PRESS RELEASE

Toulouse, France, October 28, 2022

International launch of the first virtual twin of a chemistry lab at EDUCAUSE, the annual conference for higher education in the United States

MIMBUS officially announces the release of the first virtual twin of a chemistry laboratory: MIMBUS Chemistry. MIMBUS Chemistry. This launch takes place during the EDUCAUSE conference, which each year reveals the major trends for higher education.

Maité Sylla, Professor at the Cnam, Thierry Koscielniak, National Digital Director at the Cnam, Christian Cousquer, XR Project Manager at the Cnam and Jeff Chen, Head of Higher Education Solutions at HP at the EDUCAUSE 2022 conference in Denver, USA

EDUCAUSE is a nonprofit association whose mission is to develop higher education using information technology. Each year, EDUCAUSE organizes the world's largest conference dedicated to higher education, which acts as a true showcase of innovation for training and highlights innovative educational projects to follow.
This year, the work of the Cnam team was selected by the EDUCAUSE 2022 scientific committee to be presented to the community:
https://events.educause.edu/annual-conference/2022/agenda/feedbacks-from-teaching-and-learning-with-an-immersive-digital-twin-of-a-chemistry-lab

The project of the Cnam called CAP'VR gave rise to **MIMBUS Chemistry**, the first immersive educational tool for training in chemistry for students in the chemical, pharmaceutical and agri-food industries.

And to provide the most realistic and seamless experience for chemistry students, MIMBUS Chemistry is available with the HP Reverb G2 headset from HP.

Practical work in chemistry with virtual reality

The Conservatoire National des Arts et Métiers is a pioneer in the digitalization of its training courses and innovation is at the core of its concerns.

CAP'VR was born during the COVID crisis. Despite the confinement, the Cnam had to ensure the continuity of its teaching. The teams succeeded in passing 95% of its courses by distance learning, but the practical work necessarily implied a presence on site that the containment measures did not allow.

As a real precursor, the Cnam launched a project to develop a digital twin of its chemistry laboratory and called upon MIMBUS to design and develop chemistry lab work in virtual reality within the framework of the project called CAP'VR.

Educational objectives to be reached

One of the main challenges of the project was to allow the students to live an immersive experience in a chemistry laboratory in complete safety.

Indeed, the virtual world makes it possible to simulate dangerous events without putting the students in danger: an explosion, the breakage of a beaker or the emission of toxic vapors, everything is possible to learn good safety practices.

The other important aspect of this project was to be able to follow the students' learning in virtual reality. This is what MIMBUS offers with VULCAN, the only platform for the analysis of manual skills.

Virtual reality makes it possible to track the user's activity during his manipulations. At the end of the exercise, a set of information is communicated to him:

- His general score
- His success or failure in the exercise

- The type of fatal error if present
- The time spent
- The skills developed:
  - ✔ Protection: corresponds to the PPE selected before entering the laboratory
  - ✔ Safety: corresponds to the fact of having put oneself in safety after the appearance of the danger
  - ✔ Categorization: corresponds to the learner's ability to recognize the danger he/she is facing.
  - ✔ Autonomy: corresponds to the assistance requested by the user
  - ✔ Reaction time: corresponds to the speed of execution of the exercise from the moment when the danger is generated.

Thierry KOSCIELNIAK, national director of digital at the Cnam, says: "the immersive virtual practical work is not intended to replace the practical work, but the sessions allow to practice before and after the practical work and to optimize the occupation time of the laboratory".

A solution that will grow

The CAP'VR project continues to feed the MIMBUS Chemistry solution after two years of work and development. Three themes of 11 modules are available and allow the discovery, safety and manipulation in the laboratory. The Cnam has integrated for one year (2021-2022) the solution to its training courses.

MIMBUS Chemistry is a real revolution that offers the scientific world a tool to enhance their work and their environment. Learners have already been able to train with MIMBUS Chemistry and the Cnam team has seen the positive effects of this new pedagogical tool.

The presence of the Cnam at the EDUCAUSE 2022 annual conference in Denver, Colorado, is a real opportunity for MIMBUS to deploy the solution internationally and to present it to the largest chemistry schools and laboratories in the world.

MIMBUS Chemistry is a living pedagogical solution that will develop and flourish over the next few years.

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MIMBUS

About MIMBUS:
MIMBUS is born from the awareness of Laurent DA DALTO that vocational training was faced with issues that new technologies could solve. Welder, painter, cabinet maker, electrician... the company put innovation at the heart of the training, allowing to train students faster, in a totally safe environment and with lower costs.
More information: www.mimbus.com

About the Cnam:
A meeting place for the academic and professional worlds, the Conservatoire national des arts et métiers is a major institution of higher education and research. Its three main missions are lifelong professional training, technological research and innovation, and the dissemination of scientific and technical culture.

More information: www.cnam.eu