



*Together with Capgemini, we have developed a reference architecture for the aviation industry that has even been submitted to the Open Group for international standardization."*

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# IT reference architecture: Standardization integrates Lufthansa's processes

Capgemini supports Lufthansa in the development of a reference architecture for the aviation industry

## Well connected from landing to take off

Lufthansa can look back on a turbulent history marked by significant challenges within the aviation industry to see that while economic crises and political conflict previously affected aviation development, now it is extensive changes in the market. Lufthansa has always been able to rise to the challenge and continuously reinvent itself, resulting in a leading position in the international aviation industry. The airline can partially attribute its success to various alliances, such as the Star Alliance, which was founded in 1971 and today is the largest cooperation in the industry with 28 member airlines. The Lufthansa Group has a further three strategic joint ventures as well as over 550 subsidiaries and holding companies.

## Overview

**Company:** Lufthansa AG

**Sector:** Aviation industry

**Region:** Germany

**Client challenge:**

Lufthansa wanted to simplify integration of business processes with partners and suppliers

**Benefits:**

- Greater transparency due to description of all processes, data models, interfaces, and applications
- Harmonization of company-wide business processes through the modular principle
- Reference architecture acts as a design principle and guideline, which ensures mutual understanding among all involved parties
- New features can be developed more quickly
- Significant competitive advantage



When a passenger flies from A to B, maybe transferring at location C, he or she passes through several IT-supported processes such as logistics, administration, and security. One airline does not operate all of these procedures, which are in fact often managed by the airports or the airline of the connecting flight. The reference architecture helps define the interfaces for the various processes, allowing the interlinked IT systems to successfully integrate with one another. Such a seamless integration of business processes requires an effortless data exchange, made possible by the pioneering IT reference architecture that Lufthansa and Capgemini jointly developed for the aviation industry.

The reference architecture provides a blueprint for business processes and interfaces, simplifying their integration with one another. Architects and developers from all partners and suppliers can quickly procure or develop new IT functions and modules. The architecture is based on the "The Open Group Architecture Framework" (TOGAF) and maps ten specialist domains corresponding to the business functions of an airline: cargo, maintenance, sales, network and fleet planning, revenue management, flight operations, marketing, and customer service. The architecture also covers business, data, application, and technology architecture, tiers that are defined by the TOGAF architecture.

## Mutual understanding fuels performance

The developed reference architecture provides much needed transparency. It allows partners and suppliers to connect their processes in order to develop new offers and strengthen the alliance's competitive edge. This creates a shared vocabulary for all involved parties regarding the conception of solutions, IT systems, and interfaces. The common language facilitates collaboration and simultaneously increases business efficiency. New employees can train themselves more quickly because they have access to a comprehensive knowledge base. The reference architecture has been approved and published by the Open Group (<https://publications.opengroup.org/p180>). Building on the initial successful collaboration, Capgemini and Lufthansa are currently working on an updated version with other airlines such as IAG and Air China.

## The collaborative approach

The Collaborative Business Experience™ is central to the Capgemini philosophy and a pillar of our service delivery.

- Capgemini and Lufthansa worked as partners with close coordination between the teams. This style of working was showcased when they jointly presented the developed reference architecture at the Open Group Conference in Berlin in April 2017, in San Diego in December 2017, and in Dublin in May 2019.
- Together Lufthansa and Capgemini are developing the Lufthansa Enterprise Architecture Framework (LEAF), which models the domains and view points of Lufthansa's architecture work.
- The entire global aviation industry will be able to use the TOGAF reference architecture as a guideline once it has been successfully certified.

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## About Capgemini

A global leader in consulting, technology services and digital transformation, Capgemini is at the forefront of innovation to address the entire breadth of clients' opportunities in the evolving world of cloud, digital and platforms. Building on its strong 50-year heritage and deep industry-specific expertise, Capgemini enables organizations to realize their business ambitions through an array of services from strategy to operations. Capgemini is driven by the conviction that the business value of technology comes from and through people. It is a multicultural company of over 200,000 team members in more than 40 countries. The Group reported 2018 global revenues of EUR 13.2 billion.

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## About Lufthansa:

Founded in 1926 and re-established in 1953, Lufthansa has become one of the world's most popular and renowned brands. The airline has delivered many outstanding contributions to the global aviation industry and is considered one of the safest airlines in the world. Lufthansa is also the founding member of the Star Alliance, the world's largest aviation alliance with 28 airlines and a fleet of 4,657 aircrafts. A total of 18,500 flights take place daily across the alliance to 1,330 destinations in 192 countries, carrying a total of 641.10 million passengers each year.

Find out more about Lufthansa here:

[www.lufthansagroup.com](http://www.lufthansagroup.com)