EXPOSITION SpectroSib

«СпектроСиб»

Russia, Irkutsk

Summary

1. **Volume of investments required – $ 1200 thousand.**
2. **Production:**
   - market sector – aviation and aircraft engine construction, exploitation of aircraft;
   - marketable produce – scintillation spectral complex; technologies for estimation of technical state of aircraft engines, machines and mechanisms.
3. **Trade marks** – none.

Company profile

Date of establishment – August19, 2005. In 1999 a research team from the Scientific and Research Institute of applied physics at the Irkutsk State Technical University established the "Diagnostic Technologies" Ltd. ("DT" Ltd.) based on the laboratory of low-temperature plasma. The organization was created for development of express analysis method of auriferous powder ore samples. The developed principles and technologies underlined to the method of diagnostics of oil systems of aircraft engines by results of measurement of parameters of deterioration particles with the scintillation method.

In 2005 "DT" Ltd. won the contest of innovative projects, organized by The Foundation for assistance to small innovative enterprises (FASIE). At the same year under terms of the government contract with the FASIE a new company was established – "SpectroSib" Ltd. The leading researches of "DT" formed the team of the "SpectroSib". The team attended to development and appliance of a scintillation complex in the sphere of the surface diagnostic of aircraft engines.

Signs of public recognition –First Prize of the Governor of the Irkutsk Region (2005); Third Place and diploma of The Foundation for assistance to small innovative enterprises (2005); First Prize for the best innovative project in the municipal contest of innovative projects of Irkutsk (2006); First Place and the First Prize in the contest of innovative projects of the venture entrepreneurship coaching-network of the Federal Siberian District (2007).

Number of employees – 5 persons (regular staff), 8 persons temporarily.

Team

***Drokov Victor* –** Head of the organization, 60 y.o. PhD, experience in negotiations with the leaders of largest aviation enterprises. Ability to defend his point of view and convince the opponents of the truth of his statements. Such qualities allowed to get investments for R&D works and save the core of the team in the post-reformation times.

***Podrezov Alexei* –** Deputy Director, 62 y.o. Economist, lawyer. More than 30 years at managing positions at large aviation enterprises. Recently has been working at the Federal National Unitary Enterprise "Airport-Irkutsk" as a financial director.

***Drokov Vladislav* –** Deputy Director, 36 y.o. PhD, economist. From 1993 to 2003 – surgeon, from 2003 – entrepreneur (working business – a system of student canteens). From 2006 – vice-dean for finance and director of the laboratory of innovative technologies of the Irkutsk State University.

Products characteristics

"SpectroSib" Ltd. established, certificated and approved the laboratory sample of revolutionary new diagnostic equipment for aircraft engine building – scintillation spectrometric oil analyzer. The production protected by 11 Russian patents and 1 Euro-patent.

The scintillation oil analyzer allows to measure and consider up to 11 different parameters for 8 elements (Al, Cr, Ni, Mg, Fe, Cu, Ag, Va). At present time no device, using in diagnostic of aircraft engines, is able to make such analyze.

In this connection we started and successfully finished the development of diagnostic technology of aircraft engine D-30KP/KU-154. Effectiveness of the developed technology made up 97%. The cost of the spectrometer is about $ 100 ths (cost of its analogues from $ 30 ths to $ 600 ths). The price of diagnostic is $ 200 for 1 engine (the price comparable with the analogues).

Competitors in Russia:

The present equipment of aviation diagnostic technologies according to facts of JSC "NPO Saturn" detect maximum 11% of aircraft engines D/30KP/KU/KU-154 with defected oil system.

According to information of JSC "Aviadvigatel" the control of content of metal and copper with the use of spectral methods for detecting the damages of bearings of high pressure turbine in engine PS-90A has no effect.

The statistics of JSC "NPO Saturn" testify that in engines, taken off before the appointed time because of defected roller bearings, in 12% of cases these defect were not proved. The main method of diagnostic of tribotechnical systems of aircraft engines is the visual control for borings availability (deterioration particles) on magnetic plugs, magnetic borings signaling devices, filters-signaling devices, etc.

Current state

A sample scintillation spectrometer testing unit has been built with the financial help of JSC "NPO Saturn". The diagnostic technology of aircraft engines D-30KP/KU/KU-154 (airplanes TU-154, IL-76, Il-62) is developed. The diagnostic technology of aircraft engines PS-90A has been developing (airplanes IL-76, TU-204, TU-214, IL-96). The develop-

ment of diagnostic technology of aircraft engine D-18T and hydro complex An-124 “Ruslan” has been started. In September 2007 we are planning to turn to the second stage and maintain the business plan for the government contract conclusion with the FASIE.

Development strategy

Use of funds

1. Acquisition of fixed assets (manufacture series of scintillation spectrometers for establishment of Diagnostic centers) 77%
2. Marketing 3%
3. Acquisition of current assets 20%

Prospective outcome of investment

Manufacturing small series of spectrometers for establishment of Diagnostic centers for technical estimation of aircraft engines (5 items).

Marketing & Markets

The market of a product is defined by quantity of aircraft engines. The diagnostic technology accomplished by the spectrometer is created or being created for these engines. There are 2800 engines in the Russian Federation and in the countries of near and far abroad. Market size estimates in $ 896 ths. The potential clients of diagnostics services of aircraft engines are all airlines of Russia and the CIS countries which maintain the planes with aircraft engines of type PS-90A, D-18T and D-30KP-KU-KU-154. “SpectroSib” Ltd. diagnoses 96% of defected engines. It is planned to hold not less than 90% of the market.

The “SpectroSib” has principal arrangements and agreements with the largest creators and producers of the engines about the documentation release, binding the airlines to turn to the new diagnostic method.

Diagnostic capabilities of scintillation spectrometer in aviation: gas-air flow duct of an engine, fuel system, reverse device, hydro systems, any units and mechanisms, lubricated by the technical liquids.

The scintillation spectrometer can be used for diagnostic of oil systems of any engines, machines and mechanisms in the following spheres: air force, gas- and oil compressors units and gas turbine plants, navy, marine, inland water transport, atomic energetics, railways, enterprises mining and processing noble metals.

Interaction with investor

49% shares of the company will be offered to the investor. Pay-back period of the project is 5 years. The time for spectrometers manufacture and establishment of the Centers will take 1.5 years. Commercial activities for services will take 3.5 years. Investor can take part in the company’s activity as a member of the staff, and as a controlling unit. In case of unsuccessful realization of the project (not full or no realization) there is the possibility for the investor to return invested resources by the sell of spectrometers.

The SpectroSib Ltd. has requests on manufacturing and selling spectrometers from 6 organizations: Aeroflot airlines, Federal National Unitary Enterprise “Klimov Enterprise” (Moscow), “Krasair” airlines, “S7” airlines (Novosibirsk), Voronezh aircraft constructional association, “Dal’avia” airlines.