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The impact of severe convection on air traffic and forecast products for air traffic control

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Severe convection has great impact on aviation. Thunderstorms are one of the most dangerous weather phenomena in all phases of flight: during en route, take off, landing and ground handling at the airport. In addition to safety, convective storms have also major impact on air space capacity.

From April to September Austria is frequently affected by severe thunderstorms. Detailed forecasts of severe convection are particularly important for air traffic control to minimize flight delays and ensure economical air traffic operation. At Austro Control custom severe convection forecast products were developed to meet the specific requirements of air traffic control, both for en route and the terminal operation. These products have been operational since a couple of years now, and were subject to constant improvement. A second generation of these products is under development with the intention to combine the current manual product with automatic nowcasting algorithms and numerical weather prediction products in order to be able to increase forecast coverage in space and time.

A case study showing the impact of severe convection on air traffic will be presented. Emphasise will be placed on decision support for air traffic controllers by the aeronautical meteorological service.