

Answers to pending VoxR questions

Session 2: Standardization, testing and certification – keeping pace with change

- **@All: The Future of work needs a better and integrated combination of product safety and work safety. But is there enough will and drive to combine those two topics in standardization?**

Digitalization of standardization - already started (Johannes Stein, VDE/DKE)

- **Is not a certain risk that machine readable and linkable standards lead to „cherry picking“ which undermines the concept of the holistic understanding and using of standards?**
- **Will the digital standard be less expensive?**
- **How do you cope with the fastest digital development and the translation of new digital requirements into standards? Standards writers have not enough time to dedicate to standards than before. Do you have an idea on how to deal with it?**
- **How the digitalization effect on the quality of standards?**
- **How far along are you with the automated certification process and how can we get involved in how you implement that?**
- **For certain cases a traditional way of standard writing is crucial (consensus, safety, etc.) - do you think this will be possible even with all this digitization in the future?**

The influence of artificial intelligence on standardization and OSH (André Steimers, IFA)

- **Do you believe that in the near future the German social accident insurance could also publish regulations on artificial intelligence? For example similar to a "DGUV Information"? Do you think this is also a good idea?**
A. Steimers: That would really be a good idea to bridge the time until international standards were created. However, I think it makes more sense to do this in cooperation with other interested partners in Germany.

- **If an AI or machine learning system is a Black Box, how can we trust them? In particular with the view on examples for problems/false interpretations you have shown.**

A. Steimers: Here it depends in particular on the exact design of the respective application. In the presentation, an example was used to show how a complex problem can be transformed into a simple one. Furthermore, there are many procedures that can contribute to the quality of an AI algorithm, but these must be recognized and fully applied. Especially at this point, the need for standards is certainly high.

All in all, extensive tests and the embedding of a risk management process in the development process are required. If it turns out that the AI system alone cannot provide a sufficient level of safety, classical safeguards should be used.

- **Will AI-based technologies be able to achieve safety certification in the future (e.g. will the AI standardization groups also look at things like Functional Safety ISO 13849)?**
A. Steimers: That should be the goal, but it is always important to look at the whole system. Artificial intelligence technologies can help to increase the functional safety of a system, but on the other hand, it is often necessary to use proven technologies to make systems based on AI technologies functionally safe. To make this possible, close cooperation between the standardization groups of Artificial Intelligence and Functional Security is required. However, this has not yet been initiated by either side.
- **Behaviour Analysts have successfully trained pigeons to detect people, ships, tanks etc. on photos and to differentiate between the paintings of Picasso and Monet. Are there attempts to include the research methods of behaviour analysis into artificial intelligence research?**
A. Steimers: Many methods of machine learning were inspired at least by the learning behaviour of living beings
- **Is an AI system only able to work within its learned area? (cow, dog)**
A. Steimers: So far, yes.
- **What can we learn from China?**
A. Steimers: I would like to answer this question by quoting a representative of one of the leading technology sectors in Germany: "If we want to introduce innovations into the company, we prefer to buy a start-up. In this way, we do not have to bear the risk of research. In this context I would say: The courage to break new ground.
- **How do you define AI?**
A. Steimers: AI is the capability of a system to solve problems by emulating concepts that are generally associated with intelligent behaviour.
- **These AI solutions proposed by Microsoft for the workplace were very criticised on social media for possibility of serious breaching of workers rights to privacy. What is the speaker opinion on that problem?**
A. Steimers: To generate a warning, the video material in the example shown must be edited but not saved. In this case, it could be technically ruled out that the image material could be used for monitoring by third parties. In this context, however, I would be interested to know how the department store surveillance is legally regulated, as the data collected there is monitored and stored.

Standardization roadmap "The future of work (Philipp Albrecht, DIN)

- **Specifically about home office, is there anything being thought regarding OHS?**
- **Does work oriented skill contains safety training?**
- **What does DIN to support people writing standards?**
- **In WGs very often new Members are not aware about the standardisation processes and the necessary content and Language due to the legal (directives) background. Could it be possible to ask e.g. by DIN for a basic standardisation qualification?**

EU standardization system (Phil Papard, UK)

- Why is it impossible to standardize the way standards are sold by the different NSB? E.g. price, information publicly available about the content, ...
- Why is the commission so strict with harmonizing standards where in fact there is no effective market surveillance?
- How is the involvement of the HAS Consultants at FDIS level an improvement?

Certification of competences - a good chance for safety and health in a changing world of work (Rüdiger Reitz, IAG)

- Is it helpful to standardize (EN, ISO) visual abilities and test methods for employees doing material testing?
- We are observing exponential growth of technologies. To use them safely we need more and more new knowledge and competences. Will competence certification be able to keep up with the pace of changes?
- I would appreciate consultants and experts to be certified for behavior based safety (see poster 2)
- Is there an opportunity for developing a Safety Consultant certification for the EU like the NEBOSH based on 17024?
- What about certification of competence of AI?
- Is certification of persons as efficient for safety as product safety with regard to OHS?
- How many demographic coaches work in Europe?
- How can the certification body test the personal competences? An example?
- How can we take into account cultural differences to certify competences?

COVR – Building consensus for using protocols to validate collaborative robotics applications across a wide range of domains (José Saenz, Fraunhofer IFF)

- I do believe collaborative robots will help mankind. I want to know your opinion about how long it will be necessary for us to have a collaborative robots to take care of ourselves when getting old.
- Are you planning certification round robin tests with Notified Bodies?

Industrial robotics on the edge (Otto Görnemann, Sick AG)

- Do we expect human behaviour from a dog, a door or our phones? No. Why then a robot?

- **Could AI generated motions without a previous validation be allowed according to current standards?**
- **If my colleague is a robot, what am I ? Am I not becoming a robot myself?**
- **What about using AI to forecast human movements and collisions?**
- **Where would you draw the line between robots and manipulators?**
- **What is your opinion of having a certified robot programmer in the company?**