

# Cerberus Security Laboratories

## Designing and building secure IoT Products

### Challenge

Detainees are woken up every hour to ensure that they are healthy and ultimately still alive. In addition, often detainees are found with alcohol or drugs in their system, which can have critical health consequences and resulting repercussions, from both a legal and mental health perspective. With new Medical Device Regulations being introduced in 2020; companies must demonstrate that device and connectivity security have been taken seriously, in order to attain a medical licence.

### Solution

CSL's product is a tech solution, so fits or seizures can be detected immediately, and take away the risks involved. CSL's sensors have the potential to eliminate the outdated procedures in prison's and detainment centres. Aside from the tracking health and wellbeing benefits, the project could have additional advantages such as aiding the Met's recruitment. Currently potential employees could be deterred about being held responsible for a detainee's health, and worse, they could also be sued for the death of a detainee. CSL's innovative monitoring system could be the answer.

### HTH Contribution

Cerberus wanted to develop a sensor that will undertake biometric measurements when placed close to the skin. The Health Tech Hub supported CSL by aiding them in the design and encapsulation of the sensor, using 3D printing techniques, in their fully equipped 3D Printing lab, which is overseen by Paul Worgan. Paul assisted CSL at each stage of the design process, beginning with project scoping, review, product drafting and iteration of the CAD drawing and the eventual iteration of the CAD design and 3D print. This further development of the sensor has meant that The Health monitoring system measures heart rates, bloody oxygen levels and movement of detainee and is currently being piloted at the bequest of the Met.

*"We've experienced great interactions with UWE; the academics, the legal clinic and the Health Tech Hub. A key benefit of being based in neighbouring Future Space has been discovering other companies who have benefited from the HTH's tailored support, and being part of the HTH's affiliated organisations and networks. The support we received from the Health Tech Hub meant we were able to develop our product to the highest industry standards, which enabled us to develop far more quickly and confidently than if we'd had to pursue such services independently, and without the specialist technical skills and academic knowledge"*

Carl Shaw,

Director of Cerberus Security Laboratories

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