

# Research report: virtual reality use for simulation of controlled environment for academic purposes

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*Keywords:* virtual reality, simulation.

Several Science and technology institutions of RJ state have played an important role for Brazilian society. An example of these institutions is the Instituto de Engenharia Nuclear (Nuclear Engineering Institute). The activities on IEN generate products and services such as produce and provide radiopharmaceuticals, tests and analyses of material, collection of radioactive waste and human resources training. However, even in the information era, not every citizen can access the generated knowledge in these institutions. Given this scenario we can see the population lack of knowledge, so this kind of information should be better publicized, mainly for public at school age; For this purpose, the IEN Facilities has a scheduled technical visit program for students on school age, however, due to the nature of their activities, many of its facilities have access restrictions. Virtual Reality [1] consists on using some technologies to pass on the impression that the user is really a part of the virtual environment, thus, virtual simulations are used for various purposes, such as rehabilitation, training, and entertainment, and in this case as an educational tool [2,3]. After some research about the possibilities of using Virtual Reality to forge a simulation system with institution's own employees, a technical visit simulation in a controlled environment (in this case, the facilities of the Argonauta Reactor) where the users will have "movement freedom" inside of the reactor building, is being developed in order to clarify and teach about the stages of production, security, and reactor control to the general public.



Figure 1. Example of specific interaction (Open Door)

As a result, it is expected to demonstrate the importance of virtual reality as a knowledge tool and propagation of controlled environments simulation, and generating a work that can be applied to any other institution that have more restricted visitation policies

## References

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