UNEXMIN explores the most relevant mine workings at Deep Ecton; Technology development continues with data processing and analysis

The UNEXMIN project is developing a technology capable of autonomous exploration and mapping of flooded underground mines. The robotic platform uses non-contact methods to gather geological, mineralogical and spatial data without major costs or risks associated. The field trials, set up at four different flooded underground mines in Europe, help the team to access the platform's development and to make improvements to the unique technology.
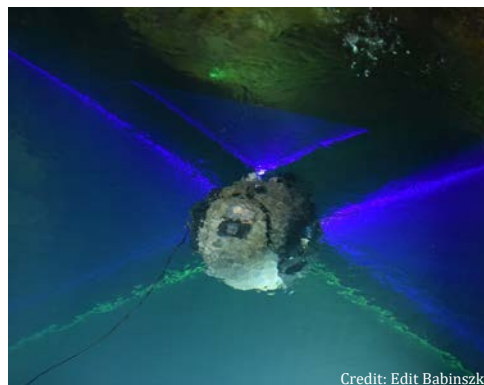
From the 13th to the 31st of May 2019 the UNEXMIN consortium was in the UK to continue its pilot trials itenerary. Ecton mine received the UNEXMIN team and the UX-1 robots in a trial that marked the fourth time in the field. At Ecton the objective was to dive into the most important flooded mine workings - shafts and galleries - and explore and map them. Geological and archeological identification was also a main aim of the efforts.

During the three-week period, UNEXMIN managed to test the technology in a representative, challenging site. The inspection activities with the UX-1 robots led to the exploration of three of the main flooded shafts in Ecton – the Great shaft, the Winding shaft and the Pipe – with relevant mapping results. Other outcomes of relevance are as follows:
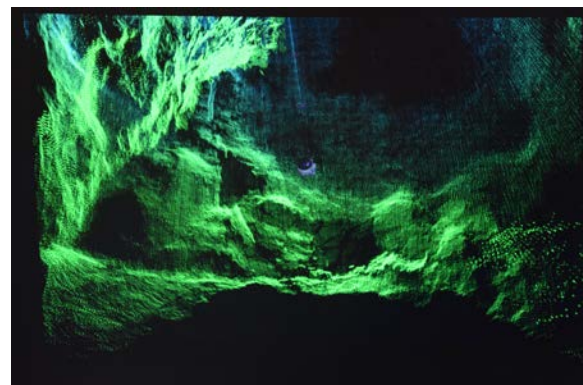
- Deepest dive to 125m in the Great shaft (26/05/2019)
- Geological features and mineralogy identified through visual clues
- Archeological discoveries of importance, including huge workings not seen since the 1850s and linking passages not marked on old plans

Credit: Edit Babinszki

With the trial now over, the team will proceed with post-processing the retrieved data. From these, models will be constructed to facilitate viewing the mine workings and identified geological and archeological structures, that nobody has seen for more than 160 years.

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