



**Lufthansa Technik**

## **Joint Press Release**

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### **SWISS equips entire Boeing 777-300ER fleet with AeroSHARK**

- **Riblet films from Lufthansa Technik and BASF save more than one percent fuel and CO<sub>2</sub>**

SWISS has decided to equip its entire Boeing long-haul fleet with the fuel-saving AeroSHARK surface technology. Starting in the middle of the year, a total of twelve Boeing 777-300ERs will gradually be fitted with the riblet films developed jointly by Lufthansa Technik and BASF. The significantly reduced frictional resistance resulting from this modification will make the sub-fleet more than one percent more fuel-efficient and lower in emissions.

Swiss International Air Lines (SWISS) is the first passenger airline worldwide to use the innovative surface technology to significantly reduce fuel consumption and emissions of one of its existing fleets, thereby improving both economy and ecology. With approximately 950 square meters of riblet film, the modification of the “long” Boeing 777-300ER will be even larger than the 800 square meters on the Boeing 777F of AeroSHARK's launch customer Lufthansa Cargo. The potential for fuel and CO<sub>2</sub> savings on this scale is around 1.1 percent. Converted to the operational profile of the Boeing 777-300ER at SWISS, this means annual savings of more than 4,800 tons of kerosene and roughly 15,200 tons of carbon dioxide, as much as is usually generated on approximately 87 long-haul flights from Zurich to Mumbai.

“Reducing our environmental footprint is one of the biggest challenges facing the aviation industry, and becoming carbon-neutral until 2050 is an important strategic

goal for SWISS,” said Dieter Vranckx, Chief Executive Officer of SWISS. “We are keen to actively promote and invest in the use of new technologies. We are pleased to be the world's first passenger airline to offer the innovative AeroSHARK technology on our Boeing 777 fleet, making another important contribution to more sustainable air travel in the future.”

“Due to the long lifecycles in our industry, we cannot only rely on new aircraft generations to reduce our environmental footprint, but also need to specifically optimize existing fleets towards sustainability,” explained Dr. Johannes Bussmann, Chief Executive Officer of Lufthansa Technik. “AeroSHARK makes a significant contribution to this, and I am very pleased that SWISS is leading the way.”

“In developing our Novaflex Sharkskin surfaces, the focus was on a robust yet functional solution that meets the stringent requirements of aviation and also helps our customers achieve their sustainability goals,” said Uta Holzenkamp, head of BASF's Coatings division and in this position also responsible for functional films. “The fact that SWISS is convinced by our solution shows that economic action and sustainability go hand in hand.”

SWISS will install AeroSHARK on its Boeing 777-300ER fleet successively from mid-2022 during suitable maintenance layovers. The airline had already supported Lufthansa Technik and BASF during the development phase of AeroSHARK: In the summer of 2021, a Boeing 777 wing was precisely measured for the entire duration of a regularly scheduled flight between Zurich and San Francisco. With the data collected, Lufthansa Technik was subsequently able to create highly accurate 3D models for flow simulations, on the basis of which the AeroSHARK modification is to be extended to the wings of the Boeing 777 in the near future in order to realize further savings potential. SWISS will also provide one of its aircraft for the so-called STC flight to obtain the required Supplemental Type Certificate from the European Union Aviation Safety Agency (EASA).

AeroSHARK is a surface technology developed jointly by Lufthansa Technik and BASF that consists of ribs around 50 micrometers in size - known as riblets. It specifically imitates the properties of sharkskin, which has particularly favorable flow characteristics, and thus optimizes aerodynamics at relevant points on the

aircraft. As a result, less fuel is needed overall. Lufthansa Technik and BASF intend to systematically develop the new technology further in the direction of additional aircraft types and even larger surfaces, so that in the future they will be able to provide airlines around the world with even more extensive support in achieving their emissions targets. In initial model calculations, the sharkskin technology in its maximum expansion stage could even avoid CO<sub>2</sub> emissions to the tune of up to three percent.

#### **About BASF:**

At BASF, we create chemistry for a sustainable future. We combine economic success with environmental protection and social responsibility. More than 110,000 employees in the BASF Group contribute to the success of our customers in nearly all sectors and almost every country in the world. Our portfolio is organized into six segments: Chemicals, Materials, Industrial Solutions, Surface Technologies, Nutrition & Care and Agricultural Solutions. BASF generated sales of €59 billion in 2020. BASF shares are traded on the stock exchange in Frankfurt (BAS) and as American Depositary Receipts (BASFY) in the U.S. Further information at [www.basf.com](http://www.basf.com).

#### **About BASF's Coatings division:**

The Coatings division of BASF is a global expert in the development, production and marketing of innovative and sustainable automotive OEM and refinish coatings, decorative paints as well as applied surface treatments for metal, plastic and glass substrates in a wide range of industries. This portfolio is supplemented by "Beyond Paint Solutions", which enable new applications with innovative surfaces. We create advanced performance solutions and drive performance, design and new applications to meet our partners' needs all over the world. BASF shares skills, knowledge and resources of interdisciplinary and global teams for the benefit of customers by operating a collaborative network of sites in Europe, North America, South America and Asia Pacific. In 2020, the Coatings division achieved global sales of about €3.1 billion

Further information at [www.basf-coatings.com](http://www.basf-coatings.com).

#### **About Lufthansa Technik:**

With some 35 subsidiaries and affiliates, the Lufthansa Technik Group is one of the leading providers of technical aircraft services in the world. Certified internationally as maintenance, production and design organization, the company has a workforce of more than 22,000 employees. Lufthansa Technik's portfolio covers the entire range of services for commercial and VIP/special

mission aircraft, engines, components and landing gear in the areas of digital fleet support, maintenance, repair, overhaul, modification, completion and conversion as well as the manufacture of innovative cabin products.

**About SWISS:**

Swiss International Air Lines (SWISS) is Switzerland's largest airline. It connects Switzerland to Europe and the world with direct flights from its national airports in Zurich and Geneva. To do so, it operates one of Europe's youngest and most fuel-efficient fleets. Its freight division, Swiss WorldCargo, offers a comprehensive range of airport-to-airport services for high-value goods and care-intensive cargo. As Switzerland's airline, SWISS stands for its traditional values and is committed to the highest product and service quality. SWISS is part of the Lufthansa Group and a member of the Star Alliance, the world's largest network of airlines.

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