NEW SUKHOI SUPERJET 100 B100 AIRCRAFT WILL BE POWERED BY HIGHER THRUST ENGINES

News / Manufacturer

A new member will join Sukhoi SuperJet 100 (SSJ 100) Family soon; it will be designated B100. Chief Designer of SSJ program Vladimir Lavrov told RIA Novosti at MAKS-2015 international airshow, that installing higher thrust engines (developed for long-range version of the jet) on the aircraft having the same takeoff weight allows customers to have more flexibility in terms of aircraft configuration. Optimization of its characteristics allows operating SSJ100 under conditions of high temperatures and high altitudes.

“The new model was developed in order to provide the jet with new capabilities required by customers in some regions. The major distinctive feature of SSJ100 B100 is the higher thrust SaM146-1S18 engine offered as an option for the liner having the basic range. The takeoff thrust was increased thanks to adjustments made to the engine’s software developed by Russian-French joint venture PowerJet,” the Chief Designer said.

Sukhoi Civil Aircraft Company (SCAC) is gradually expanding its product line, and in addition to the two existing members of SSJ100 Family having different takeoff weight and range, it is going to offer a third model to its customers; the new model has the basic takeoff weight and improved

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takeoff performance.

According to Lavrov, the technical solutions used for development of the new model may become a deciding factor for BRICS countries, because an opportunity to increase payload while operating the aircraft from airfields located in mountainous regions is of great importance to them.

“First of all, this refers to South and Central Africa, where many airports are located in mountainous regions. India and China are of interest for us, because these countries have high passenger traffic and many airports are located in mountainous regions too. Average height of these airports is over 1500 meters above the sea level; that is why they need a liner with relatively low takeoff weight and high thrust engines. Moreover, the new vehicle will be in demand in countries with hot and humid climate. Taking into account the performance of SSJ100 B100, it may also meet the requirements of European carriers, which have many airports with short runways in their route network,” Lavrov noted.

At present SCAC is completing certification of the new model in accordance with requirements of the Aviation Registry of the Interstate Aviation Committee (AR IAC). It is expected that the type certificate issued by AR IAC will be validated by EASA in 2015.

Technical specifications of SSJ100 B100 are as follows: range — 3048 km, maximum takeoff weight — 45 880 kg, takeoff thrust — 71,6 kgf, takeoff distance is 10% shorter compared to the basic version.

Since 2017 a new wingtips will be offered as an option for all SSJ100 airliners; the wingtips will improve the jet’s performance and fuel efficiency.

“We have done a great job in the area of wingtips’ design optimization, including calculations and testing carried out using wind tunnels of TsAGI and SibNIA. Several variants having vertical or horizontal configuration were considered. The work took around one and a half years. A junction between the wing and the wingtip has been designed as well as the composite wingtip itself. At present a manufacturer is being chosen; probably one of the Russian enterprises involved in SSJ100 program will start the mass production of these wingtips. The wingtips will be offered as an option since 2017,” Lavrov said.

According to him, the wingtips will deliver up to 4% in fuel savings. Moreover, the optimized wingtips should improve the takeoff and landing performance. Business and long-range versions of SSJ100 liner will also be fitted with the wingtips.

In order to assure continuous and sustainable production of aircraft and successful implementation of programs for development of high-tech enterprises we must start manufacturing the engine’s components in Russia.

“I think that the best protection against the sanctions, which may affect the production of SSJ100 aircraft, is the fact that major components of the liner were developed by the leading European companies. Moreover, SSJ100 is the civil project. It is not and will not be connected with any military programs or defense enterprises,” Lavrov added.

According to him, this refers to production of certain aircraft systems and components in Russia. “There are two ways: the first one is the easiest and the quickest, but it requires significant funding. I am talking about purchasing licenses. The second variant is more complicated, but it needs less funding – forming an alliance with the manufacturer”.

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“Our aircraft is in fact the open “window to Europe”, even after the sanctions have been imposed. The most promising road for Russian manufacturers of aircraft components to world’s leading suppliers as their partners and sub-contractors is through the SSJ100 project,” he noted.

After starting production of SSJ components in Russia, the national companies will be able to develop it and become suppliers for both Russian and foreign aircraft manufacturers. There are a lot of positive examples, including the ones related to SSJ program.

“Starting production of some components in Russia is mutually beneficial. This will create new jobs and give an impulse to development of indigenous technologies,” the Chief Designer added.

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