SESAR JOINT UNDERTAKING

9th SESAR Innovation Days

Information Visualization Dashboard Concept for Unified Air Traffic Management

Concept

Drone-based services in cities will most likely result in high traffic densities, especially during peak hours. This can result in airspace quality issues in various areas: safety issues such as infringements and excessive detect-and-avoid, performance and environmental issues such as excessively long paths or delays, noise and congestion. This poster presents an information visualization dashboard concept to describe a number of key performance indicators for airspace quality. The concept has been implemented in a city drone traffic simulator (UTM CITY) for a Swedish city (Norrköping).

Dashboard

The dashboard shown to the left in the top-right corner enables the controller to monitor the airspace quality by means of a number of key performance indicators, such as number of drones, conflicts and infringements. The dashboard can be used to evaluate the air-space performance and quality in real-time.

Scenario

The current scenario uses 78 drones, which is well over the capacity of a single air traffic controller with current methods and tools. So, we can conclude that they are not able to directly monitor each individual drone. Control must be on a higher level with support from smart automation. The role of the air traffic controller is then transformed into an air space manager role that sets the rules for the airspace, which directly impact on the operations of drones. The anticipated tool optimizes the usage of the airspace related to the need from the actual drone traffic.

Touch Table

Photograph of the drone traffic simulator, three-dimensional visualization and a dashboard, used to interact with and manipulate airspace parameters using your fingertips.

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