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## A 'Shark' in the Clouds

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Fly-Fan chose ThinkDesign to design the 'Shark', the most comfortable twin-prop aircraft in its class

Fly-Fan Aircraft, based in the Slovak Republic, specialises in the design and production of model aeroplanes. Founded in 1990, the company has long experience in the production of model planes made from Kevlar, carbon fibre and fibreglass. In 1993 it started exporting to Germany and today markets its products in USA, Iceland, Japan, Switzerland and other European countries.

In 2001 the company started producing 1:3 scale models with a wingspan of three metres and a weight of 20 kg. Models were powered by diesel engines with power ratings up to 15 HP.



In the summer of 2005, company founder and engineer František Šustek wanted to realise an idea he had nursed since his student days at university – 'to build a plane'. No, not a model, but the real thing. An unique aircraft designed to be a market beater for design, weight and passenger carrying capacity.

"For six months I researched the market to identify the segment where I could best position the new model. At the same time I went looking for CAD software where I could design the entire project in 3D", said Šustek, an engineer with decades of experience in aviation. "It wasn't an easy job because there were a lot of plane makers on the market and even more suppliers of CAD software. In the end I decided on the twin-engined category of aircraft and chose think3's CAD solution, ThinkDesign".

The new aircraft is called 'Shark' because its design brings to mind the shape of a shark. It is a twin-engined, 5-seater (pilot and four passengers) aimed at various markets. Ideal as a trainer or air taxi, it is also suitable for search and rescue services and makes a good private plane. The Shark is built from composite materials and powered by two powerful Textron Lycoming O320 series engines producing 160HP (120kW).

"Shark is the first real aeroplane from Fly-Fan. Previously we focussed primarily on model aircraft", points out Šustek. "Shark is one of the safest aircraft in the world. In its category it has the slowest take-off and landing speed; stall speed is just 98 km/h or 54 knots. It is also the most comfortable with a wide cabin (up to 140 cm), extra large windscreen and side windows and doors which at 120 cm are among the widest in this class. The constant speed MT12 propellers ensure maximum cruising efficiency. The aircraft has a large load bearing capacity with room for skis, bikes and even a motorcycle."

Fly-Fan used ThinkDesign to design the Shark. This CAD solution from think3 enabled optimum management of all steps in the modification of the cell. Starting out from the initial draft, the designers passed on to the single parts of the plane working in ever increasing levels of detail to produce dozens of files and hundreds of drawings. Fly-Fan was able to benefit from the Global Shape Modelling technology of think3.

GSM is still the only tool for creating and modifying designs which enables rapid changes of great accuracy and precision in any stage throughout the design process. This accelerates interaction without limiting creativity and without the need to continuously rebuild models.

"The support provided by think3 was very important", explains Šustek. Even though the think3 multinational was not on site at Fly-Fan offices in Slovakia it was able to offer constant assistance through Weblearning services and Customer Care remote tutorials and learning. Interactive online training sessions, participation in real time demonstrations, on-line question and answer sessions with experts and the possibility of experimenting immediately with the model were all factors ensuring that ThinkDesign was quick and easy to

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learn. These factors also meant that high levels of productivity could be maintained.  
The Shark project was completed in few months and today is protected by a Fly-Fan patent throughout the European Union.

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