



SIMULWIND: maintenance SIMULator for the sustainability of European WIND farms

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Report Pilottest
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Introduction

The BZEE network partner OffTEC Base GmbH & Co. KG, which is located on the GreenTEC Campus in Enge-Sande, agreed to take part in the Pilot Test. The latter is also active in the field of H&S and training. In this way we were able to carry out the Pitot Test not only together with the trainees, but also with the trainers, who should use the simulator in their training courses.

Participants

Instructors/trainers from OffTEC Base GmbH & Co. KG, as well as selected individuals who completed training on the second day of the pilot test took part.

The event

The trainers were firstly informed about the research project in general and then the simulator was presented to them. Next the simulator was discussed in order to hear the expectations and wishes of the users before they had contact with the product "SIMULWIND" for the first time.

Subsequently, BZEE Academy GmbH demonstrated the simulator. The scenario completed at the time of the pilot test was shown. Furthermore, it was demonstrated how to change the existing scenario and how new objects can be loaded into the simulator. The participants of the pilot test were then able to test the simulator for themselves. The focus was on the completion of the scenario available.

After all trainers/instructors were familiar with the simulator, trainees on the GreenTEC campus were selected on the second day of the pilot test, who after instruction by the OffTEC Base GmbH & Co. KG trainers ran through the scenario in the simulator.

The findings from the trainers' own experiences as well as the findings of the selected trainees were then discussed.

Evaluation and conclusion

The expectations of the trainers at OffTEC Base GmbH & Co. KG were very high at the beginning of the test. This was mainly due to the fact that the simulator was announced by us as a replacement for the existing theoretical training. However, it became apparent that the simulator is not self-explanatory, especially when used with the trainees. Therefore, theoretical training should always take place in advance so that the scenarios programmed into the simulator can be successfully completed.

The trainers suggested that the help function, which already exists in the simulator, should be further developed, so that real "learning" and not only "executing" is possible. It was positively noted that the stored procedure was already very detailed and the individual steps were logically structured. This made it exciting for participants who were using the simulator, but the other participants of the pilot test got bored very quickly. This led to the conclusion that either several 3D glasses were required or that training with the simulator should be carried out in very small groups.

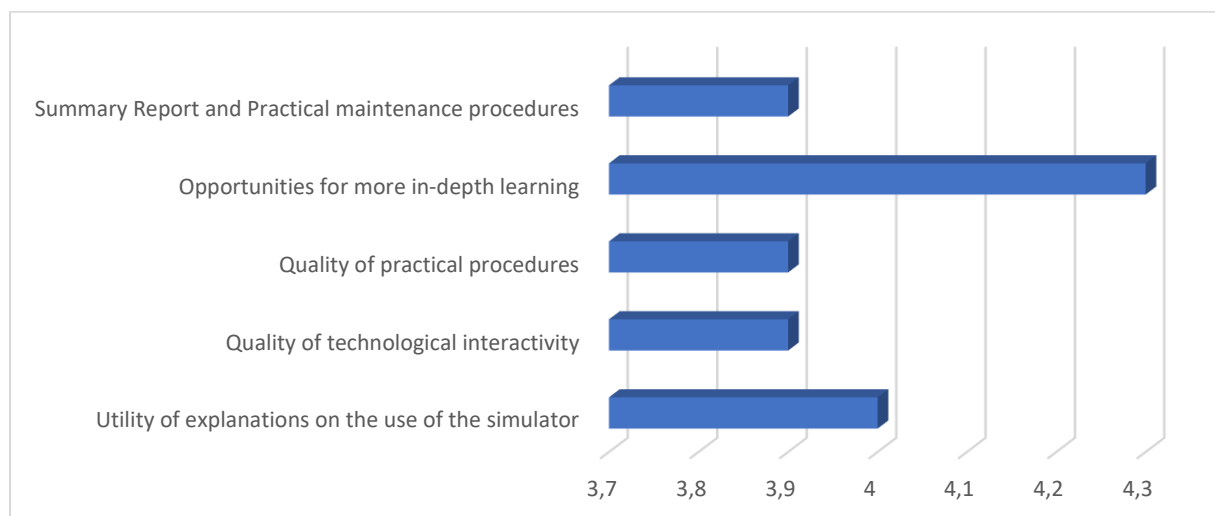


Figure 1: Evaluation results

Furthermore, the extent to which an introduction to the 3D environment is generally necessary before trainees can train with the simulator was discussed. It was noticed that the first steps in the simulator took a lot of time. It was therefore considered useful to first give an introduction to the 3D simulator in general before training on concrete scenarios.

Furthermore, it was concluded that the simulator could always be an addition to an existing training program. The scenarios should be explained in theory in advance and the trainees should have the opportunity to learn the individual steps by heart. For example, a course could be run over 2 days, with the theoretical part taking place on the first day and the simulator training continuing on the second day.

Inserting new scenarios and changing scenarios seemed very difficult to the testers. It was concluded that when using the simulator in a company, there must be one person who is familiar with the topic, while the trainers only give suggestions/ideas for new scenarios.

Furthermore, it was noted that in the field of Service & Maintenance work is always done in a team (2 people always enter a wind turbine), so it was asked whether it is possible to work with 2 3D glasses in a simulator. This point was noted and passed on to the programmer. Despite the various criticisms and suggestions, the simulator was received very positively by both the trainers and the trainees. They were sometimes surprised at what is possible with 3D technology and how true-to-detail the movement in a virtual wind turbine is. All participants could envisage integrating the simulator into existing training content. However, pure simulator training does not seem to be an option.