

# Climbing the ladder: Brazil's PROSUB submarine programme

[Content preview – Subscribe to Jane's Defence Weekly for full article]

**The PROSUB programme is ultimately intended to realise Brazil's ambition to build an indigenous nuclear-powered submarine, as *Richard Scott* reports**

On 14 December last year Brazil's new submarine, *Riachuelo* (S40), was lowered into the water on the shiplift at the Itaguaí Naval Complex, 70 km west of Rio de Janeiro, during an official launch ceremony attended by then President Michel Temer and President-elect Jair Bolsonaro.

The boat, designed by France's Naval Group and built by joint venture Itaguaí Construções Navais (ICN), is now undergoing test and commissioning activities alongside before beginning sea trials in the third quarter of this year. Handover to the Brazilian Navy (Marinha do Brasil: MB) is planned to follow in 2020.



*Riachuelo* pictured after launch. Sea trials are planned to begin during the third quarter of this year. (Richard Scott/NAVYPIX)

1743714

*Riachuelo* is the first of four modified Scorpène (S-BR) diesel-electric submarines being built for the MB under the auspices of the PROSUB (Programa de Desenvolvimento de

Submarinos) programme. Their construction, outfitting, integration, test, and commissioning in-country involve a huge infrastructure development in Itaguaí – including the construction of a new shipyard and naval base (Estaleiro e Base Naval: EBN) – and a large-scale transfer of technology into the Brazilian Navy and local industry.

Beyond this the ultimate objective of the PROSUB project is to endow Brazil with the technical and industrial capability to build its first nuclear-powered submarine (SN-BR). To this end Naval Group is providing the Brazilian Navy with design assistance for the non-nuclear elements of the boat.

## **Rationale**

Brazil's acquisition of new submarines under the PROSUB programme is not predicated on any specific external threat or risk. Rather, successive governments have justified the programme on the basis of the need to protect the territory, sea lanes, and resources of the country's 3.5 million km<sup>2</sup> offshore zone: the 'Blue Amazon'.

The PROSUB project is managed by the General Co-ordination of the Nuclear-Powered Submarine Development Programme (COGESN). Subordinate to the General Directorate of Nuclear and Technological Development of the Navy (DGDNTM), COGESN is responsible for managing all design, development, and construction activities. In doing so it oversees contractual arrangements and the development of national technical and industrial capabilities.

Having begun negotiations in 2008, Naval Group (formerly DCNS) signed detailed contracts for the PROSUB programme in September 2009 that built on a strategic defence co-operation agreement signed by France and Brazil the previous December. "The main trigger in this contract is transfer of technology," said Eric Berthelot, chairman of Naval Group Brazil. "That concerns the infrastructure, built by our partner Odebrecht, and transfer of technology in terms of [submarine] production, systems, and design information of the non-nuclear aspects of the SN-BR."

The Naval Group Brazil subsidiary operates from three sites. Its Rio de Janeiro office, close to the naval base and navy command headquarters, supports PROSUB and surface ship business; in Itaguaí, through ICN, it delivers technical assistance for the transfer of technology, as well as 'front office' functions; and an operation in São Paulo supports the navy's CTMSP (Centro Tecnológico da Marinha em São Paulo) technology development establishment.

Delivery of PROSUB involves a range of activities and a complex cluster of contracts, according to Anne Bianchi, Naval Group's director of submarine programmes in Brazil. "We have three aspects to this programme," she said, "First, the construction of the shipyard and naval base in Itaguaí; second, the conventional submarine programme; and third, the nuclear submarine, which is being designed by the Brazilian Navy [but for which] Naval Group is supplying technical assistance for all parts except the nuclear reactor."

“It’s not one contract, but rather a cloud of contracts,” she added. “There are many stakeholders. We have the Brazilian Navy in the centre, who are managing the whole programme, and the industrial organisation around it.”

For its part Naval Group has five separate contract lines, with a total value of about EUR7 billion (USD7.9 billion). “The big one is for the transfer of technology contract [and] covers the three aspects of the shipyard, the conventional submarine, and the nuclear submarine,” explained Bianchi. “For the shipyard Naval Group did the basic design and is participating in all the steps of the construction. We have validated the design and we are commissioning all the installations of the shipyard.”

Turning to the conventional submarine, she noted, “We delivered a technical data package [containing] all the drawings [and] all the construction processes to build the submarine. And we also have a resident team in it from Naval Group who are teaching shipyard personnel the build process.” Moreover, Bianchi said, “We also have, as part of this contract, the transfer of technology for the nuclear submarine.”

A second contract, meanwhile, covers ‘offset and nationalisation’ to address Brazil’s requirements for local content, while a third contract covers the material packages for the S-BR build programme. “We will also have a contract in the future for the material package for the nuclear submarine,” Bianchi added.

The fifth and final contract covers the supply of weapons and effectors for the PROSUB programme, which comprise F21 heavyweight torpedoes and CANTO acoustic countermeasures.

ICN, a joint venture of Odebrecht and Naval Group, is contracted separately for submarine construction activities. Naval Group is responsible for operational control of the joint venture and, although ICN is owned 59% by Odebrecht, “it is the French partner that holds the majority control by voting rights”, said Bianchi, adding, however, that “EMGEPRON [the state-owned company that deals with naval projects] retains a ‘golden share’ to ensure that the navy’s interests are safeguarded.”

Meanwhile, civil engineering group Construtora Norberto Odebrecht has been contracted for infrastructure works in Itaguaí and the completed facilities are then made available to ICN by the Brazilian Navy. Finally, a small consortium known as Consórcio Baía de Sepetiba, formed by Naval Group, Construtora Norberto Odebrecht, and ICN, is providing project management support services to the navy project team.

**[Continued in full version...]**

(939 of 3266 words)

For the full version and more content:

## Jane's Defence Industry and Markets Intelligence Centre

*This analysis is taken from [Jane's Defence Industry & Markets Intelligence Centre](#), which provides world-leading analysis of commercial, industrial and technological defence developments, budget and programme forecasts, and insight into new and emerging defence markets around the world.*

*Jane's defence industry and markets news and analysis is also available within **Jane's Defence Weekly**. To learn more and to subscribe to **Jane's Defence Weekly** online, offline or print visit <http://magazines.ihsmarkit.com/>*

For advertising solutions visit [Jane's Advertising](#)