



## THE GULF STATES NAVIES

With the formal end of the Iraq conflict, attention is (re)turning to other security issues in the Gulf region – many which are ‘anchored’ in the maritime domain. Theatre ballistic missile defence, chemical, biological, radiation, and nuclear defence, comprehensive border defence, maritime security, and safety of navigation – all of these missions demand significant maritime capabilities. The Navies and Coast Guards of the Gulf region are responding with considerable investments in platforms, which will fulfill these missions.

### THE GROWING MENA MARKET

The acquisition of corvettes and small frigates highlights how the Gulf Navies continue to move up the capability chain – from force structures centred on coastal and inshore small craft, to more robust and enduring multi-purpose ships (see figure 1). These vessels from 1,500 to 3,000 tons are expected to deliver both maritime security and combat capabilities in the three spheres air, surface, and subsurface. The MENA (Middle East North Africa) market is also showing increasing interest in unmanned maritime

systems for mine warfare and port/harbour security, as well as submarines for regional ASW and deterrence. This, in turn, will see an emphasis on underwater warfare capabilities in future naval programmes in the region.

These trends are reflected in AMI’s naval market forecasts for the MENA region. This regional market continues to promise strong growth, as expenditures on new naval ship and craft construction between 2012 and 2032 are projected to reach US\$45Bn – up about 20 percent from AMI’s 20-year forecast of 2008.

Regional highlights include:

- **Saudi Arabia** is the leading naval market in MENA, with some 40 percent of the region’s future spending on platforms and related systems expected to come from the Kingdom. This includes extensive Navy and Ministry of Interior/Coast Guard programmes. The latter will see some hundreds of new hulls introduced to the Ministry of Interior’s maritime forces. Saudi Arabian procurements will range from utility and fast intercept craft to frigate and perhaps even destroyer-sized combatants.

AMI anticipates that Saudi Arabia will also seek to acquire small conventional (about 1,000 tons) submarines to give it capability in all maritime domains.

- **Qatar** also is nearing key decisions on patrol and corvette programmes that continue to underscore the trend toward procurement of larger multi-mission corvettes and frigates for a larger array of commitments further from the Gulf Cooperation Council (GCC) home waters.
- **Iranian** naval demonstrations in the Gulf in early 2012, coupled with sustained programmes to develop local maritime platforms and sensor/weapon capabilities, underscore Iran’s clear intent to remain a leading naval influencer in the Gulf.

### COUNTRY PROFILES

**KUWAIT:** The Kuwaiti Naval Force (KNF), consisting of the Kuwaiti Navy (KN) and Kuwaiti Coast Guard (KCG), has become one of most capable sea services in the Gulf region. Operating small fleets of fast attack craft (FAC) and patrol vessels, the KNF will soon be re-equipped. The next year should see some movement on long awaited acquisition decisions and type selections for new missile corvettes, patrol boats, diver and general support ships. Eventual procurements of unmanned underwater systems and naval helicopters are also looked for. The Navy’s eight “Um Almaradim” (CMN Type P37 BRL) class FACs (delivered 1997-2000), are completing hull, maintenance, and electrical upgrades under a 2008 contract

**Bob Nugent**

heads AMI International’s Advisory Services covering defence, naval, aerospace, and unmanned markets. He has presented and published widely on naval and related topics. A retired US Navy officer, Bob completed the Naval Postgraduate School and War College and served in Japan, Korea, Russia, the UK, and on the Navy acquisition staff.



**Josh Cohen**

is an Advisory Services Consultant with AMI International. Mr. Cohen has over 15 years of experience in the commercial and government intelligence sectors, specialising in open source (OSINT) and competitive intelligence (CI) with an emphasis on the global defence industry.





◁ Fig. 1: The three Type F-3000S ("La Fayette" class modified) frigates operated by the Royal Saudi Naval Force are being upgraded with the SIGMA 40 combat management system (CMS) supplied by SAGEM Défense Sécurité. (Photo: Courtesy of DCNS; all images provided by authors)

▽ Fig. 2: The armament of the 257 tons (full load) "Um Almaradim" class (CMN Type P37 BRL) FACs consists of four SEA SKUA anti-ship missiles, 12.7mm MSHB machine guns, and a complement of Oto Melara 40mm/70-calibre and GIAT 20mm/90-calibre Type 15A anti-aircraft guns. (Photo: Courtesy of Kuwaiti Naval Force)



(see figure 2). The SDS SIGMA 40 CMS is also being installed. In parallel with the FAC upgrade, seven of ten Mk V-C interceptor craft ordered through a US\$65.1M Foreign Military Sales (FMS) have been launched and three commissioned. Delivery of the final Mk V hull in 2013 will mark the completion of Kuwait's coastal surveillance programme initiated in 2006.

AMI analysis indicates naval leadership and the Kuwaiti First Deputy Prime Minister have discussed the procurement of between four and six new corvette hulls. Assuming the programme moves forward based on funding from oil tax revenue, the MoD could release a Request for Proposal (RfP) by early 2012. The first unit would likely commission in 2018 in a programme estimated to cost US\$300M. The Kuwaiti FMS equates to a mid-sized corvette at 1,500-2,000 tons loaded and is expected to be armed with anti-ship missiles and surface-to-air missiles. Provisions to support unmanned undersea systems are also planned.

With FMS now the leading KN initiative, the Naval Force Support Ship (AOR/AT), conceptualised in 2006 at a cost of US\$150M for two units, continues to be delayed.

An award for two modern diving support ships is expected in 2012 to fulfill a long-standing KN requirement. US builder Swiftships is expected to get the order to deliver the ships in an FMS programme approved in 2009.

In 2011, the Interior Ministry initiated explorations for the procurement of five fast patrol craft. Coastal monitoring and seaborne infiltration detection are envisioned as the primary duties of these lightly armed vessels. Initial interest points toward US Navy Special Operations craft. If selected a US FMS transfer can be expected.

**BAHRAIN:** From 2012, the Royal Bahraini Navy (RBN) and Bahrain Coast Guard (BCG) will confront funding challenges and maintenance issues that come with an ageing fleet. The RBN has one frigate, various FACs, and patrol vessels – all requiring modernisation or replacement. Due to the island nation's internal strife, the RBN's goal of modernising naval capabilities to achieve GCC interoperability appear to be on hold.

Given Bahrain's current internal political uncertainties, movement on naval acquisition is not anticipated. Prior to Bahrain's 'Arab Spring' inspired civil unrest, AMI estimated that between 2012-2030, the RBN planned to procure up to 29 new patrol boats and smaller craft.

The RBN has expressed interest in acquiring new corvettes, one specifically to replace its frigate. Shipbuilders and designs have been reviewed in recent years, so should Bahrain's internal situation stabilise, the Bahraini Amiri Navy (BAN) could move forward with a construction contract by 2013, with deliveries anticipated between 2016 and 2017. AMI estimates the cost per hull at US\$400M. As the corvettes are intended to be aviation-capable, standing interest in up to five new naval helicopters may also re-emerge. Notably, replacing the BAN's frigate would alleviate critical drains on funding and personnel presented by the ex-US Navy's "Perry" class frigate.

**QATAR:** The Qatar Emiri Naval Forces (QENF) and Marine Police (QMP) plan to

expand existing fleets of FACs and patrol vessels with new 90-100m corvettes and 50-60m patrol boats, as well as various support ships and fast intercept craft.

AMI expects that many of these new hulls will be built in Qatar at the new Nakilat Damen ship facility. The yard, located in Ras Laffan, is also intended for construction and support of the QENF fleet. Once equipped with the new corvettes and patrol boats, the QENF will be capable of meeting naval commitments further from home waters. However, manpower, training, and maintenance infrastructure constraints will still be issues.

With completion of the Qatari Nakilat ship construction facility, the 57-60m patrol boat programme could be the first Qatari local naval build programme. As of December 2011, the QENF was in the process of reviewing supplier offers for this programme. The new corvette procurement programme is expected to move forward in 2012 with design selection, followed by a construction contract by 2014-2015. While the Damen/Nakilat joint venture is the leading design and build team for three SIGMA design patrol vessels, the QENF is expected to review other designs in this competitive procurement. Many of the QENF's existing ships and systems are almost 20 years old, which is driving several equipment modernisation programmes. In 2010, the QENF confirmed that all four "Barzan" (Vita) class FACs would receive extensive refits (see figure 3).



**UAE:** The United Arab Emirates Navy (UAEN) and United Arab Emirates Coast Guard (UAECG) fleets are being augmented with two new corvette types, FACs, and patrol boats. Most will be built at Abu Dhabi Shipbuilding (ASDB), highlighting UAE's economic diversification strategy. Domestic naval contracts now underway underscore potential for regional construction orders. ADSB has developed new facilities for naval vessel construction and repair. Primary clients are the UAEN and GCC members. In 2006, ADSB launched a composite hull workshop for advanced design builds. Notably, Finmeccanica and UAE's Al Fattan Shipyard developed a 15.7m catamaran designed for ASW, surveillance, and mine countermeasures. One prototype was built in 2011.

Conceptualised in 1993, all six units of the "Al Baynunah" (LEWA I) class corvette programme are now under construction or in the water (see figure 4). The first vessel was launched 2009 at CMN in Cherbourg, France, conducting sea trials in 2011. The UAEN received the second vessel last February. This was the first built at ADSB where the final four hulls are now being constructed. By 2013, all six corvettes should be in service.

In February 2009, the UAE contracted Fincantieri for two "Commandante" class corvettes with options for an additional pair. In February 2011, the first vessel was launched at Fincantieri's Trigoso facility. By 2013, both hulls should enter service, approximately the same time a contract for the second tranche is anticipated.

In February 2009, the UAE ordered twelve "Ghannatha" class FACs worth US\$209.9M with ADSB and SwedeShip. The first three boats are under construction at SwedeShip with delivery sometime in 2012. The remaining nine are also building and should be in service by 2015.

In February 2011, steel was cut for the second FALAJ FAC. Ordered in 2010 from Fincantieri at US\$136M per boat, the FALAJ will replace six older TNC 45 FACs and supplement the "Al Baynunah" corvettes. An option for an additional four domestically built hulls may be exercised in 2013 upon delivery of the initial FACs.

With new vessel deliveries underway, 35 SDS SIGMA 40 CMS have been acquired to upgrade selected in-service units. New hulls will also receive the installation, standardising UAEN combat management, and commonality among GCC member Navies.

**OMAN:** A small country dependent on petroleum exports to support defence expenditures, the Royal Navy of Oman (RNO) and the Royal Oman Police Coast Guard (ROPCG) are equipped with small fleets of relatively modern corvettes, FACs, patrol, and amphibious vessels – all in good operating condition.

With the wrap up of 'Asad Al Bahr' an extensive month-long naval exercise in December 2011, Oman's goal of GCC interoperability and longer-range operations the Arabian Gulf and North Arabian Sea operations are gradually being realised, new corvettes, and existing capability upgrades adding to the equation.

The first two Project KHAREEF corvettes (see figure 5), ordered in 2007 to replace four "Dhofar" class FACs, were commissioned in 2010. The third unit was launched in 2011 and will commission by 2012. Although scheduled for turn over to the RNO from mid-2010 through 2011, engineering issues have reportedly delayed delivery.

Project AL-OFOUQ will replace three 54m long "Al Bushra" class OPVs built in the mid-1990s with a larger helicopter-capable vessel better able to patrol the nation's EEZ. In 2010, three firms were down-selected for the new OPV programme, Damen Schelde Naval Shipbuild-

ing (DSNS), Singapore Technologies Marine (STM), and India's Goa Shipyard, Limited (GSL). A contract award announcement initially expected in 2011 is now anticipated in 2012, followed by a construction contract by 2013.

The ROPCG has a requirement for 10 modern patrol craft. AMI estimates a programme for smaller patrol craft could commence with little advance notice by 2013 at an approximate cost of US\$150M.

In 2010, the RNO's "Qahir" class corvettes received an EW upgrade with installation of the VIGILE 200 electronic support measures (ESM) system. At the same time, four "Dhofar" (Province) class FACs received the smaller VIGILE 400, both provide enhanced EW surveillance, monitoring, and warning capabilities.

**SAUDI ARABIA:** The Royal Saudi Naval Force (RSNF) and Royal Saudi Ministry of Interior (MoI) Coast Guard (RSCG) maintain a modern, capable mix of frigates, corvettes, FACs, and patrol craft. In 2012, major acquisition decisions for new warships potentially equipped with a TBMD capability are expected. Past procurements included three "Sandown" ("Al Jawf") class mine countermeasures vessels (MCMVs) and three Type F-3000S ("La Fayette" class modified) frigates that have been purchased under the SAWARI II Programme from THALES (prime contractor) and built by DCNS (see figure 1).

The Kingdom also plans to acquire an under-sea capability and possibly a helicopter carrier. It is expected that some major naval procurement decisions might see delays due the passing of Crown Prince Sultan and appointment of Prince Salman to the Defense and Aviation Minister post.

Over the next 20 years, AMI projects that the RSNF and RSCG will bring some 300 new hulls into service from fast intercept craft to frigates, and possibly destroyers will enter service.



Fig. 3: In 1992, Qatar ordered four "Barzan" (Vita) class fast strike craft for the Qatar Emiri Navy from the British shipbuilder Vosper Thornycroft. The first two boats, QENS "Barzan" and QENS "Huwar", were handed over to the Qatar Emiri Naval Forces in 1996 and the final two boats, QENS "Al Udeid" and QENS "Al Deebel", were delivered in 1998. (Photo: Courtesy of Qatar Emiri Naval Forces)



A small (1,000 tons) conventional submarine force may also be acquired. The RNSF is looking at the US Navy's Littoral Combat Ship (LCS) and the „Arleigh Burke“ class destroyers as elements of a sea-based TBMD solution.

The RNSF has been reviewing designs for a Frigate Replacement Programme since 2005. The RSNF eventually intends to acquire two new frigates classes permitting retirement of the fleet's 1980-era „Badr“ corvettes and „Al Siddiq“ FACs (see figure 6). RSNF Frigate Replacement Programme options differ considerably in capability and size ranging from Lockheed Martin's 2,800 tons LCS to the 9,500 tons „Arleigh Burke“ class destroyer. European candidates include DCNS' FREMM and a variant of BAE Systems „Daring“ class destroyer.

AMI understands the RSNF has re-evaluated frigate proposals and may issue an RfP sometime in 2012 for four hulls with a construction contract in 2013. If so, the first unit could enter service in 2016, with all hulls commissioned by 2019. Modernised CMS will enable the „Madina“ class corvettes to serve to at least 2020. This may delay a replacement corvette acquisition until at least 2018.

In 2004, the RSNF reviewed ASW helicopter options with the aim of providing the capability for „Al Riyadh“ (Type F-3000S) class frigates, although no further action was taken. More recently, reports of helicopter carrier acquisition discussions between the Saudi Ministry of Defense and Aviation (MoDA) and BAE Systems UK may signal the intent by Saudi Arabia to look again at naval helicopter options.

To balance the perceived threat of Iran's expanding submarine fleet, the RSNF has developed requirements for a modern diesel-powered

submarine. With planning underway since 2009, AMI predicts an RfP for a new build or transfer of existing submarine hulls this or next year, with a construction contract for two new-construction units by 2015. Based on comments of the Chief of Staff RSNF, Adm Al-Wakadani, AMI also anticipates the RNSF will also seek to acquire up to six swimmer delivery vehicles/mini-submarines.

In mid-2010, the MoI issued an RfP for new patrol boat and craft. Possibly up to four new hull classes may be acquired and, if funded, would represent one of the largest regional naval procurements over the next five years. A programme estimated to be worth approximately US\$3-4Bn would fund utility boats, command and control ships, Coast Guard OPVs, and high-speed interceptors.

**IRAN:** Iran's maritime capabilities remain robust by regional standards, with surface ships, submarines, aviation, shore-based coastal defence, and asymmetrical 'guerilla' naval forces of the Revolutionary Guard Corps, occupying a prominent role in the Iranian force mix. Iran showcased all of these capabilities in the VELAYAT 90 naval manoeuvres in early 2012, which simulated a closure of the Straits of Hormuz by the Iranian Navy and Islamic Revolutionary Guard Corps Navy (IRGCN). The manoeuvres included test-firings of sea- and shore-based anti-ship missiles. Iran cited the firings as proof of the Iranian Navy and IRGCN's capabilities to enforce a blockade of the strategic sea-lane – if so called upon by the Iranian Supreme Leader, who is the Iranian Armed Forces Commander-in-Chief.

Together the Iranian Navy and IRGCN currently operate approximately 1,000 ships and

craft, while continuing to modernise inventories of boats, ships, and submarines. In November 2011, three IRGCN „Ghadir“ class mini-submarines were delivered while a „Wellington“ class air cushion vehicle (ACV) was equipped with domestically-produced anti-ship/surface-to-surface missiles, thought to be the new QADER missile.

In January 2011, the Iranian coastal defence forces merged with the Iranian Navy to increase readiness and operational range of road-mobile C-801 and C-802 SACCADE surface-to-surface missiles, now being augmented with the new FATEH 110 anti-ship ballistic missile. Supreme Leader Ayatollah Khamenei praised the IRGC and the Iranian Navy cooperation protecting the coastal waters, noting interoperability between IRGC swarm boats and the new IN coastal defense command.

The Iranian Navy and IRGCN continue to invest in domestic shipbuilding programmes started in late 1990s. Work continues on the second and third of six planned „Zolfaqar“ class corvettes while „Sina“ class FAC units four to 10 will commission by 2017. Acquisition of a new FAC is anticipated upon completion of „Sina“ class hull deliveries. Iranian sea services (in particular the IRGCN) are expected to continue acquisition of a range of small fast patrol craft through the remainder of the decade. Replacements for medium landing ships (LSMs) built in the 1980's to support installations on islands off the Iranian coast are also long overdue.

Over the past decade, Iran has developed a domestic submarine-building capability. Initially, producing submarines limited to 120 tons displacements, including the „Ghadir“ class, in

Fig. 4: The „Baynunah“ class missile corvettes which are based on the Combattante BR70 design, are optimised for patrol and surveillance, mine-laying, interception, and anti-surface warfare operations in the UAE's territorial waters and EEZ. (Photo: Internet)







◁ Fig. 5: BAE Systems Surface Ships is constructing three helicopter-capable missile corvettes under Project KHAREEF. The corvettes are deployed in extended surveillance patrols, deterrent operations, SAR missions, joint and coalition operations as well as disaster relief missions. (Photo: Courtesy of BAE Systems)

▽ Fig. 6: The Royal Saudi Navy's "As Siddiq" class missile craft will be replaced in the upcoming years. Seen here is the missile craft "Oqbah" (525) participating in an exercise with ships of the Iwo Jima Expeditionary Strike Group (ESG) during a bilateral exercise in the Persian Gulf. (Photo: Courtesy of US Navy)

2007 with Russian assistance, Iran began construction of a larger diesel-electric submarine. The resulting "Qaeem" class, a coastal submarine displacing 500 to 1,000 tons is apparently based on the Russian AMUR 950 design and will be capable of launching torpedoes, mines, and possibly missiles.

Intended to replace the Iranian Navy's "Tareq" (KILO) submarines that are expected to reach the end of their service life by 2020, the first "Qaeem" is anticipated for 2012. A total of five are planned. As an interim measure intended to retain capability, the Iranian Navy may look to procure three additional new KILOs by 2015.

**YEMEN:** Facing no identifiable conventional military threat, Yemen's ongoing internal civil conflict has shifted attention away from the sea services. This conflict has also contributed to insecure borders – land and sea – accessible to international terrorist groups moving from the Middle East to Africa. The Yemeni Coast Guard (YCG), created in 2001, was merged amidst maritime security concerns prompted by terrorist attacks on ships in Yemen's ports and territorial waters. However, the service has had limited success in improving maritime security in Yemeni waters. The Yemeni Navy (YN) and YCG currently have a small fleet of 52 FACs, patrol, amphibious, and MCMVs – all of which have been received from a myriad of sources. The lowest priorities within the Ministry of Defence – the sea services, are limited by maintenance and repair shortfalls. Over the past decade, Yemen has acquired three Chinese



"Huanfeng" class FACs and four Polish-built amphibious vessels, including one NS-722 class LSM and three "Deba" class utility landing craft (LCUs). These procurements make up the bulk of the YN fleet with only two outstanding requirements for future naval acquisitions.

A replacement programme for ageing Soviet-built "Tarantul I" class and Chinese built "Huanfeng" class FACs is not expected until 2015. Requiring a credible minesweeping force to protect the Bab el Mandeb Strait and its

coastal waters, the YN has a second programme to update ageing single Soviet-built "Natya I" and five "Yevgenya" class MCMVs. As a less costly solution, replacements are more likely to be sought on the used international market. The YCG has an unfulfilled short-term requirement for up to 10 new patrol craft. A shipbuilder selection was expected in 2011 in response to tender released in 2010 for the first four of an anticipated 10 31-32m patrol craft. A supplier decision is expected in 2012.

**NAFO**