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Version history

Version	Date	Person	Note
V0.1	04-02-18	Jesse	

1. Preface

This document is about the research of the possibility to get a new screen on Willy. The reason for a new screen is that the current screen is a screen that uses 130 Watt. The last project group noticed that the batterie level drained fast when using the screen.

2. Current screen

The current screen is a Smit Visual Touch LCD panel with the following specifications:

Brand	**Smit Visual**
Type	Focus Touch LCD monitor 42”
Touch	Yes
Response time	6,5 milliseconds
Brightness	500 cd/m2
Resolution	1920 * 1080 pixels
DVI	1
Power usage	130W
Backlight	LCD

Brand	**Smit Visual**
Length / Width / Height	104,5/63,5/14 (cm)

A problem with this screen is that it runs on 230V. It needs a converter to supply the necessary voltage. The converter has an efficiency of roughly 60%. The actual power which is used to use the screen is 130W * 1.4 = 182W.

3. New screen

A new screen has to be more efficient than the current screen. Because of that it's wise to look at a LED screen which uses an adapter. With this we exclude the 230V converter and the power usage of the screen decreases dramatically.

When Willy uses a LED screen of 42 inch without the converter, it uses roughly 60 watt. This means we use 32% of the current used energy.

Willy needs a way to interact with people and for that the current screen uses touch. There will be a research about other ways to interact with people. Because of this the next screen doesn't have to be a touchscreen. This makes the screen more affordable.

One of the possibilities is the LG-43LJ5150. This is a 43 inch screen with the following specifications:

Brand	**LG**
Type	43LJ5150
Touch	No
Resolution	1920 * 1080 pixels
Connection	HDMI 2x, USB
Power usage	42W
Backlight	Direct-LED
Length / Width / Height	110,8/65,7/6,95 (cm)

This tv needs the converter. The total power consumption will be 42W*1.4 =58,8W.

4. Advice

The advice is to look for a second hand 42 inch tv screen without touch. These are affordable and use a lot less energy than the current screen. It would be handy to use a tv which uses a power adapter so Willy don't has to use the external converter. Even if there is a new screen, like the one stated in chapter three, the power consumption decreases by more than 60%.

5. References

- LG. (n.d.). *Televisies*. Retrieved from lg.com: http://www.lg.com/nl/televisies/lg-43LJ5150salland.eu. (n.d.).
- *smit-visual-focus-touch-lcd-monitor*. Retrieved from Salland.eu: https://www.salland.eu/product/710817/smit-visual-focus-touch-lcd-monitor-42i-42-inch-106-6-cm-full-hd-14029-210.html