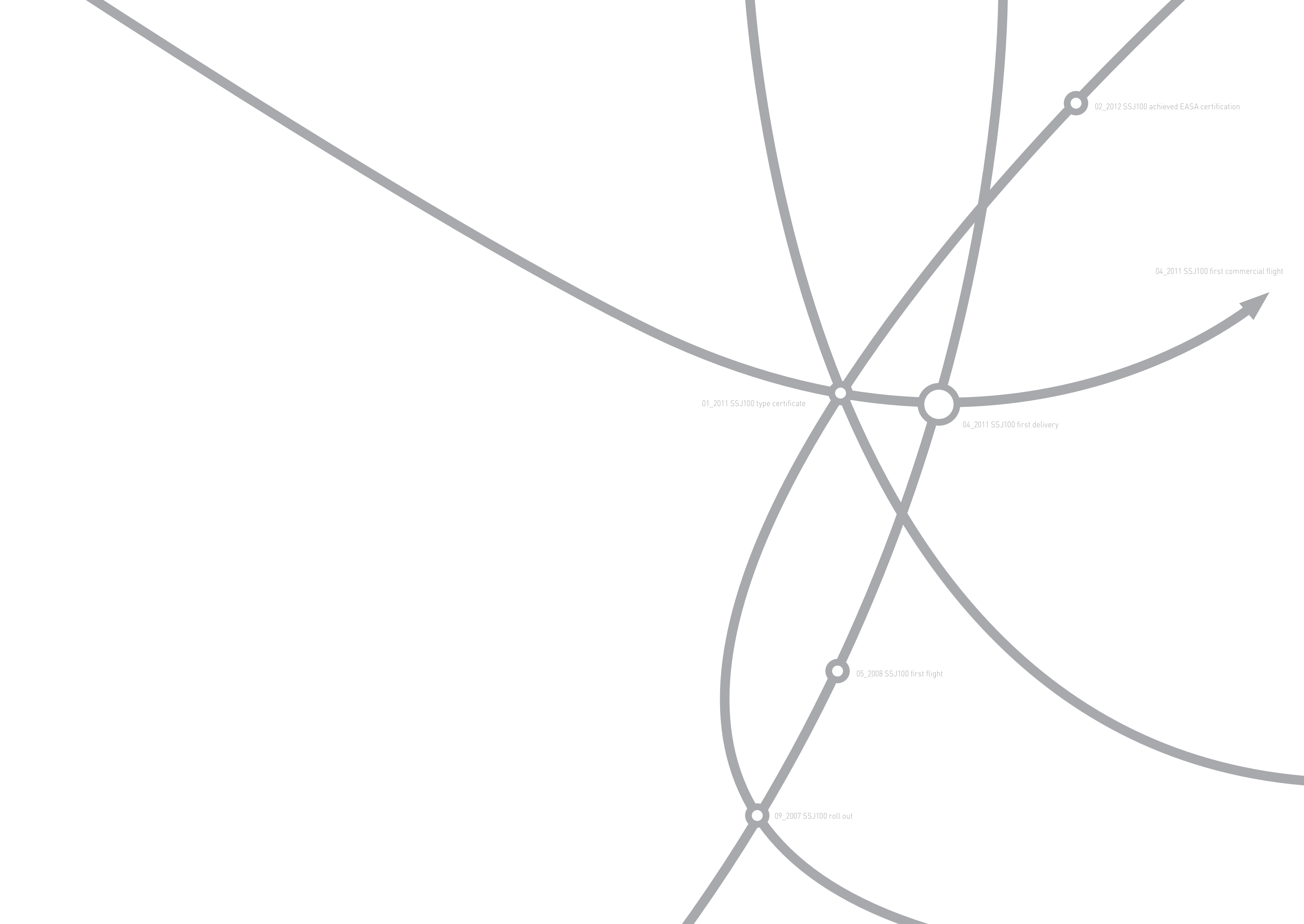


swift, agile, smooth flowing power_ **the evolution of flight**

SSJ 100



The hands that together launched a new approach to aviation



Renowned Russian aircraft manufacturer Sukhoi, in partnership with the well-known Italian aviation company Alenia Aermacchi (a Finmeccanica company), has created the all-new Sukhoi Superjet 100, the first airliner in which engine and airframe have been designed together to optimize performance.

The SSJ100 – a fusion of Russia’s famed aviation design and production skills with the latest systems from leading aerospace suppliers around the world – offers standards of economy, performance, environmental efficiency and passenger comfort never before seen in a 100-seat airliner. The SSJ100, the only aircraft of its size equipped with a full fly-by-wire system, offers big-jet feel in a compact form that is ideally suited to emerging airline markets, and perfect for operators looking to right-size their fleets.

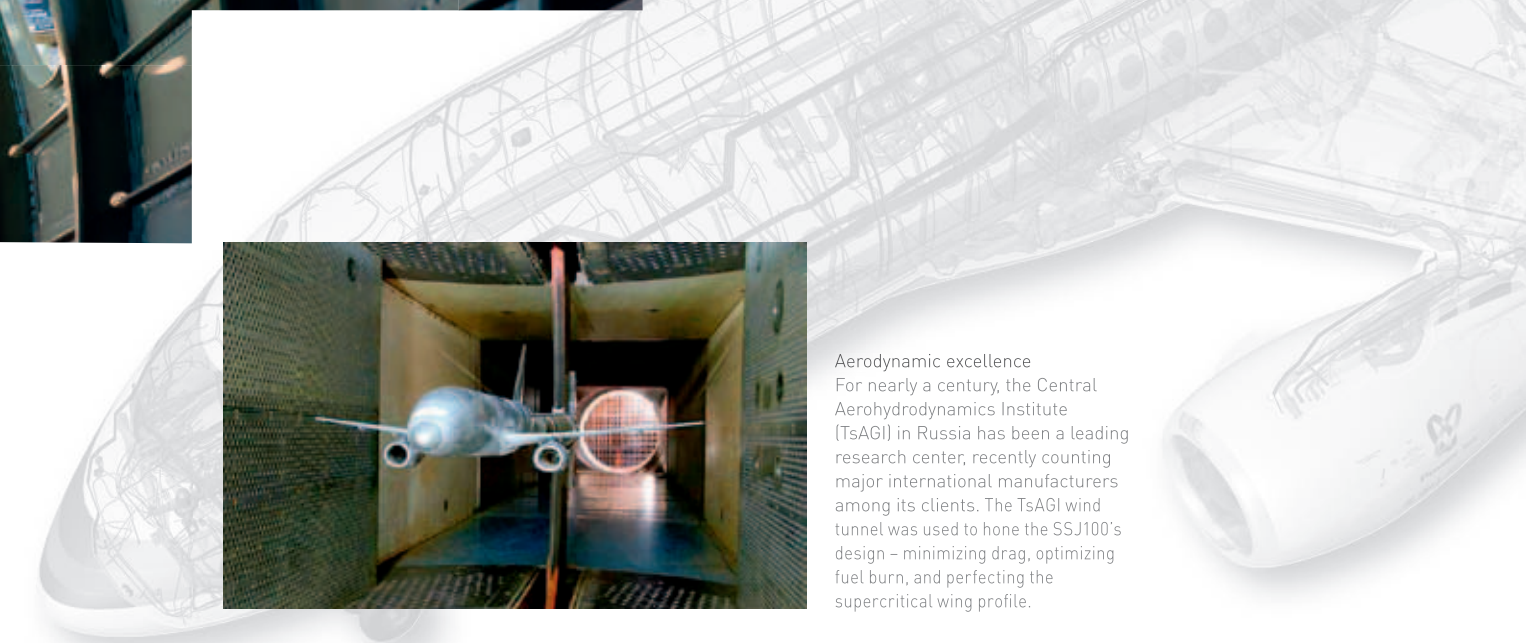
The success of this collaboration has been demonstrated by the SSJ100 meeting or exceeding the latest stringent European airworthiness and environmental standards, and thereby attaining EASA certification – the first Russian airliner to achieve this milestone.



project

Airframe and engine designed together right from the start. Maximizing performance through engineering synergy

Teamwork
Early in the project Boeing was involved as a consultant for program management. From the outset the SSJ100 was designed to use proven systems, many of which are derivatives of existing off-the-shelf components – a highly cost-efficient approach to aircraft design and construction, with obvious safety benefits.

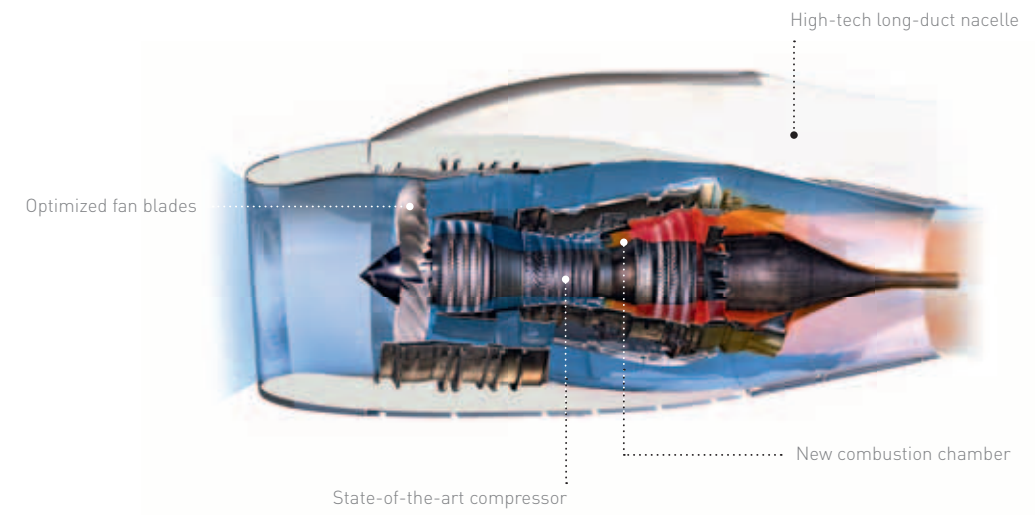


Aerodynamic excellence
For nearly a century, the Central Aerohydrodynamics Institute (TsAGI) in Russia has been a leading research center, recently counting major international manufacturers among its clients. The TsAGI wind tunnel was used to hone the SSJ100's design – minimizing drag, optimizing fuel burn, and perfecting the supercritical wing profile.

Designed to maintain
Catia Human Builder software has been used throughout the design and development of the SSJ100 not only to optimize flightdeck ergonomics but also to simplify maintenance: by designing in accessibility and providing excellent access to all parts of the airframe, the labor required to inspect, check and replace components is significantly reduced.

Russian airframe excellence
Sukhoi is a long-established manufacturer with vast experience in the high-tech production demands of modern aerospace structures. The SSJ100 follows the tradition of Russian airframe excellence, adding state-of-the-art avionics and controls sourced from leading suppliers to produce an aircraft ready to face the world's most challenging operating environments.

Optimized dedicated engine
The SaM146 engine that powers the SSJ100 was created especially for the aircraft and has been designed from the ground up with the demands of a regional jet in mind. This market requires frequent flights and fast turnarounds – a testing environment for an engine, especially when downtime must be avoided. The SaM146 is easy to maintain, and its class-leading fuel burn also contributes to low overall running costs. The engine meets the latest noise regulations and emission requirements.

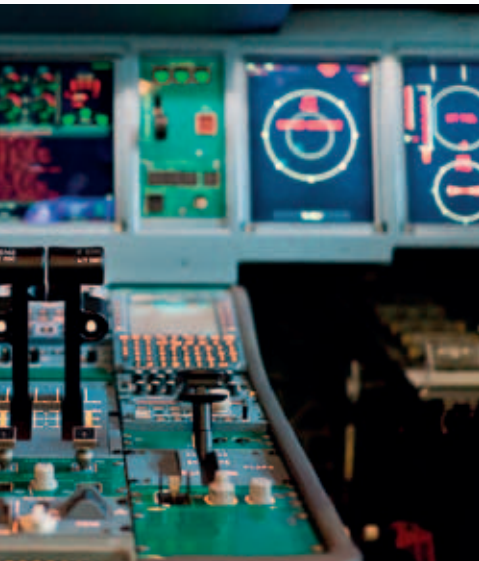




Bringing big-jet technology to the small airliner –

leading the way with the latest fly-by-wire and avionics systems

technology



First time fly-by-wire

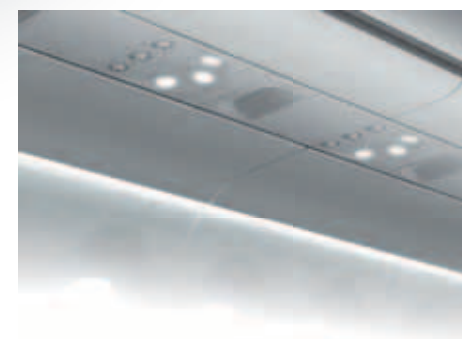
The SSJ100 is the first 100-seat jet with a full fly-by-wire (FBW) system, designed to optimize handling, reduce flight crew workload, and maximize fuel efficiency. The SSJ100's FBW offers the sophistication previously found only on larger airliners – the system provides full flight envelope protection, enabling the SSJ100 to operate safely under the widest range of conditions.

Swift diagnoses

The SSJ100 is equipped with a Centralized Maintenance System (CMS) that records and analyzes maintenance data, and swiftly diagnoses any faults. Quick and easy troubleshooting results in reduced downtime and costs.

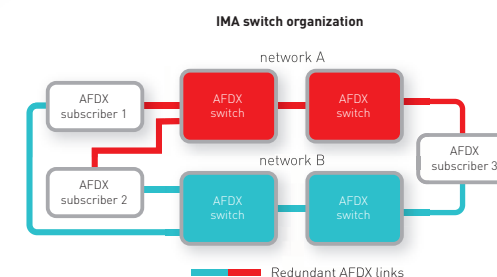
Advanced engine design

Designed especially for the SJ100, the SaM146 engine contains fewer components than its rivals – the high-pressure compressor, for example, comprises only six stages with two blisks. This optimized architecture leads to lower weight and reduced maintenance costs.



Efficient and versatile LED lighting

LED lighting is used throughout the SSJ100, from the external beacons to the passenger cabin. These low-maintenance lighting systems offer high levels of reliability and long operating lives – plus reduced power consumption.



Lighter, faster communications

The SSJ100 boasts Integrated Modular Avionics (IMA), supplied by market leader Thales. The modularity also allows upgrades to be made quickly and efficiently, with reduced overheads. The other principal component of the SSJ100's avionics system is an aircraft full duplex switched data network (AFDX), offering fast, reliable interconnection of the aircraft's computer systems. The network architecture reduces the amount of cabling used, while at the same time providing redundancy. This real-time airborne computer network saves both weight and maintenance costs.

deck

Deck environment

The crew benefit from a "dark and quiet" flight deck designed after extensive consultation with pilots to give a working environment that offers exceptional ergonomics. Five large switchable LCD screens provide flight data and an interface to the aircraft's state-of-the-art avionics, which include the latest weather radar, navigational and anti-collision devices, as well as an "electronic flight bag" option.

Engine controls

The SSJ100's engines are controlled by active, servo-driven throttles – an established design solution that pilots find intuitive to use.

Full fly-by-wire: crew-centered design featuring intuitive controls designed with the pilot in mind



Side stick
The long-strut sidestick not only offers exceptional comfort through attention to ergonomic detail, but has also been designed to give the pilot new levels of feel and feedback.



Flight deck-tech

The SSJ100 is the first aircraft of its class to be equipped with a full fly-by-wire (FBW) system, which has been designed to prevent the aircraft from exceeding its flight envelope and includes automatic deployment/retraction functions for high-lift devices and spoilers. Particular attention has been paid to the operational flight envelope, with control parameters adjusted to improve the feel of the aircraft under all conditions that pilots are likely to experience. The FBW system also enables the SSJ100 to operate as efficiently as possible, reducing fuel consumption and contributing to the aircraft's remarkably low running costs.



Leading names in world aviation

SSJ 100



avionics

electrical systems

engine

fuel system

wheel brakes, brake control

landing gear

ECS

hydraulic system

APU

THALES

Hamilton Sundstrand
A United Technologies Company

PowerJet
SATURN
SAFRAN
Snecma

INTERTECHNIQUE
ZODIAC
AEROSPACE

GOODRICH

SAFRAN
Messier-Bugatti-Dowty

LIEBHERR
Aerospac

Parker

Honeywell

overall length: 29.94 m (98.2ft)

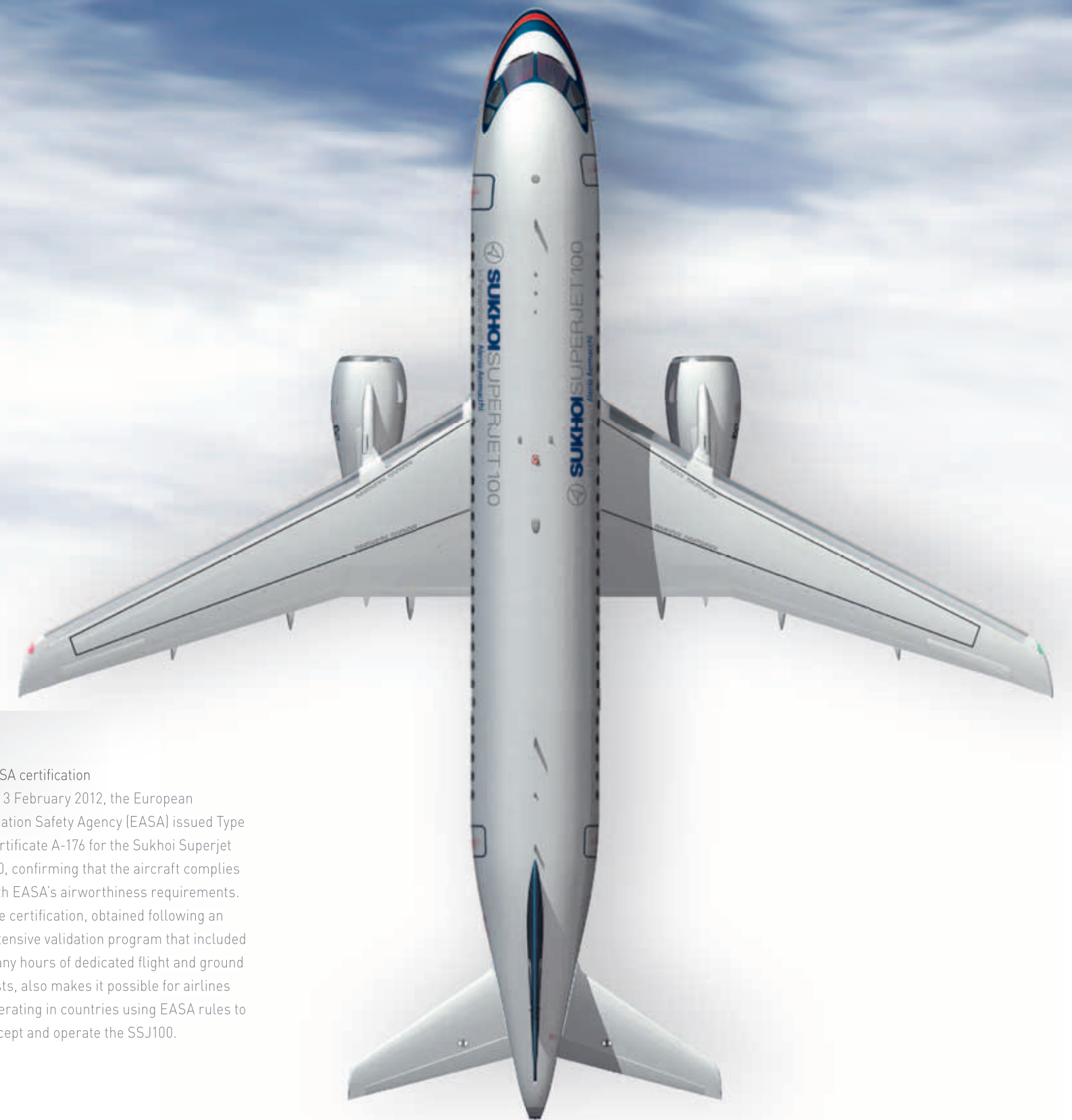
western industrial content more than 60%

SSJ100

The Sukhoi Superjet 100 has satisfied EASA's latest and most stringent requirements – confirmation of the excellence and reliability of this all-new design



tail height: 10.28 m (33.7 ft)



engines

type	2 PowerJet SaM146 turbofans	
thrust	15,400–16,100 lbf (68.5–71.6 kN) at NTO	
	17,500–17,800 lbf (77.9–79.2 kN) with APR	

airfield performance

SSJ100/95B		
takeoff field length (MTOW)	5,679 ft	1,731 m
landing field length (MLW)	5,348 ft	1,630 m
SSJ100/95LR		
takeoff field length (MTOW)	6,732 ft	2,052 m
landing field length (MLW)	5,348 ft	1,630 m

weights

maximum takeoff weight (MTOW)			
SSJ100/95B	101,150 lb	45,880 kg	
SSJ100/95LR	109,019 lb	49,450 kg	
maximum landing weight (MLW)			
SSJ100/95B	90,390 lb	41,000 kg	
SSJ100/95LR	90,390 lb	41,000 kg	
maximum zero fuel weight (MZFW)			
SSJ100/95B	88,185 lb	40,000 kg	
SSJ100/95LR	88,185 lb	40,000 kg	
maximum fuel capacity			
SSJ100/95B	4,175 US gal	15,805 l	
SSJ100/95LR	4,175 US gal	15,805 l	

EASA certification

On 3 February 2012, the European Aviation Safety Agency (EASA) issued Type Certificate A-176 for the Sukhoi Superjet 100, confirming that the aircraft complies with EASA's airworthiness requirements. The certification, obtained following an extensive validation program that included many hours of dedicated flight and ground tests, also makes it possible for airlines operating in countries using EASA rules to accept and operate the SSJ100.

wingspan: 27.80 m (91.2ft)

Passenger experience
 Passengers will notice the difference as soon as they step aboard – unlike the “tunnel effect” of other aircraft of this class, the spacious and airy cabin of the SSJ100 sets it apart from its competitors.



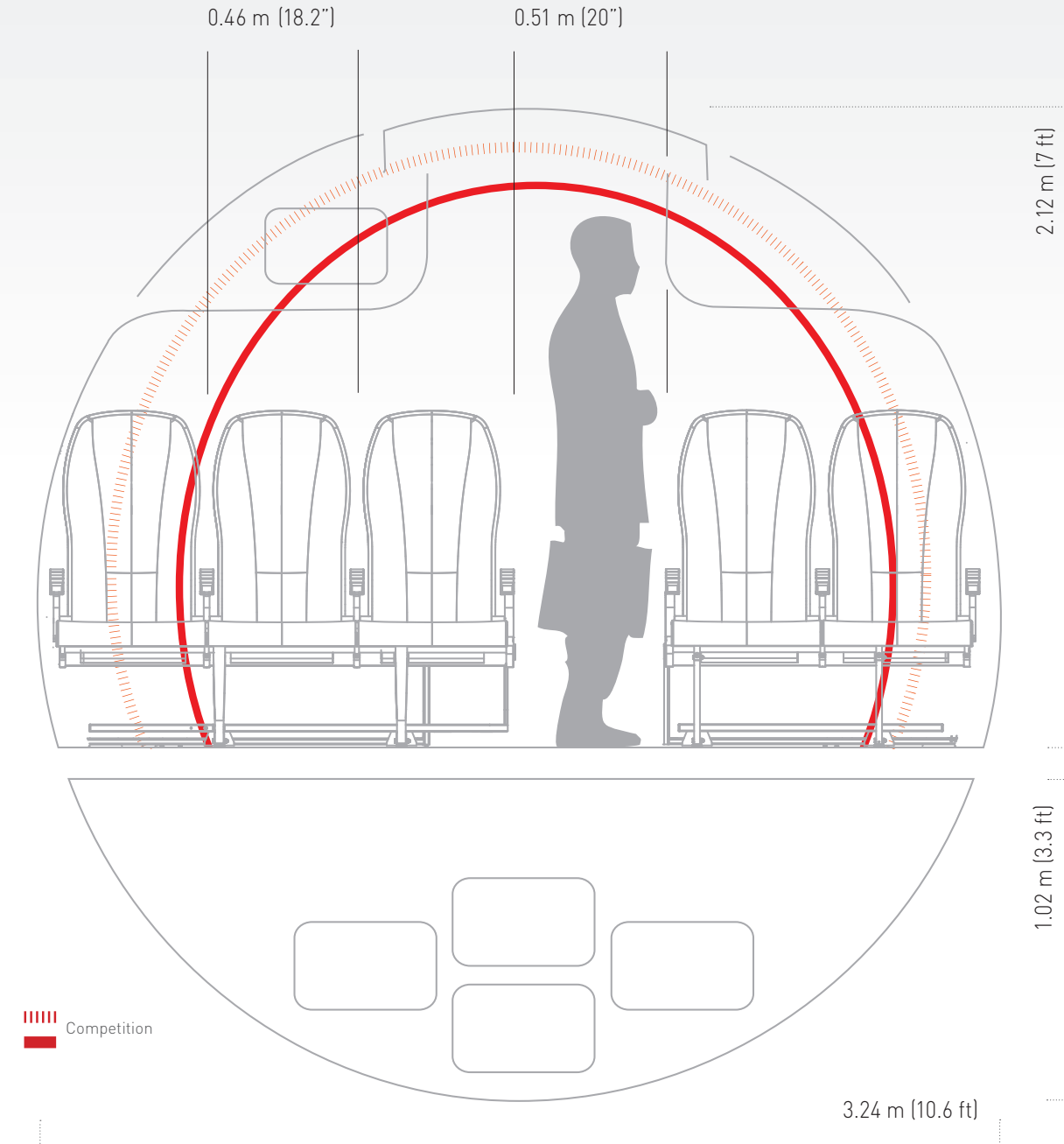
Ergonomic facilities
 As standard equipment the SSJ100 carries two toilets, meticulously designed to be comfortable to use and quick to clean. One toilet is tailored for the needs of disabled passengers and equipped for the use of people travelling with babies.

space

Narrow-body space in a compact airliner comfortable for passengers, profitable for operators

Wide seats
 The seats of the SSJ100 are wider than those of its competitors – the generous size and spacing plus ample legroom offer unsurpassed passenger comfort.

Wide aisle
 The SSJ100 has the widest aisle in its class, speeding up boarding and deplaning. The cabin crew can move easily through the cabin, with space to spare for passengers to pass by.



2+ m high cabin
 At over 2 meters high, the cabin of the SSJ100 has more headroom than any of its rivals, adding to the feeling of spaciousness and allowing even the tallest passengers to move around with ease.

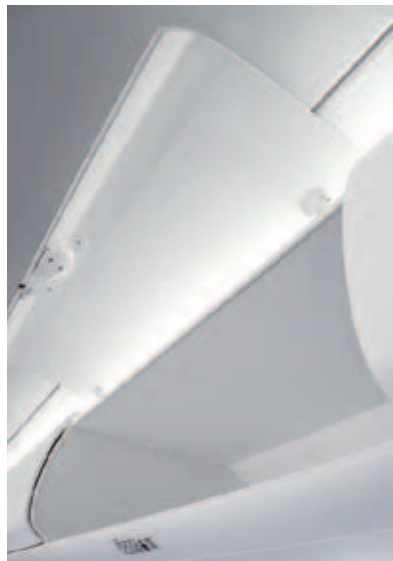
First five-seat abreast
 The SSJ100 is the first aircraft in its class with five-abreast seating, a configuration that offers more cabin space than any of its competitors. No matter where they sit – even in the middle seat – all passengers enjoy spacious accommodation.

Increased cargo space
 The diameter of the SSJ100's fuselage gives the aircraft the largest cargo bay in its class, with a maximum height of over 1 meter, easing the work of baggage handling. Two wide-opening doors give easy access to both the front and rear compartments, enabling rapid loading and unloading – vital for a swift turnaround at busy airports.

A sensation of space for passengers



LED lighting
 Cabin ambience is further enhanced by a state-of-the-art LED lighting system, offering independently dimmable zones and color-changing mood lighting (optional). This lighting is not only stylish, but requires little maintenance and is highly energy efficient.



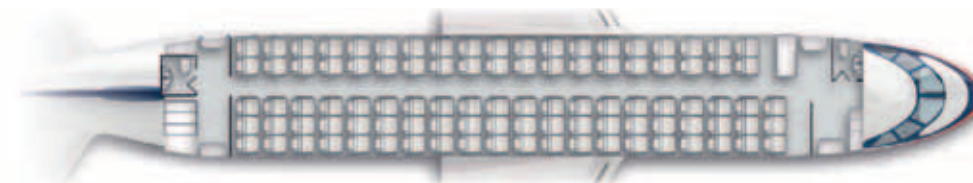
Easy access to overheads
 The SSJ100 offers more overhead baggage space per passenger than competing aircraft. The generous lockers are easily accessible – a useful feature if the operating environment prioritizes carry-on luggage, as this facilitates a swift turnaround.



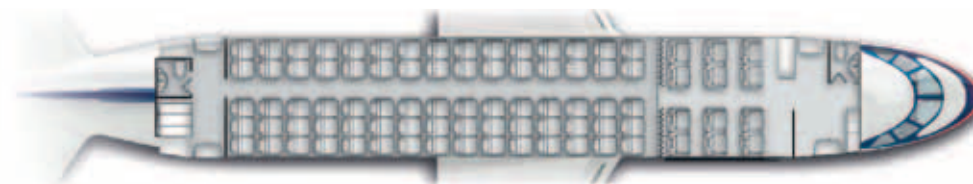
Pinfarina interior (optional)
 Leading design studio Pinfarina has created an exclusive interior for the SSJ100. The “Italian team”, comprising Alenia Aermacchi, Superjet International and Pinfarina, has developed the initial concept into a production reality, crafting a cabin for SSJ100 customers who want their aircraft really to stand out from the crowd – modern and elegant, yet at the same time functional and easy to maintain.

Configurations:

Standard single class



Standard dual class



Two fully equipped galleys are provided as standard; up to three additional ones can be fitted according to the customer specification.

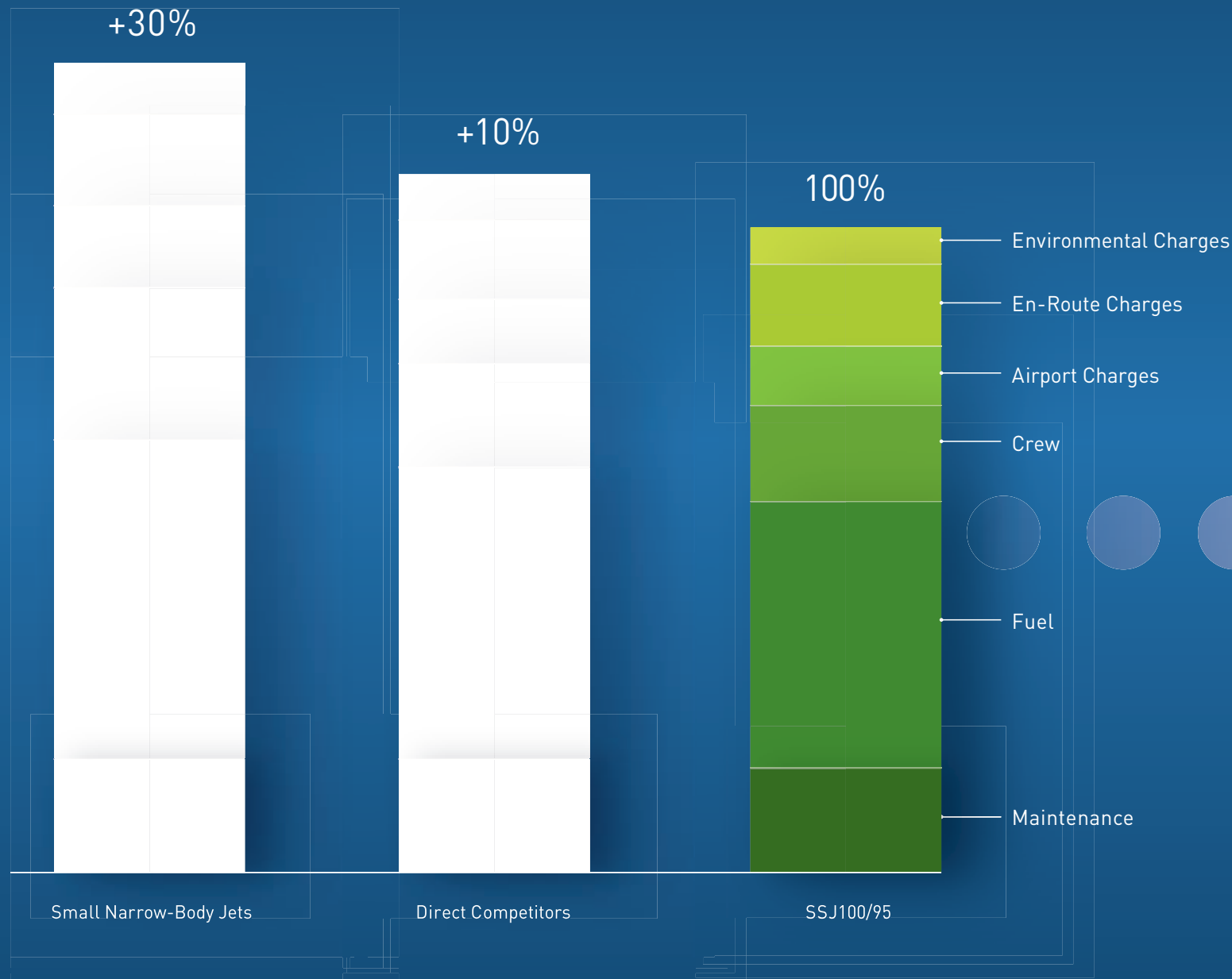
economics

- COSTS

Cutting the costs from design to operation. The clean-sheet design of the SSJ100 gives it an economic edge over its rivals, saving money in the air and on the ground

cash operating costs per trip (500 nm)

how we cut costs



reducing weight

The optimized lightweight design of the SSJ100 not only reduces fuel consumption, but cuts en-route charges and airport costs.

engine simplicity

The all-new SaM146 engine has fewer moving parts than its competitors, keeping weight down and simplifying maintenance. There is a high degree of left-right compatibility between the engines, significantly reducing inventory costs. The turbine disks can even be replaced without removing the engine – all features that reduce downtime and save operating costs.

fast turnaround

A spacious cabin with a wide aisle and generous seat spacing allows passengers to embark and deplane with minimum fuss. Two large cargo bay doors speed up baggage transfer, and single-point refuelling minimizes the time that the SSJ100 needs to spend on the ground between flights.

design to maintain

From the outset, the SSJ100 has been “designed to maintain”, with the longest maintenance intervals in its class. Inbuilt advanced diagnostic tools assist engineers with routine servicing.

lower fuel burn

The SSJ100’s advanced aerodynamic design, including a supercritical wing section specifically designed for this size of aircraft, results in optimized fuel burn in the cruise. Modern engines with latest-generation FADEC contribute to the SSJ100’s outstanding fuel efficiency.

lower carbon tax

Environmental concerns worldwide are leading to the introduction of carbon taxes and emissions trading schemes – however these are structured, the lightweight and efficient SSJ100 offers the maximum benefit to its operators.

“right-sizing”

The low operating costs of the SSJ100 make it perfect for operators looking to right-size their fleets to meet changing demands. The SSJ100 is also an ideal supplement to existing fleets, offering passenger comfort similar to that found on much larger aircraft.

performance

Ranging far and wide. Efficient engines in a lightweight airframe extend the range and increase the number of possible routes

max /cruise speed (mach)

0.81 / 0.78

time to climb to FL 300

12 min

range (B/LR)

1645 nm / 2470 nm



Away from the hub

The rugged SSJ100 is also well suited to short-field operations, and needs a runway width of only 21.4 m (70.21 ft) to turn round.

“Hot and high” performance

Due to its optimized combination of engine and airframe, which results in an excellent thrust-to-weight ratio, the SSJ100 is able to perform very well in extreme “hot and high” conditions.

Going places. The performance of the light and maneuverable SSJ100 and its ability to operate safely and efficiently from small regional airports brings high levels of comfort and sophistication to routes previously served only by more basic aircraft



— SSJ100/95 BASIC — SSJ100/95 LONG RANGE

environmental

greener

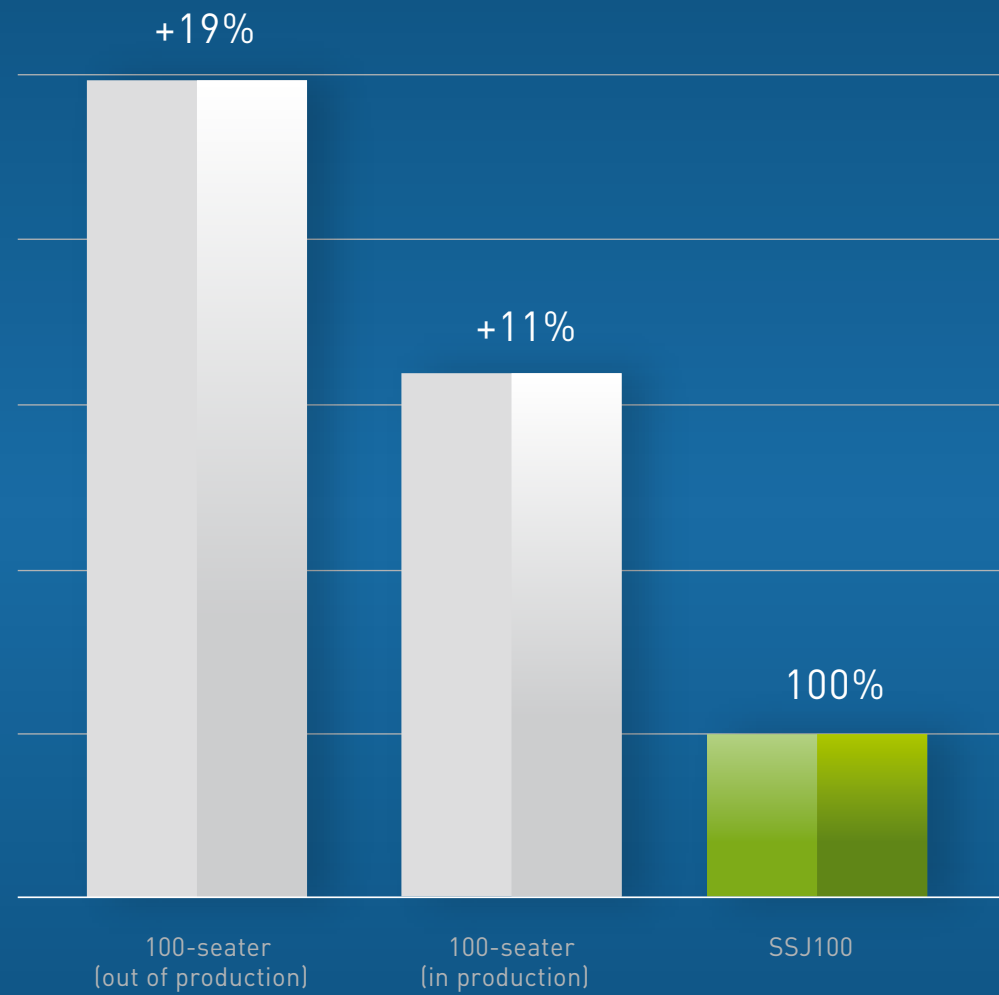
Flying green makes financial sense – saving money on fuel and saving tax on emissions

reducing environmental impact and saving around 600,000 USD per year*

all atmospheric emissions down

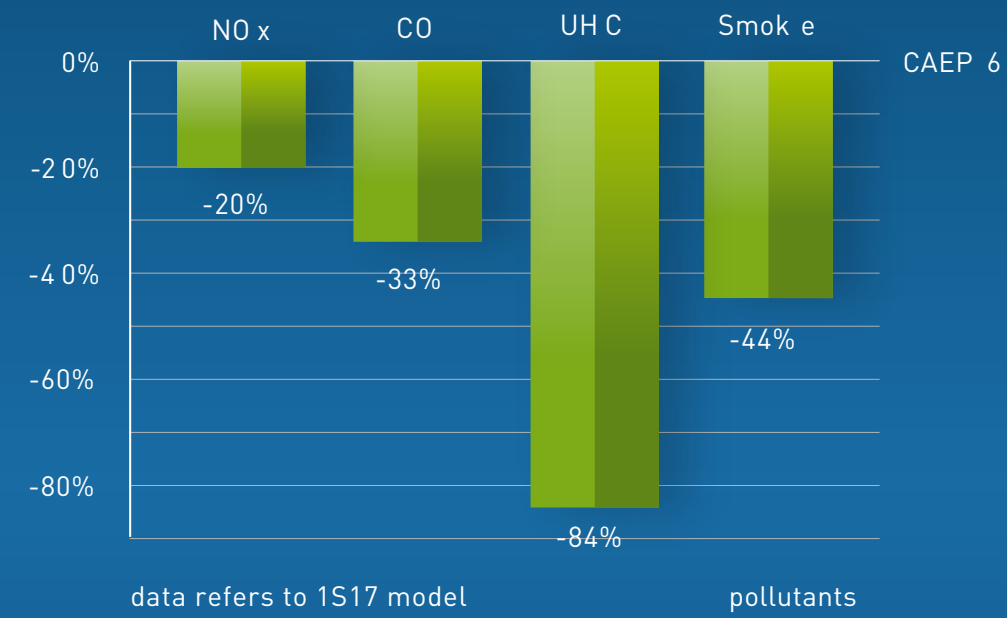
including noise

CO₂ / trip



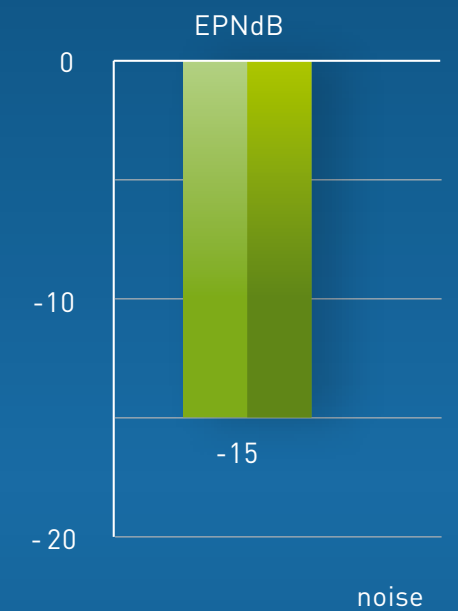
about 1.5 tons of CO₂ less per trip emitted compared to its direct competitor

SaM146 – Emissions vs CAEP 6



SaM146 : CAEP6 compliant with higher margins
CAEP6 applicable in 2008 to newly certified engines

EPNdB margins vs ICAO Annex 16



air quality

In terms of major air pollutants, the SSJ100 considerably exceeds ICAO CAEP6 standards. The SaM146 engine has been designed to meet anticipated emissions legislation, future-proofing operations of the SSJ100.

engine emissions

The powerful, compact SaM146 engine – controlled by the latest-generation FADEC system – combines a newly designed combustion chamber with a state-of-the-art high-pressure turbine, resulting in highly efficient fuel burn with emissions that comfortably exceed CAEP6 standards.

noise reduction

The high-tech long-duct nacelles carrying the SaM146 engines are designed to optimize acoustic performance, with the result that the SSJ100 meets ICAO Chapter 4 noise regulations – meaning that it is permitted to operate from any airport.

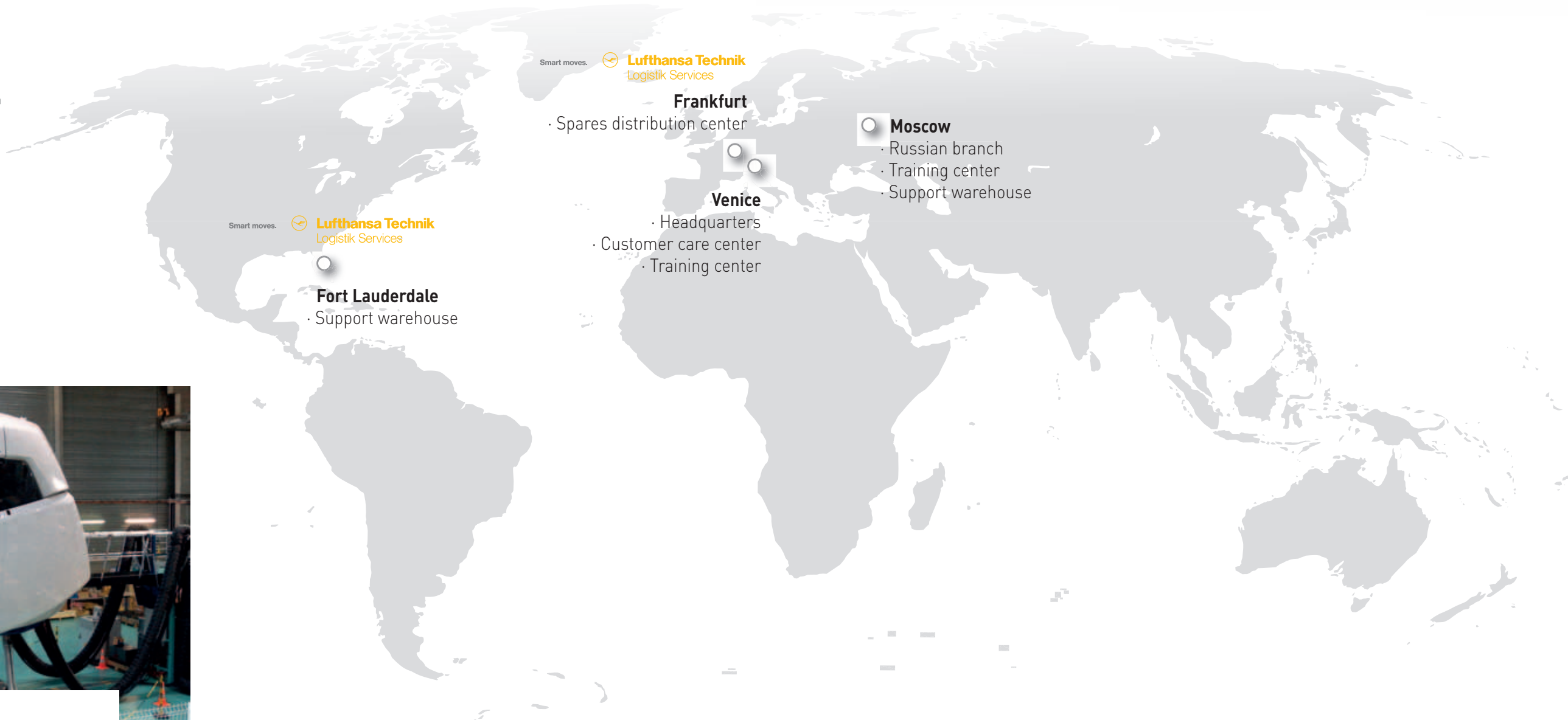
* 2500 cycles/year; 500 nm distance; CO₂ trade rate = 30 USD/ton; five-aircraft fleet

Supercare

Training services: Providing world class training for safe and profitable SSJ100 operations

Customer Support Solutions: Super-caring for the SSJ100 worldwide fleet

The SJI Training Center
Staffed by experienced international instructors and fully certified as a flight and maintenance organization by European and Russian Federation Authorities, the SJI Training Center provides, at its Venice (Italy) and Moscow (Russia) locations, a wide and flexible array of training courses to allow safe and profitable operations of the SSJ100. The Center is equipped with state-of-the-art training devices (FFS, FTDs, CEET, CBT stations and Virtual Aircraft tools).



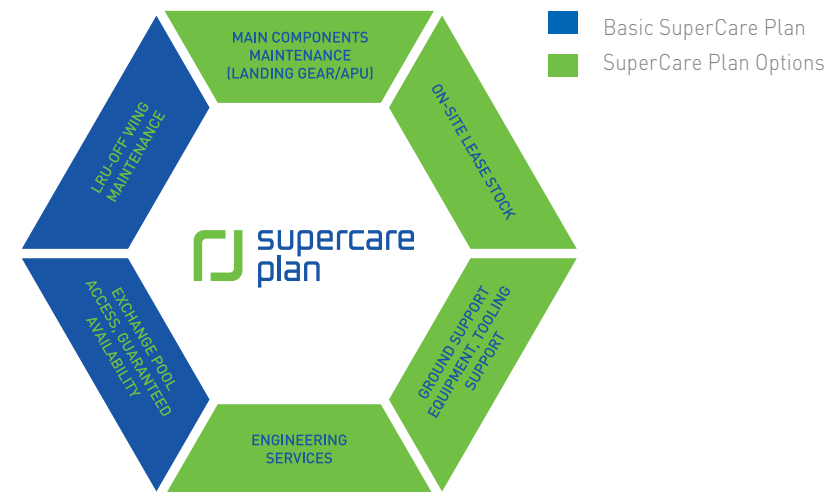
The main spares distribution center warehouse located in Frankfurt (FRA), managed by Lufthansa Technik Logistik (LTL) and equipped with state-of-the-art infrastructure, allows outstanding service levels for spares delivery. Other support warehouses, located at Moscow (SVO) and Miami (FLL), cover spare parts requirements for Russia/CIS and the Americas, respectively. Smooth SSJ100 operations are facilitated by a dedicated Customer Care Center which provides a 24/7 single point of contact for spares and technical queries.



Flexibility:
Always adapting
to customers'
needs



Customer support
SJI recognizes that customers must have a strategic choice for their support requirements and helps them to choose the best strategy for their evolving business. SJI has developed a modular and flexible array of services through a single turnkey agreement, called the "SuperCare Plan", which aims to maximize aircraft availability, optimize ownership cost, maintain asset value and ensure full budget control through predictable costs based on fixed rates per flight hour.



SSJ100 operators benefit from the global presence of the SJI MRO network for reliable and competitive line and base on-wing maintenance services. The full list of partners and locations is available on the SJI website: superjetinternational.com/customer-services/mro_network



ph. Mr. Gregor Schlaeger / LTL

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