user sets a button for “stressed” and wishes that when the user is stressed clicking the button will dim the light, close the curtains, and turn on the fan, the system will respond to the adaptation. This feature targets all users, but users who have any type of neurological disability can benefit highly from pre-set personalized combined commands. The reason behind this requirement is more deeply discussed in [S1 - Usability, easy to use] and [S2 – Adaptability].

R5 - Scheduled commands

Users should be able to schedule devices or other activities throughout the day e.g. the lights are turned on in the morning and off in the evening; or daily meetings are read for you every morning. From the students at Furuboda, we noticed many of them rely heavily on daily routines and using their calendars and reminders. However, they often forget to look at them or set the reminder, so a personalized scheduled command that either pops up on the screen or reads it out loud would benefit them hugely. Many of the students also used a timer for their everyday tasks, referencing to “Real life connection in [S5 - Interactive feedback]. The timer could also be implemented into this feature for example one user has 10 minutes to get up in the morning.

R6 - Magnifying zoom

Users that have vision impairments can use this feature to independently use the system.

R7 - Bliss expressions

Bliss is a logical symbolic language, used internationally for people with either neurological disorders or speech difficulties. It combines simple symbols to form words and expressions. This feature would translate text in the client apps to Bliss. This feature is like common language settings in any native app or web site. This is a feature located in the settings, to make it adaptable to any users' needs [S2 - Adaptability]. The user can decide to have the texts in the system translated to Bliss or not. A good place to translate text to Bliss is the personalized buttons discussed in [R5].

R8 - Game

This feature is a fun game that does not require fine motor skills or fast reactions, but a fun game for anyone to play.

R9 - Disco mode

The system can with a simple click turn the whole house into a party.

R10 - Hand gesture commands

With the use of a camera, the user can make specific commands using physical movements to steer the system. For example, to dim the light by lowering you palm. For anyone with poor motor skills or visual disability this could be an important feature.