activate
An Ambient System for Communication, Information and Control in Intensive Care

NEWSLETTER first half of 2019

Dear interested in the ACTIVATE project,

the second half of 2018 was marked by decisions in the ACTIVATE project. The focus was always on the question: “What properties do the components need to provide optimum support for the ventilated intensive care patient? Above all, safety and hospital hygiene regulations had to be observed and adhered to. Using three ACTIVATE components as examples, we would like to show you the complexity of the considerations and regulations.

Monitor and mount
For future users to be able to work well with the ACTIVATE system, a good display of symbols, texts, films or images on a monitor is required. A decisive criterion here is the screen size. It quickly became clear that a larger diagonal screen was required for the focused target group. This requires a higher weight and therefore a stable mounting. Several monitors and mounting systems have been tested. In addition, the monitors must comply with hygiene guidelines, i.e. germ whirling must be avoided and they must be wipeable with a disinfectant solution.

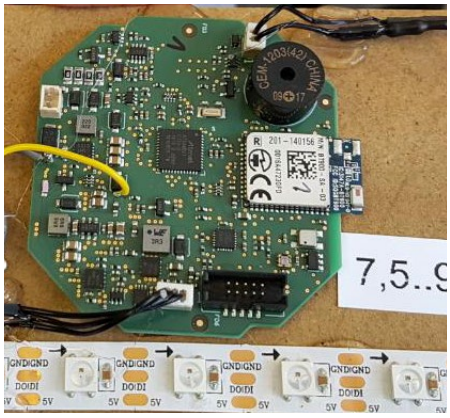
Multifunctional wristband or mobile device (smartphone)
In order for nursing staff to be informed about the activities of patients who have an ACTIVATE system, it is necessary for this information to be transmitted to the nurse responsible for the patient. Activities can be received via smartphone. However, as this is mainly in the pocket of the nurses‘ uniform, the information can only be viewed outside of nursing activities. Furthermore, due to the wide cut of the working clothes; there is a risk that the incoming messages, indicated as a vibration, are not sensed. A quickly visible and easily perceptible alternative would be a multifunctional wristband (Smart Band), which is always in the field of vision. Due to hygiene and occupational safety regulations, the use of a Smart Band on the wrist is not possible. Variants that can be attached to the upper arm are therefore being investigated. All variants must be robust and disinfectable in order to be suitable for everyday care.

Further questions are: “How do the data get to the mobile device?”, “What data should be recorded?” and “How can data be entered by the nurse? “ – These and many other questions must be answered during software development. Among other things, an app was developed for the mobile device, which is currently being tested.

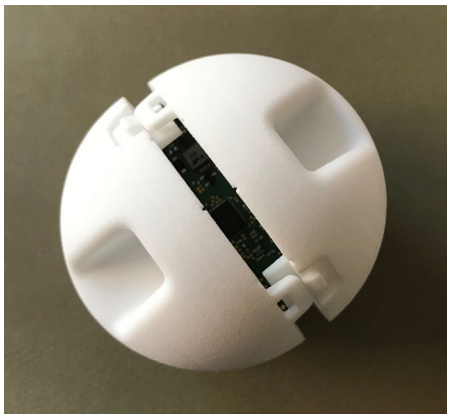
BIRDY

BIRDY is a completely new development of a control and input device for use in an intensive care bed. The device should have a variety of features that are easy to describe in theory, but pose some challenges in practice. The external properties have been defined: The diameter is about 90 mm, the weight will reach about 100 g and the surface will be easy to press in on one hand. Of course, BIRDY must also be robustly designed to be cleaned properly and to survive a fall from bed undamaged. On the one hand, a cover was discussed that can be exchanged again and again as a disposable product, and on the other hand, a cover that is compatible with the usual cleaning agents. In practice, however, implementation is a challenge that still needs to be solved and which is being worked on at full speed.

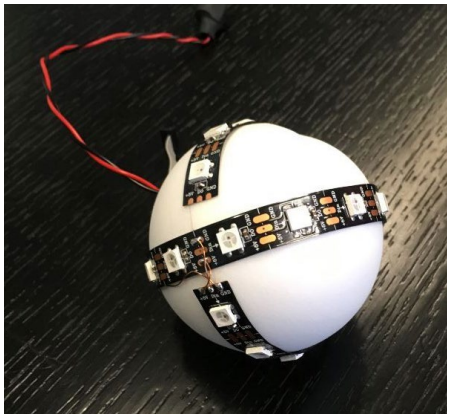
Without a software working in the background BIRDY would have no function. A special challenge in software development lies in the orientation in space. “What is left and what is right?” For example, if the patient puts his arm on his stomach and then wants to select something on the screen, the movement is different than if the arm lies next to the patient in bed. There is no clear positioning in the room.



Picture 1: BIRDY in development on a circuit board



Picture 2: BIRDY as a ball



Picture 3: BIRDY in development as a ball without outer shell

What happens next?
As already mentioned in the first newsletter, the focus in the first half of 2019 will continue to be on hardware and software development.
Training concepts for the clinical study are also being worked on. All employees who are to work with the ACTIVATE system in the future will require device instruction and training. In addition, we want to determine whether ACTIVATE has an impact on intensive care patients and if so, what impact it has. A questionnaire is currently being developed for this purpose.
The presentation of the ACTIVATE project at specialist events and congresses will be continued in 2019.

We would be very pleased if you continue to show interest in our project.

With many greetings
Team ACTIVATE

Informations
Further information can be found on the Internet at www.projekt-activate.de.
We are looking forward to keeping you in the loop about the latest developments.

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