

“Where will our knowledge take you?”

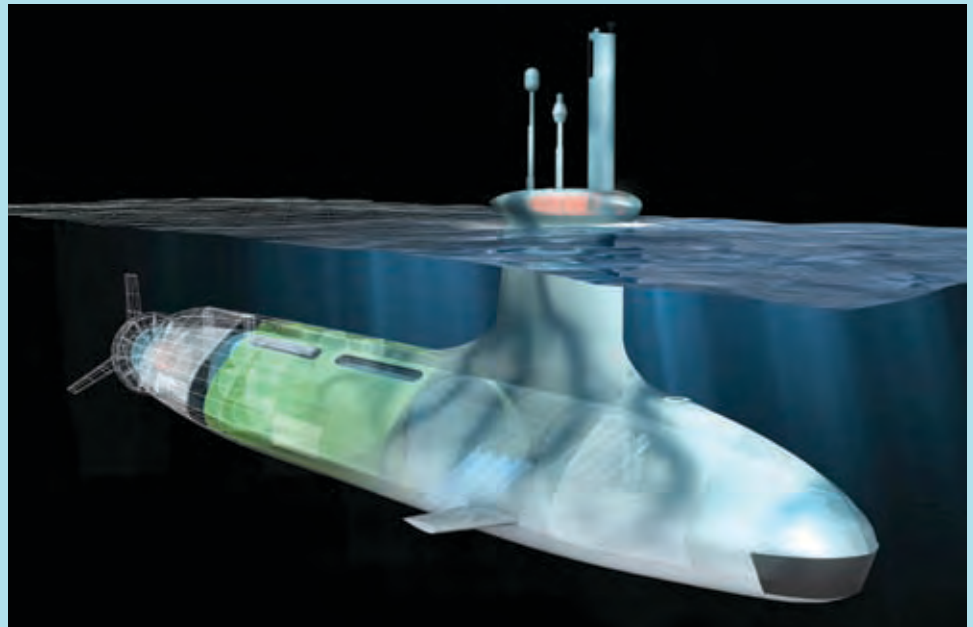
SSGT high mobility submarine

The SSGT concept, developed by BMT Defence Services Ltd in consultation with Rolls-Royce, represents a family of non-nuclear submarines able to approach the mobility of SSNs whilst retaining the advantages of the SSK.

SSGT has mobility (range, speed and endurance) when in transit and on station wholly beyond the capabilities of current and forthcoming SSKs, including:

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

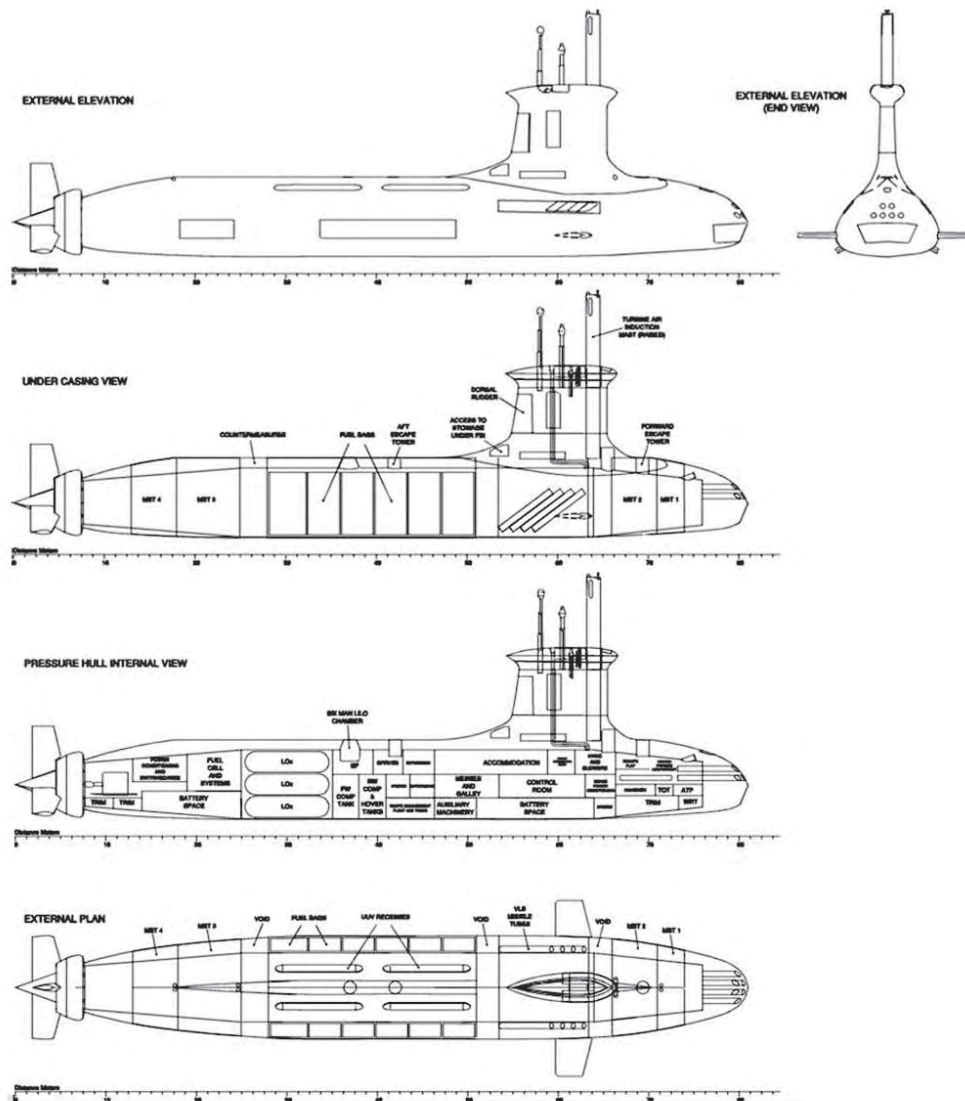
The high speed, long endurance transit capability is made possible by an innovative propulsion design, which uses twin, independent gas turbine - alternator sets, housed in the 'bulb' on top of the fin. When operating in the fast transit mode, the boat operates as a semi-submersible with the bulb positioned above the surface. These gas turbines burn kerosene (AVTUR/AVCAT) with air inducted through an extendable mast. The hull form selected minimises surface wave making in this mode without compromising submerged performance.



For more covert but slower transit requirements, fuel cell stacks provide ship's services and propulsion power. The stacks take atmospheric air via a snort mast and react it with hydrogen obtained by reforming kerosene, which is carried in external fuel bags mounted under the casing.

On station, the SSGT continues to stretch its legs. Covert tactical mobility is achieved using the fuel cells in fully Air Independent Propulsion (AIP) mode. Hydrogen from reformed kerosene is reacted with liquid oxygen from onboard tanks. Sprints at up to 30 knots are provided by power drawn from a large advanced Zebra battery. The battery also acts as a load leveler during operation of the fuel cells or the gas turbines.

The SSGT packs an impressive punch. The platform can accommodate high capability communications and combat suites together with advanced signature management features. The SSGT offers a flexible mix of vertical and horizontal weapon discharge tubes and UUV stowage able to satisfy a range of mission profiles. Sufficient energy is stored to operate these systems effectively. Highly automated, with an all-electric architecture, the vessel's systems are fully integrated to achieve capable and cost-effective operation. The vessel will comply with known future environmental requirements.



Principal Characteristics

Length overall	80.8m
Maximum beam	11.4m
Diameter of Pressure Hull	7.6m
Submerged Displacement [minimum, end of mission]	4,195t [3,570t]
Surfaced Displacement [minimum, end of mission]	3,700t [3,075t]
Complement	25

Mobility

- Maximum Sprint Speed [Submerged on Battery] 30 knots
- High Speed Transit 20 knots [Semi-Submerged on Gas Turbine(s)]
- Standard Transit 10 knots [Snorting on Fuel Cells with reformed Kerosene]
- Maximum Continuous AIP Speed 10 knots [Fuel Cells with reformed Kerosene/LOx]

- Maximum Transit Range: > 6,000 nmiles at 20 knots and 13,000 nmiles at 10 knots.
- Typical Mission – 2500nm transit out at 20 knots, 28 days AIP on task at 5 knots, return to base at 10 knots. Stores endurance 60 days.

Payload

- Radar, ESM and Extensive Communications
- Advanced Combat Management System – Conformal bow flank and fin arrays
- 6 x 21" torpedo tubes with 12 heavyweight or equivalent weapons
- 8 x VLS Tubes for heavyweight weapons
- Accommodation for 12 x Special Forces personnel
- 6 man Lock-in / Lock-out Chamber
- Provision for 40t/80m³ of SF stores under casing and in pressure hull
- 4 x Large UUVs (some able to serve as SDVs)
- 16 x Countermeasures tubes