# UAE's TALEX in talks with banks for working capital facility

UAE Taweelah Aluminium Extrusion Co, an aluminium producer, is in talks with local and international banks for a working capital facility, Stylianos Tsoktouridis, General Manager of TALEX was quoted in a report.

TALEX, a greenfield project, has been in operation for just under a year. It owns and manages a 50,000 tonne aluminium extrusion plant in Abu Dhabi's Khalifa Industrial Zone.international banks for a working capital facility, Stylianos Tsoktouridis, General Manager of TALEX was quoted in a report.

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A source familiar with the discussions said that the company is in talks with banks for a loan expected to be in the region of around USD 150 million.

The source said that the loan would replace a bridge financing which the company raised in 2014 and which matures this summer. The banking group backing the loan included Abu Dhabi and Dubai-based lenders.

TALEX is a joint venture between Abu Dhabi's Senaat and Dubai's Al Ghurair Group. Senaat is a state-owned investor in the emirate's industrial sector, while Al Ghurair Group is a diversified family-owned conglomerate with interests in manufacturing, real estate and finance.

# Thales Alenia Space takes 3D printed parts into orbit

Over the past two years, satellites built by Thales Alenia Space have taken over 400 3D-printed metallic and polymer parts into orbit. With the recent launches of the Telkom 3S, SGDC and KOREASAT-7 satellites, plus satellites in the Iridium Next constellation, Thales Alenia Space says it has now sent into orbit 79 metal parts made by additive manufacturing (3D printing) and 350 polymer tube supports for chemical propulsion systems.

Out of the total of 79 parts, 47 have different designs, carrying out 13 different functions. The tube supports are all identical, with 35 used on each of the ten satellites launched to date.

The company sent its first 3D-printed aluminium antenna support into orbit on the TurkmenAlem MonacoSat satellite in April 2015. Since then, all of the company's telecommunications satellites feature lightweight 3D-printed antenna supports and reflector fittings.

In mid-January 2017, with the successful launch of the first Iridium NEXT satellites, Thales Alenia Space also sent into orbit satellites with propulsion system tube supports, the first flight application of thermoplastic additive manufacturing.

The next step for Thales Alenia Space will be the manufacture of larger and larger parts using this process, such as dual antenna supports for a new telecom satellite to be launched shortly. These parts measure 480 x 378 x 364 mm, a real challenge from the manufacturing standpoint.

The benefits of additive manufacturing are well known replacement of several parts with a single piece structure, leading to reductions in weight, along with cost savings. Additive manufacturing also means greater design freedom and the absence of tooling, which makes it the perfect technology for complex parts with curves, holes or cavities that are produced in small runs or on a one-off basis.

Thales Alenia Space generally focuses on metallic materials for this process, including aluminium and titanium. The most commonly used technique is laser beam melting with a bed of metallic powder.

# Researcher demonstrates protype of two stroke engine

3D Printing Industry Valentin Stamate, a researcher at the Transilvania University of Braov Romania, has demonstrated a prototype two stroke engine, 3D printed in 3 different metals. Stamate believes the 3D printed engine to be the first of its kind in the world, and hopes that the production method serves to pave the way for larger 3D printed engines.

The engine is capable of achieving 10,000 revolutions per minute and is cooled by an electric motor. At 10 cubic centimeters, the engine would be able capable of propelling small model planes or, if scaled correctly, ultralight aircraft.

Non 3D printed components consist of the propeller, the cone at the nose, bearings, screws, nuts, the spark plug, and the visible plastic tubes and fuel container. Outside of these, the 3D printed components can be broken down into three categories, depending upon the material they are made from.

Aluminium powder was melted to make the engine block, cylinder head and piston. The crankshaft, and the distributor inside the carburettor were both 3D printed using steel powder. And finally, the cylinder sleeve, engine block enclosure, exhaust muffler, motion transmission bar, and the remaining carburettor are made from bronze-impregnated steel powder.