

[SKYLON SPACEPLANE]

Skylon, the UK's innovative spaceplane design, is now a contender as a future European launch vehicle. It would take off and land using a traditional airport runway with the ability to carry over 12 tonnes into orbit.

"Skylon is unique because of the type of engine it uses," says Reaction Engines' managing director Alan Bond, "and with the help of BNSC and private investment we're able to develop the technology."

Reaction Engines, the Oxfordshire-based company behind the project, received a welcome cash boost of 1 million Euros from ESA's technology and development programmes in February 2009. This money will be invested in developing the engine's high performance heat exchangers and other critical engine technologies.

These heat exchangers are essential because Skylon's engines use existing jet and rocket engine technology to utilise air as part of the propulsion system.

"That air is at five times the speed of sound and 1,000 °C when it enters the engine – and that



Artist image of Skylon in orbit
Credit: Reaction Engines

is too hot," explains Bond. "We have to use the hydrogen fuel to cool the air and that has to be done through a heat exchanger."

The reusable launcher has enormous potential in the space science market. Skylon, with its unpiloted sleek design and Sabre air-breathing rocket engines, would provide a new approach to access to space compared with today's costly launches.

"It's really taking conventional technology and putting it together in a different way," explains Bond. "It's technology that's a few years away – not a couple of decades."

by SEA has won a €500,000 contract for ESA's Aurora programme to define the requirements for a Martian Sampling Receiving Facility. The facility must protect terrestrial life from any potential risk

posed by the samples, while preserving their scientific content. A parallel activity at the National History Museum, funded by STFC, will examine potential methods for sterilising the extra-planetary material.