



### **Yet profiting from not completely reliable systems - tackling false alarms problems**

- Risks and opportunities of imperfect automated systems: examples in daily life.
- Guidance for designing 'false alarms': choosing level of automation, design of the alarm and feedback on systems confidence information and accuracy.
- Preconditions for implementation: monitoring.

Advances in information technology lead to the development of various automated systems that are not completely reliable. These systems intend to assist the operator in achieving high performance. Examples are found in air traffic collision warning systems, luggage screening, semi-automated CCTV surveillance systems, friendly fire prevention and so on. However the effectiveness of these kind of systems is adversely affected by many factors. Users may over rely on the automated system erroneously thus leading to overload, disuse and misuse of the system and being back to the original start or worse.

So called 'false alarms' may be effective, if taking care of constraints carefully. First the useless container concept of 'false alarms' should be unraveled in order to understand contributing elements to effective non-perfect automated systems. Then the design and implementation of these kind of systems need deliberate care in balancing for the appropriate level of system confidence information.

- In the design stage, this is achieved by for example appropriately choosing the level of automation (LOA), design of the alarm signal and feedback on system confidence information and accuracy.
- In implementation stages sound education lead to proper belief and trust regarding the system.

This presentation unveils key aspects of human reliance in imperfect automated systems, that contribute to an effective system, based on literature, experiments and results from real life.