

Brazil to join nuclear-powered sub club

Within a decade Brazil could become just the seventh nation with a nuclear-powered submarine, the culmination of an \$8.9bn programme that includes five attack submersibles built with French technology

Riachuelo (S40): First of four modified versions of Scorpène class diesel-powered submarine, built by Brazilian Navy to design of French shipbuilder Naval Group

Length: 71.6m
Displacement: 1,870 tonnes
Speed: 20 knots (37km/h)
Diving depth: 350m
Endurance: Up to 45 days

Riachuelo: Begins sea trials 2019

Humaitá (S41)

Tonelero (S42)

Angostura (S43)

All four to be in service by 2023

SN Álvaro Alberto (SN-10)
Launch date: 2029 (est.)

Length: 100m
Hull diameter: 9.8m
Displacement: 6,000 tonnes
Speed: 27 knots (50km/h)
Diving depth: 350m
Crew: 100

Pressurised water reactor (PWR):
Developed in Brazil.
50MW

Armament:
Heavyweight torpedoes or Exocet missiles

Coolant outlet

Fuel assembly

Reactor vessel

Control rods

Coolant inlet



BRAZIL
Itaguai

ATLANTIC OCEAN

Submarines will patrol Brazil's 3.5m sq-km off-shore deep waters containing vast oil and gas reserves