

ARCHIVED REPORT

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Project Horizon (CNGF)

Outlook

- No additional domestic construction planned and no exports likely
- FREMM has replaced this class as the primary export candidate
- Primacy of political demands over military requirements doomed the tri-national effort
- CNGF Horizon was excellent example of how not to run a multinational procurement program

Orientation

Description. A medium-size air warfare frigate.

Status. In service.

Sponsor

Delegation Generale pour l'Armement
10/14 Rue Saint Dominique
F-75997 Paris Armees
France

Mission. Defense of aircraft carrier and amphibious warfare groups against attack by aircraft and missiles.

Price Range. The estimated cost of these ships is \$610 million, based on the contract for FS *Forbin* awarded by the French Navy. This excludes the costs incurred by the now-aborted tri-national CNGF.

Generale Direction for Naval Construction & Naval Weapons
Piazzale della Marina
I-00196 Rome
Italy

Pennant List

<u>Number & Name</u>	<u>Country</u>	<u>Builder</u>	<u>Launch Date</u>	<u>Commission Date</u>
D620 <i>Forbin</i>	France	DCN Lorient	3/2005	12/2008
D621 <i>Chevalier Paul</i>	France	DCN Lorient	7/2006	4/2009
D553 <i>Andrea Doria</i>	Italy	Fincantieri, Riva Tigosio	10/2006	11/2007
D554 <i>Caio Duilio</i>	Italy	Fincantieri, Muggiano	10/2007	4/2009

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Contractors

Prime

DCNS	http://www.dcnsgroup.com , 2, rue Sextius Michel, Paris, 75732 France, Tel: + 33 1 40 59 50 00, Fax: + 33 1 40 59 56 48, Email: info@dcn.fr , Prime
Fincantieri Naval Shipbuilding Division	Viale S Bartolomeo 440, La Spezia, 1-19024 Italy, Tel: + 39 187 54 11 31, Prime

Subcontractor

Calzoni Srl	http://www.calzoni.com , Via A De Gasperi, 7, Calderara di Reno, Bologna, 400 12 Italy, Tel: + 39 0514 1377, Fax: + 39 0514 1375 55, Email: calzoni@calzoni.com (Aircraft Handling Equipment)
Duramax Marine LLC	17990 Great Lakes Pkwy, Hiram, OH 44234 United States, Tel: + 1 (440) 834-5400, Fax: + 1 (440) 834-4950 (Shaft Sealing)
EPCOTS	http://www.epcots.fr/html_en/grp_nvle-ligne.php , 66 Impasse Branly, Zone Industrielle BP99, Toulon, 83079 France, Tel: + 33 498 080000, Fax: + 33 498 080008 (Sound Isolation)
Elettronica SpA	Via Tiburtina Km 13,700, Loc Settecimini, Rome, I-00131 Italy, Tel: + 39 6 415 41, Fax: + 39 6 419 28 69 (Electronic Countermeasures System)
Eurosam GIE	http://www.eurosam.com , Centre d'affaires de La, Boursidière Bâtiment Kerguelen, Le Plessis Robinson, 92357 France, Tel: + 33 1 41 87 14 16, Fax: + 33 1 41 87 14 42, Email: eurosam@eurosam.com (PAAMS)
Eurotorp	http://www.eurotorp.com , 399 route des Cretes-Les Bouillides, B.P. 113, Sophia Antipolis, 06902 France, Tel: + 33 4 92 96 38 50, Fax: + 33 4 92 96 38 55, Email: et@eurotorp.com (Torpedoes)
Filtronic Components Ltd	Airedale House, Acorn Park, Shipley, BD17 7SW Bradford, United Kingdom (RF Components)
GE Transportation - Marine Engines	http://www.getransportation.com , 1 Neumann Way S-156, Cincinnati, OH 45215 United States, Tel: + 1 (513) 552-5465, Fax: + 1 (513) 552-5005 (LM2500 Marine Gas Turbine)
L-3 Communications - ELAC-Nautik GmbH	http://www.elac-nautik.de , Neufeldtstrasse, Kiel, 24118 Germany, Tel: + 49 431 883 0, Fax: + 49 431 883 496, Email: elac.marketing@L-3com.com (Echosounders)
Oto Melara SpA	http://www.otomelara.it , Via Valdicocchi 15, La Spezia, 19136 Italy, Tel: + 39 0187 5811 11, Fax: + 39 0187 58266, Email: press-office@otomelara.it (76mm L62 Super Rapid)
SMAC	http://www.caoutchouc-elastomere-suspension.com , 66 Impasse Branly, Zone Industrielle BP11966, Toulon, 83079 France, Tel: + 33 494 752488, Fax: + 33 494 4759499 (Rafting)
Thales Nederland BV	http://www.thalesgroup.com/netherlands , Haaksbergerstraat 49, Hengelo, 7554 PA Netherlands, Tel: + 31 74 2488111, Fax: + 31 74 2425936, Email: info@nl.thalesgroup.com (Smart-L Radar)
Voith Turbo GmbH & Co KG	http://www.voithturbo.com , PO Box 1555, Crailsheim, 74555 Germany, Tel: + 49 7951 32 0, Fax: + 49 7951 32 500, Email: industry@voith.com (Start-Up System)

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Technical Data

	<u>French</u>	<u>Italian</u>
Specifications		
Length (overall)	497.5 ft	497.4 ft
Length (water line)	465.0 ft	464.9 ft
Beam (maximum)	66.6 ft	57.4 ft
Draft	15.7 ft	16.7 ft
Displacement		
Standard	5,200 tonnes	5,000 tonnes
Full Load	6,970 tonnes	6,700 tonnes

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	<u>French</u>	<u>Italian</u>
Performance		
Speed		
– Max	29 kt	29 kt
– Cruising	18 kt	18 kt
Range	7,000 nm at 18 kt	7,000 nm at 18 kt
Endurance	45 days	45 days
Crew	32 officers, 158 enlisted	35 officers, 165 enlisted

	<u>France</u>		<u>Italy</u>	
Armament	<u>Type</u>	<u>Quantity</u>	<u>Type</u>	<u>Quantity</u>
Guns				
Medium Caliber	Oto Melara 76mm L62	2	Oto Melara 76mm L62	3
Small Caliber	Giat 20mm	2	Oto Melara 25mm L80	2
Missiles				
Short Range SAM	ASTER-15	24-48	ASTER-15	24-48
Point Defense SAM	Sadral	2x 6		
SSM	Exocet MM-40	8	TESEO Mk 2	8
Torpedo Tubes	Lightweight (324 mm)	2x 2	Lightweight (324 mm)	2x 2
Torpedoes	Impact	12	Impact	12
Helicopter	NH90 or Dauphin	1	EH101 or ASH-60F	1
Electronics				
Radars				
Air/Surface Search	SPY-790 EMPAR	1	SPY-790 EMPAR	1
Target Acquisition	Thales Radar Nederland SMART-L	1	Thales Radar Nederland SMART-L	1
Fire Control	NA-25	2	NA-25	2
Navigation	GEM	2	GEM	2
Command System	EUROSYSNAV	1	Alenia CMS	1
Electronic Warfare				
ESM/ECM	DBI-3000	1	JANEWS	1
Decoy Launchers	Sagaie	2	SCLAR-H	2
COMINT	SEQUOIA	1		
Sonar	TSM-4110	1	TSM-4110CL	1
Propulsion				
CODOG – Gas Turbines	LM2500	2x 21,500 kW	LM2500	2x 21,500 kW
– Diesels	SEMT-Pielstick 12PA6STC	2x 4,400 kW	SEMT-Pielstick 12PA6STC	2x 4,000 kW
Shafts		2		2

Design Features. The original design featured a flush-decked hull with the forecabin raised a deck by pronounced reverse sheer forward – more specifically, the deck line rose from the bow to the bridge rather than the reverse. Later diagrams show this feature replaced by a conventional sheer and a raised forward deck for the guns and missiles. The flare at the bows is moderate to reduce slamming in heavy seas, while a bow knuckle and breakwaters are used to reduce the extent to which green water is taken over the forepeak.

The superstructure is divided into two distinct blocks, although the pronounced gap between them has been reduced by raising the anti-ship/anti-submarine missile batteries amidships by a deck. The primary weapon system is the ASTER-15 anti-aircraft missile system deployed in a silo forward. DCNI states that this will be a 48-round unit. These missiles are supplemented by

three 76mm L62 Oto Melara guns, with a single mount aft and two forward. The forward guns are winged out rather than superimposed. The French and Italian ships carry anti-ship missiles, OTOMATs for the Italians, and Exocet MM40s for the French.

Internally, the machinery space is arranged so that the ship has two funnels. Both the French and the Italian ships use a CODAG power train with two separated gas turbine rooms, each containing a Westinghouse/Rolls-Royce WR21 gas turbine and a cruise diesel capable of driving the ship at 28/29 knots. Range will be 7,000 miles at 18 knots.

Operational Characteristics. The Horizon frigate is predominantly an anti-air warfare (AAW) vessel for local defense against saturation missile attacks. It is being designed for rapid deployment and extended

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range and endurance, so the vessel can quickly reach distant crisis zones. A stabilization system allows the ship's helicopter to be deployed and its combat system to be operated in rough seas.

The Franco-Italian Horizon draws heavily from design features of the La Fayette class. These include highly

automated combat and platform management systems that ensure high availability and crew efficiency, plus fast response to all emergencies. Horizon frigates will also feature a state-of-the-art electronic warfare suite.

Variants/Upgrades

As far as can be determined, the French and Italian ships are virtually identical. The primary difference is that the French ship is slightly beamier and 200 tons heavier. In addition, the French version has two Sadral launchers in place of the aft 76mm gun on the Italian version.



FS Forbin on Sea Trials

Source: French Navy

Program Review

Background. The program that was to become the Project Horizon Common New Generation Frigate was first conceived in 1984-1985, when the British finally concluded that the basic design faults of the Type 42 destroyers were too fundamental to be corrected. These ships were deemed unworthy of upgrade, and plans for a successor were drawn up.

These plans were originally a part of the NATO frigate program, an attempt to develop the new ship as a collaborative venture among eight countries. This program was designated the NFR-90 and was abandoned at the start of 1990 when it became evident that the ship and its principal weapons systems lacked standardization, and that the multiplicity of national

variants had destroyed any chance of substantial savings.

Joint Frigate – Different Needs

In December 1991, the French and British governments announced that exploratory talks would be initiated with the aim of establishing a joint air-defense frigate program. This was quickly designated the Anglo-French Future Frigate, or A3F program. The problem was that similarities between the two projects were superficial only. The British required a very high-capability warship, able to simultaneously prosecute anti-submarine and anti-surface operations while operating under threat of heavy air attack, and to take

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over the primary role of defending groups of ships against attacks by large numbers of missile-carrying aircraft. The French required a much simpler ship, capable of defending itself against a relatively low-scale air attack. Capability against anything greater would be provided by the aircraft carrier *Charles de Gaulle*. In U.S. Navy terms, the British wanted an upgraded CG-47, the French a downrated FFG-7.

The meetings of the A3F steering committee were non-productive, since the British had already done extensive design analysis and formulated proposals. The French design team had only begun work and was still trying to formulate its basic approach. As an interim measure, the French team submitted the AAW version of the La Fayette class frigate, developed for the Saudi Arabian Navy, as its proposal for the A3F design. This was unacceptable to the British, as was a 5,500-ton enlarged La Fayette shown at Le Bourget naval exhibition, inaccurately described as the design for Project Horizon – an error that caused serious problems.

The British and French defense secretaries staged an emergency meeting in August 1992. At least part of the problem was that the preferred British 7,200-ton design was too large, at 175 meters overall, for quantity construction in French shipyards. A smaller 6,000-ton design was within the capability of the French shipyards, and this design was stipulated as being the baseline from which A3F would be configured. The modifications described above were instituted, and the displacement rose to 6,400 tons without increasing overall size.

Italy Joins the Party

With the overall parameters of the ship established, meetings on the A3F continued throughout 1992. A Preliminary Joint Program Office was formed in November 1992. In December 1992, the Italian Navy signed a tripartite staff requirement for a next-generation frigate, then joined the A3F project as a full participating member on January 29, 1993. At that point, the designation A3F was retired and the project became the Common New Generation Frigate (CNGF), with the working title Project Horizon.

In April 1993, the first of a series of Memorandums of Understanding was signed covering the establishment of a Joint Program Office in London and the appointment of a project manager. It was agreed that final design authority would reside with the Royal Navy Department of Naval Construction at Bath. The decision to issue Invitations to Tender (ITTs) for the Principal Anti-Air Missile System (PAAMS) and command management systems was made in June 1993. The ITT for the ship as a whole was to be issued in 1994.

The Breakdown Starts

Delays in the CNGF program meant that the first ship was not expected to be commissioned until December 2002, with this date confirmed by British documentation on major defense projects. A new window of opportunity thus would be opened for the adoption of a more advanced technology system for the multi-function radar (MFR) prime sensor for the PAAMS. This eliminated the need for the Anglo-Italian EMPAR radar, and the British suggested that a jump could be made to the active array TRISAR radar (now named SAMPSON). The Bath design office had also complained that trivial alterations to plans were being made when they were sent around to other partners, which meant that repeated resubmissions were becoming necessary for even minor design decisions. This was reported to be a major source of delays.

A number of system disputes also arose during the negotiating process. These stemmed from the different operating concepts of the navies in question, from the dissimilar design principles used by the various drafting offices, and from the disparate approaches to problem resolution used by the varying bureaucratic systems. These disputes were wide ranging and covered such elements as the AAW missile system, the primary multifunctional radar, the electronic warfare and communications suites, and the superstructure layout. Some of these disputes were resolved by the provision of transparent interfaces to the overall command system, so the partners could install their system of choice. Others remained intractable.

Management Company Formed

In early 1994, contractors were appointed to oversee the design of the new frigate. In the case of France and Italy, this was a foregone conclusion because only Fincantieri and DCN International had the required expertise. In the U.K., a competition for prime contractor was launched, with teams led by GEC-Marconi and VSEL entering bids. In February 1994, GEC-Marconi Naval Systems was appointed prime contractor for the British side of the Project Horizon program. This consortium then joined with DCN International and Fincantieri in forming the International Joint Venture Company (IJVC), which would manage the program under contract from the Joint Program Office.

On July 11, 1994, the defense ministers of the U.K., Italy, and France signed a joint MoU setting forth the timetable and basic principles for development of the Project Horizon CNGF. A major surprise in this announcement was the news that Italy was increasing its requirement from four ships to six, with the additional pair replacing the four 1970s-vintage Lupo class frigates. The same day, a preliminary document was signed detailing how work on the first segment of the

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design definition phase would be financed. Other increments were to be signed later, covering additional phases of program development and detailed design together with the construction and delivery of the first-of-class ships.

Disputes Over Equipment

At this point, the whole program began to unravel. The first indication of trouble was a reported difference in the operational requirements for the electronic warfare system. The Italian Navy and its prime supplier, Elettronica, were committed to the use of cross-eye jamming, a technique that British and French studies have failed to validate. In addition, the British and Italian navies were interested in using Sea Gnat munitions, which are incompatible with the French Sagaie launching system.

By late 1994, the IJVC was expressing strong reservations about the commercial footing of the entire project. The designated managing director of the IJVC, Luigi Benedetti, stated that the company was being forced to work under highly unusual conditions, with the IJVC having to fund most of the preliminary work on the project without substantive backing from the government.

This was followed by an exceptionally ominous development when the French defense minister, François Leotard, singled out Project Horizon as a laboratory for developing new procedures to manage European cooperative programs. Although the International Joint Venture Company responsible for Project Horizon was formally established in London on February 21, 1995, delays in signing the appropriate developmental MoUs had already set the project back by eight months, severely jeopardizing the December 2002 in-service date.

The consultant support agency contract was awarded by the JPO in March 1995, the winning competitor being the Chorus Consortia comprising British Maritime Technology of the U.K., CISDEG of Italy, and SRTI Systemes, a part of the information technology group of Thomson-CSF (now Thales). The consultant support agency was responsible for providing in-house technical and managerial services toward production of a workable final design for Project Horizon by mid-1996.

At this point, technical and financial arguments concerning the radar and air defense missile fits re-emerged. The signing of the agreement for the development of the PAAMS air defense system was repeatedly delayed. While PAAMS was not technically part of the Project Horizon program, the two programs were tightly linked. France demanded that the U.K. pay approximately \$205 million as an entry ticket to what

had been a Franco-Italian project. France also insisted that the British pay more than 60 percent of the development cost of PAAMS, a demand that contravened previous agreements that development expenditure would be divided evenly among the partners.

The Conze Scandal

The next stage of this dispute reflected an even greater conflict with the agreements surrounding Project Horizon. The French DGA procurement executive, Henri Conze, in a letter to the Dutch Secretary of State for Defense Procurement, stated that the Dutch SMART-L radar would be installed on all 22 Project Horizon frigates if the Dutch government selected the Eurocopter Tiger to fulfill its attack helicopter requirement. The letter stated that this would double the value of the offset deal already on offer, placing the value of the SMART-L for this application at \$17 million. This was well in excess of any costs normally associated with SMART-L and would be prohibitively expensive.

While SMART-L was one of the radars being considered as a possible substitute for the ASTRAL long-range search radar then specified, the agreements for Project Horizon stated that equipment specifications would be on the basis of competitive tendering. These agreements also specifically prohibited the use of promised Project Horizon contracts to support other defense sales efforts. The Conze letter breached both sets of agreements. It caused an immediate explosion in British circles, with the magazine *Armed Forces Journal International* quoting British defense sources as being "incandescent with rage." Fuel was added to this dispute by an apparent refusal of the French authorities to take the matter seriously. The Conze letter is also cited by U.K. defense sources as a major factor behind the final selection of the U.S. AH-64D Apache over the Eurocopter Tiger for the British Army attack helicopter requirement.

Poor Management

In August 1995, the National Audit Office released a damning report on the delays in the Project Horizon CNGF program. It specifically cited the inability of British, French, and Italian officials to work together or to agree on system requirements, design practices, or work-share arrangements as the primary causes of significant delays. This report was the first official British government document to acknowledge the severe delays. By September, delays of 18 months had finally been confirmed, with questions of the missile and launch system for PAAMS and the now-explosive issue of the long-range search radar unresolved. One

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published cost estimate for the program now placed the total procurement value at \$24.8 billion.

In March 1996, Project Horizon moved a little closer to fruition when a series of three intergovernmental MoUs were signed. These covered the final agreements for funding the development of the PAAMS, the initial production of PAAMS, and the design definition process of the CNGF. There was some disquieting information in these agreements. Based on a close reading of the planned production quantities, the Italians were committed to only four of the six ships they had publicly stated they would require, and the French, two of four. Only the British requirement remained firm at 12.

By May 1996, all evidence pointed to a four-year slippage in the Project Horizon program. An analysis of missile and radar development program contracts showed that there was little chance of the systems being ready before the end of 2006. Even allowing for progressive installation of equipment during the first-of-class trials, that meant the first ship for each navy was unlikely to be delivered before 2005.

Two additional Project Horizon contracts were awarded in July 1996. One, valued at \$12 million, was for the project definition phase of the CNGF command management system. This was placed with the HEPICS consortium, consisting of GEC-Marconi, Datamat, CSEE Defense, Dassault Electronique, and Matra CAP Systemes. The other contract was for project definition on the integrated communications systems and was awarded to the NICCO Consortium, consisting of GEC-Marconi, Thomson-CSF, Elmer, and Redifon.

These contracts were followed by a further tranche in October 1996. These included the second CNGF-CMS project definition contract, which was awarded to the Eurocombat consortium consisting of BAeSEMA, Thomson-CSF, and Alenia Sistemi Navali.

CNGF in Danger

In early 1997, the project suffered serious problems once again, and news emerged that its future was in danger. The new series of disagreements were wide ranging, covering everything from the industrial and technical arrangements for the ships to the most basic elements of the design. By this time, it was being reported that the French and British delegations were barely on speaking terms and that the Italians were struggling heroically to keep the program on track. By mid-1998, it was painfully obvious that the whole tri-national venture was dying. Over the last half of 1998 and into early 1999, press reports consistently indicated a growing British move away from the tri-national program. The situation reached the point that, by December 1998, only the most die-hard supporters of

Project Horizon failed to recognize the imminent death of the venture.

British Walk Out

The final blow came on April 25, 1999. After an ultimatum from the British government regarding the establishment of an effective and responsive industrial and management structure for the CNGF went largely unsatisfied, the British announced they would be leaving the program and establishing their own. This became the Type 45 Daring class (see separate report in this tab).

The immediate reaction of the French and Italians was to suggest that the British pullout was a negotiating ploy. When they realized this was not the case, they resorted to condemnation. Fincantieri took the lead with an attack on British authorities: "The British wished to define the technical characteristics of the whole project without listening to the technical and functional requests from the end-users," said an anonymous Fincantieri director in *Jane's Defence Weekly* on March 5, 1999. This statement revealed the real reason for the disintegration of the tri-national program. The British project management team was effectively part of the Royal Navy, the direct end-users of 12 of the planned 22 warships. The end-users referred to by Fincantieri were not the navies but local political interests, and it was this clash between the operational demands of the navies and the political demands of the French and Italians that did more than anything else to delay and finally kill the tri-national CNGF.

Recasting Horizon

At this point, it was by no means clear that the French and Italians would continue with the CNGF program. They had several options:

- continue with the existing design;
- produce a variant of that design optimized for French and Italian requirements;
- abandon the joint venture and build purely national ships; or
- abandon the future frigate program entirely.

The first of these options was unlikely, since a major sticking point had been the size and cost of a ship designed to include the operational demands of the Royal Navy. The need to replace obsolescent and worn-out warships in the French and Italian navies precluded the last of the four possibilities. This reduced the available choices to building new ships either individually or in partnership. By May 1999, the feasibility of a joint Italian-French Horizon program was being evaluated.

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Initially at least, it appeared probable that the whole Project Horizon program would be discarded in favor of the enlarged and upgraded La Fayette class frigates being sold to Saudi Arabia. Eventually, a decision by France and Italy to continue with a modified and downsized version of the Project Horizon frigate was finally made in September 1999. This new agreement envisioned a four-ship program, valued at \$3.2 billion, under which the first hull would enter service in 2005. The ships would be constructed by the Orizzonte consortium in Italy and by DCN in France. This decision was formally approved at a Franco-Italian summit meeting.

The continuation of the Project Horizon program as a Franco-Italian venture depended on the resolution of several problems. The following measures were taken to settle these issues:

- An agreement was reached to adopt a CODOG configuration using LM2500 gas turbines. This pleased the Italians, who were already using this engine in their ships.
- The inner layer missile system was eliminated in favor of three 76mm Oto Melara guns arranged in a triangular layout, one aft, two forward. The French Navy adopted Sadral in place of one of these guns.
- The SENIT-8 command system designed by the French for the aircraft carrier *Charles de Gaulle* was adopted as the basis for the combat management system (CMS), since the elimination of the area defense requirement significantly reduced the burdens on the system.
- The medium caliber gun was deleted.

The revised plans were approved by the Italian Parliament during the first week of December 1999. Subsequent reports claimed that the Franco-Italian version of Project Horizon would displace around 6,450 tons, with the first ships being delivered in 2005 and 2006. The second pair would follow in 2008 and 2009. This announcement was followed by a February 2000 report in France that Thales (formerly Thomson-CSF) was setting up a joint venture with DCN to undertake international shipbuilding projects, starting with Project Horizon. It was also reported that the first pair of ships was to be ordered in April 2000.

Franco-Italian Program

The Memorandum of Understanding for a construction contract to cover the four French and Italian Project Horizon ships was signed in June 2000, with the first deliveries planned in 2006. The full construction contract was to be signed in December 2000. At this time, a detailed drawing of the new ships was released,

which showed significant changes to the basic design. Most importantly, the forward missile silo was reduced to 24 rounds of ASTER-15, rather than the 48 mentioned in earlier descriptions (later this change appears to have been reversed). The radical bow design of the earlier drawings (which included a reverse sheer) was replaced with a more conventional sheer line and a raised foredeck for the missile silo and the two forward 76mm guns.

The full contract, valued at \$2.4 billion, was for the construction of four Horizon class frigates, two French and two Italian, the latter to be subcontracted to Fincantieri. The first of the subcontracts, valued at \$610 million, was awarded in November 2001.

By June 2001, additional subsystems were being ordered for the Project Horizon program. However, one of these contracts (for signals processing equipment to be installed as part of the EMPAR, or European Multi-function Phased-Array Radar) listed completion dates of 2007 and 2008 for the first pair but indicated a delay to 2013 and 2016 for the second pair. The first delay appeared reasonable and in line with a major defense program, but the dates for the second pair, if correct, would represent a serious program delay. However, the official position on the construction of the four ships covered by the existing contract was that they would be completed at a rate of one per year between 2006 and 2009.

Construction Started at Last

First metal was cut on the lead ship of the Horizon class, the FS *Forbin*, on April 8, 2002. At the ceremony held for this event, it was stated that the *Forbin* would be delivered to the French Navy at the end of 2006, with the first Italian ship following six months later. In 2003, the French Navy announced that it planned to order a third ship of this class in 2007. This plan was subsequently refined to include a pair of ships to be ordered in 2007 for delivery in 2012 and 2013. These ships would replace the old air warfare ships *Cassard* and *Jean Bart*.

In 2004, the Italian Navy announced that its two Horizon class destroyers would be named *Andrea Doria* and *Caio Duilio*, a pair of names that have traditionally been given to Italian battleships. This caused some confusion since the new Italian aircraft carrier was also to be called the *Andrea Doria*. This was resolved when the carrier was renamed the *Conte di Cavour*.

The first French ship, FS *Forbin*, was launched on March 11, 2005, in accordance with the existing schedule. The ship's sea trials began in July 2006, with plans for her to commission in late 2007 or early 2008. However, this major step forward was overshadowed by

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the news that the French Navy had canceled plans to build a second pair of Horizon class ships and that its program would, like the Italian Navy section, be restricted to just two ships. Thus, of the 10 Franco-Italian ships originally proposed, only four would actually be completed. The replacement of *Cassard* and *Jean Bart* would be achieved by the use of an AAW derivative of the FREMM class.

Forbin's sea trials revealed significant integration problems with the combat management system and the air warfare system. These delayed the commissioning of *Forbin* by over a year, with consequent knock-on effects hitting the rest of the class. It has also been

reported that the ship had severe corrosion problems that had to be rectified. Following the commissioning of the *Forbin*, the remaining three ships in the Horizon were commissioned, with the last pair entering service in April 2009.

In May 2009, the Brazilian Navy suggested that the Horizon design might be one candidate for an order to replace the country's fleet of aging British-built frigates. Another ship mentioned in this context was the Korean KDX-2 design. This requirement became dormant in early 2010 but has recently been revived with a requirement for up to five ships. However, the revived program specifies FREMM, not Horizon.

Funding

Project Horizon is funded by the French and Italian navies via the Horizon Venture, headquartered in Paris.

Contracts/Orders & Options

<u>Contractor</u>	<u>Award (\$ millions)</u>	<u>Date/Description</u>
Thales Radar Nederland	60.0	Feb 2000 – Final development of S-1850M radar and integration into Horizon frigate.
Thales/DCN	2,400.0	Nov 2000 – Final design and construction of four Horizon class frigates.
Fincantieri	610.0	Nov 2001 – Subcontract from Thales/DCN for the construction of the first Italian Horizon class frigate.
Thales Underwater Systems		Dec 2001 – Contract for four TSM-4110CL sonars.

Timetable

<u>Month</u>	<u>Year</u>	<u>Major Development</u>
	1984	Type 42 replacement programs initiated
	1986	Modified Type 23 designs proposed
	1989	U.K., France leave NATO Frigate Replacement (NFR-90) program
	1990	NFR-90 collapses
	1991	Enlarged Type 23 designs proposed
	1991	British Navy designs 7,200-ton ship
Early	1991	France, U.K. sign Joint Statement of Need for future frigates
Dec	1991	A3F program initiated
Apr	1992	Italy enters the program as an observer
Jul	1992	A3F program breaks up in disarray
Aug	1992	Political initiative saves A3F, stating commitment to cooperation
Nov	1992	Agreement on acquisition strategy; preliminary Joint Program Office founded; decision made on the main weapon system: SAMP/N=LAMS
Dec	1992	Italy formally joins program, signs common staff requirement; CNGF inaugurated
Jan	1993	Common acquisition strategy endorsed by the three countries
Mar	1993	JPO founded in London
Jul	1993	MoU agreed upon by all three navies in the program
Jul	1994	Initial development MoU signed for design, drawing, build (not PAAMS)
Feb	1995	Eurosam submits preliminary PAAMS FSED estimate; Horizon IJVC formally established
Mar	1996	Design definition contract signed with IJVC

Project Horizon (CNGF)

<u>Month</u>	<u>Year</u>	<u>Major Development</u>
Oct	1996	Two-year combat system project definition contract awarded
Jul	1997	Phase B project definition studies on EWS awarded to two consortia
Apr	1999	Tri-national CNGF program canceled
Jun	2000	MoU signed
Nov	2000	Construction contract signed
Apr	2002	First metal cut
Dec	2007	First Italian ship delivered
Dec	2008	First French ship delivered
Apr	2009	Last pair of ships delivered

Worldwide Distribution/Inventories

France Two ships in service.

Italy Two ships in service.

Forecast Rationale

The CNGF Horizon program has been a curious experience for the European naval industry. It has become synonymous with mismanagement, political interference with procurement decisions, and plain, unvarnished organizational incompetence. On the other hand, it did produce four ships that fill the criteria laid down for them, and which have, by all accounts, proved successful in service. Even the disastrous experience of the 1990s has not, in retrospect, been without its value. The lessons learned by the French and Italian navies with CNGF Horizon have been absorbed and applied to the FREMM program, which appears to be going well.

Viewed objectively, there is little indeed to commend the Horizon class ships in their reduced Franco-Italian form. They offer few capabilities not matched by the succeeding FREMM class. An objective assessment is that both the French and Italian navies would have been better served by canceling Horizon altogether in favor of building extra FREMM class ships. However, Horizon was always a program dominated by politics, and it was the political necessity of continuing with the program after the British walked out in 1999 that finally ensured four ships were built. In many ways, of course, that statement summarized the whole problem that lay at the root of the CNGF fiasco. It always was a program dominated by political considerations that overrode military requirements.

Exports Unlikely

The unsatisfactory nature of the Horizon design is demonstrated by the fact that it is not being offered on the export market. Indeed, there is a strange sense about this program, almost as if having been completed,

everybody involved would like to forget about it as soon as possible. The Horizon design has been quoted as a contender for the Brazilian requirement to replace its fleet of elderly British-built frigates. This program became dormant in early 2010 but has recently been revived with a requirement for up to five ships. Several countries are competing for this project with both France and Italy offering different versions of FREMM. As we projected last year, CNGF Horizon quickly dropped out of the picture and there are no current export projects for this design.

Why Did It Fail?

As a program, CNGF Horizon compares unfavorably with the German-Dutch-Spanish frigate effort that produced more and better ships within a realistic time and cost schedule. The Spanish F-100 class has gone on to make a major impact in the export market and is a viable contender for additional orders. This cannot be said of Horizon.

Project Horizon (CNGF)

The failure of the Horizon program lies not in the ships themselves but in the managerial structure and philosophy that gave birth to them. They were forced to fit into an excessively rigid and standardized framework that tried to reconcile opposing requirements. When the strains became excessive, the political desire to build any multinational ship overrode the logical decision to either relax standardization or simply terminate the program. In retrospect, CNGF Horizon should have

been canceled at least two, and possibly three, years earlier than was actually the case. This failure to recognize the inevitable served only to damage the production run of the much more rational and successful FREMM class. With production for domestic requirements completed and no viable export candidates, CNGF Horizon has reached the end of its production life. This report will therefore be archived in the near future.

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