

Gamification of the aviation sector

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Restructuring IT systems in the aviation sector requires cross-disciplinary collaboration between experts from different organisations and countries. This isn't easy. Can help be found in the world of computer games?

The use of games mechanics for purposes other than pure entertainment is called gamification. In recent years the method has been used in different settings to boost user involvement and motivation linked to a variety of activities.

"In its simplest form this may just be hype, such as awarding points for things like filling out your timesheet before the weekend," says SINTEF researcher Erlend Andreas Gjære. "But our focus is on quite a different track," he says.

Together with researchers from Italy and Germany, Gjære and his colleagues at SINTEF are going to find out how aspects of games technology can be applied in a context somewhat out of the ordinary. Specifically – how to achieve the best possible adaptive solutions to changes in information security, safety, economics and organisation in the aviation sector.

Socio-technical changes

Europe's airspace capacity is at breaking point and we need better IT systems to manage this growth. Such systems may include those for [air traffic control](#), baggage handling, communication between aircraft and

flight schedule planning. But the changes are just as much about socio-technical considerations as they are about technical systems. All IT systems have an effect on people and operational factors.

"Restructuring can be exciting, but is often difficult to implement," says Gjære. "People enjoy doing their own thing – inside their own bubbles. They have to be seduced into working together and testing each other," he says.

"Our approach is not competition-based. However, we are trying to create the same experiences that computer games provide, such as the mastery of new challenges and proficiency in finding out new things and taking the lead," says Gjære. "If there's anything that aviation experts need in the face of major IT system restructuring, it's better communication," he says. "The aviation sector has lacked a high-level command structure for system development. For this reason, the airlines, domestic and international aviation authorities, and the safety and infrastructure organisations, will have to work effectively together. It is here that we believe that gamification can come into its own," says Gjære.

Three requirements

Researchers are developing a web-based modelling tool designed to coordinate and integrate all the change proposals. This will make it possible to carry out cross-disciplinary analyses. The tool shall be based on the following principles:

1. Proficiency. The tool can facilitate the mutual understanding and recognition by others of a given individual's point of view. The user can experience becoming more skilled within a new field.
2. Autonomy/self-control. Users will remain experts in their own fields, but by linking inputs from all other users, it will become

easier for an individual to explore the full scope of available solutions and use the information to take new initiatives.

3. Relatedness/collaboration/interdependence. In the same way as computer games are played all over the world, the best solution will be found by interacting with others. Each user contributes with his or her own expertise, resulting in an effective joint solution.

"We will be working on this project until March 2018," says Gjære. "And our product will not be a new [computer game](#), but hopefully a model that can be put to good use," he says.

Provided by SINTEF

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