

Spaceplanes

Space Traffic Management and Space Port Management in Europe

Brief description

Spaceplanes – aircraft that reach their destination on Earth through space – are a conceivable addition to future aviation. They will fly through airspace and land at airports. Operational scenarios are already now being investigated and evaluated in Germany and elsewhere in Europe, including the identification of possible landing sites (spaceports).

Aims

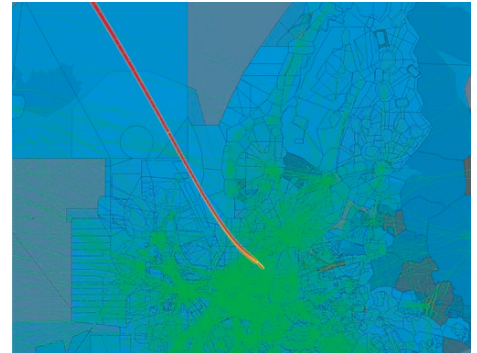
Development of solutions and assessments for the safe integration of spaceplanes into the European air transport system, and for associated joint traffic with other aircraft, as well as for adapted landing procedures and possible spaceports.

Applications

- Innovative concepts for air-space management.
- Rapid space access for communications technology, remote sensing and micro-gravity experiments in the fields of biology, medicine and materials science

Outlook

- Rapid, independent access to space for Germany and the rest of Europe.
- New business models in commercial space travel.
- Promotion of space-based digitalisation (data networks).
- Promotion of Germany as a location for small and medium-sized businesses (SMEs)



Parties involved

DLR Institute of Flight Guidance

Facts and figures

Development environment for spaceplane trajectories and evaluation in the air-traffic validation centre (including fast-time and real-time simulations). Development of a tool for access to the Single European Sky and the international exchange of flight data.



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In future, spaceplanes will join the air transport system, flying into space at supersonic speeds and returning inertly to Earth for landing. Potentially, these innovative combined air- and spacecraft will soon be able to take off and land at 'spaceports' in Germany or elsewhere in Europe. This additional mode of transport represents an opportunity for promoting Germany as an industry location, but may also affect air traffic. As such, DLR is already investigating how this aviation system of the future can be integrated effectively here. This involves the selection and assessment of potential spaceports and airspace management to ensure safe take-offs and landings that will not affect other air traffic. Likewise, systems are being developed to allow the 'Single European Sky' to be integrated into an international framework and in the US 'NextGen' airspace.

