DocTec - How space technology helped rebuild the Austrian parliament

A start-up from Bad Vöslau developed a system to protect historically valuable buildings and also protect workers from dangerous gases such as CO, NOx or SO2

When they were commissioned in 2018 to set up a measurement network for construction monitoring on Austria's most prominent construction site, namely the parliamentary

reconstruction, there was enthusiasm but also surprise at the Bad Vöslau-based start-up DocTec. Although the founding team had many years of experience in the development of large measurement networks, it was always in the safe environment of the Austrian Institute of Technology. The order for the parliament building was a milestone for the company.
But back to the beginning.

Bullet Proof Documentation Technologies

DocTec was born from the approach of transferring excellent technology from large environmental measurement networks to construction sites in order to improve safety. Instead of using astronomically expensive analysers to collect air pollutants and climate data, small but nevertheless high-quality sensors were to be used, whose data would be treated with the same care as in large measurement networks. This makes the approach fundamentally different from the IoT field, where it often stops with the collection of measured values and transmission to a cloud. DocTec wanted to use the innovations from IoT, but at the same time enable maximum reliability of the measured values.
Thus was born DocTec: Bullet Proof Documentation Technologies.

Strict specifications for historic

buildings

On the one hand, this system should protect historically valuable buildings, and on the other hand, workers should be protected from hazardous gases such as CO, NOx or SO2. The need for these services is clearly given: Due to the Construction Worker Protection Ordinance, the Limit Value

The construction supervision of the Parliament was a milestone for DocTec

Ordinance of the Labour Inspectorate, as well as strict specifications of the Federal Office for the Protection of Monuments for historically valuable buildings, corresponding measurements are already required in the tenders. On the one hand, it is a question of immediate warnings in the event of limit value violations, for example in the event of CO being exceeded, on the other hand, workplace safety is to be systematically increased through meaningful analyses and buildings are to be protected from costly moisture damage such as mould or cracking in the wood. The utmost care is required here, after all, human lives, historical treasures, and the avoidance of legal disputes are at stake. That is why DocTec was founded: Bullet Proof Documentation.

Support from ESA BIC Austria

In order to meet this demand, the best algorithms and tools for detecting problems were to be used in the measurement network. Here, the insights of ESA were indispensable for DocTec. The management of measurement and telemetry data from a space station orbiting 400km above the Earth or probes that have already left our solar system and are still communicating with the Earth simply has to run perfectly. The start-up was supported by the Science Park Graz as well as the accent incubator and the ESA BIC Austria, so that DocTec was given the opportunity to use the corresponding tools, DrMust and Novelty Detection. In fact, the founders even got the source code for this software, so that DocTec, inspired by the concepts of the ESA software, was able to develop its own anomaly detection, which fits exactly to its own measurement network. This resulted in the DocBots, which continuously scan the system for anomalies.

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