

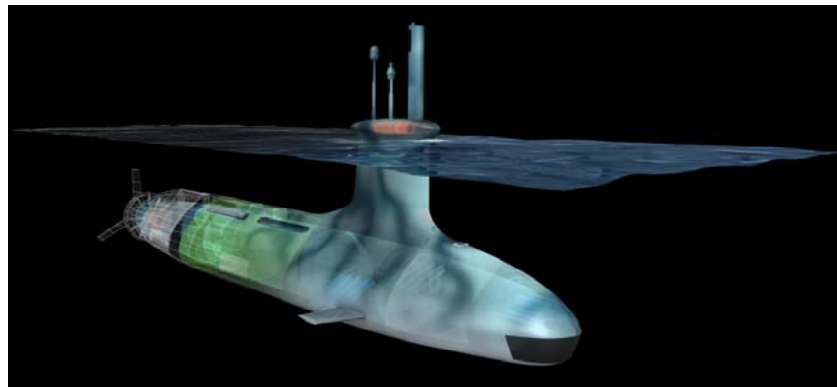
SSGT - “...outstanding mobility sets it apart”

The challenge

To deliver a concept for a non-nuclear submarine that has impressive mobility in terms of range, speed and endurance while in transit or on station.

Our response

The Ship Submersible Gas Turbine (SSGT) concept was developed by BMT Defence Services in consultation with Rolls-Royce. An innovative propulsion design gives this submarine a performance that comfortably surpasses the capabilities of present SSKs.

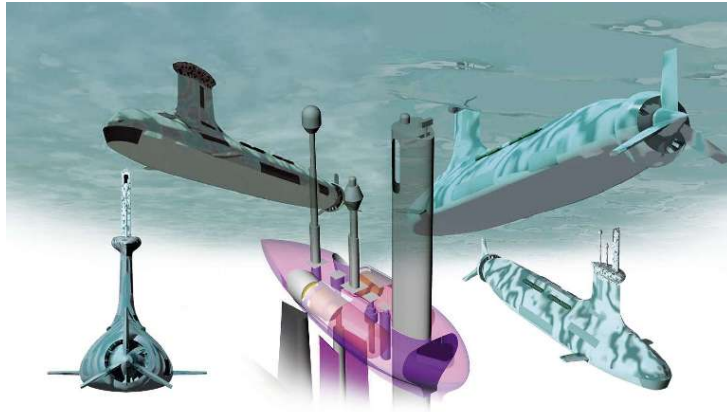


When the twin, independent gas turbine sets, housed in the ‘bulb’ on top of the fin are activated in the fast transit mode, the SSGT functions as a semi-submersible with the bulb breaking the surface. The gas turbines burn kerosene with air inducted through an extendable mast. The hull form is optimised to minimise surface wave making without compromising submerged performance.

If quieter, more covert transit is required, then fuel cell stacks provide ship’s services and propulsion power in this mode of operation. The stacks take atmospheric air via a snort mask and react it with hydrogen obtained by reforming kerosene carried in external fuel bags and mounted under each casing.

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In tactical situations, the fuel cells can be utilised in fully Air Independent Propulsion (AIP) mode with hydrogen from reformed kerosene reacting with the liquid oxygen from outboard tanks. Impressive sprints of up to 30 knots are possible with power drawn from the large advanced ZEBRA battery.



Customer benefits

The SSGT concept skilfully combines several desirable operational characteristics. The vessel complies with all known environmental requirements and a cost-effective operation is achieved through fully integrated systems and an all-electric architecture.

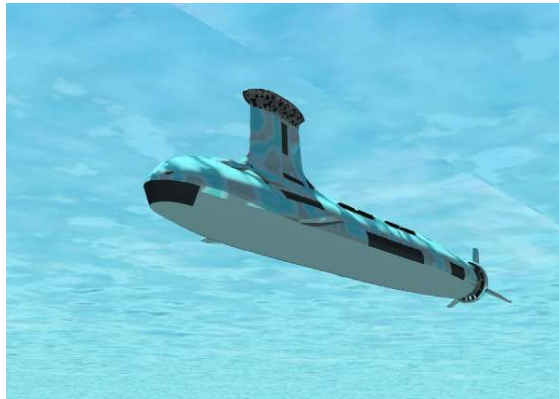
In addition, the platform can fully accommodate high capacity communication and combat suites together with advanced signature management features. An impressive choice of mission profiles is offered through a flexible mix of vertical and horizontal weapon discharge tubes and UUV stowage and sufficient energy is stored to operate these systems effectively.

But it is the outstanding mobility that sets the SSGT concept apart. It can:

- sustain transits at 20 knots for many thousands of miles;
- maintain fully covert mobility on station for at least 25 days whilst operating a high capability combat suite;
- achieve high speed sprints of up to 30 knots to gain tactical advantage;

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- move quietly and stealthily when dived.



The SSGT concept confirms BMT's status as a truly independent centre of excellence for naval design.