The Defence Industrial and Technological Base of the Gulf countries
 SOMMAIRE

INTRODUCTION .................................................................................................................................................. 3

1 – PROJECTIONS: EMIRIAN VISION 2021 AND SAUDI VISION 2030,
WHAT ARE THE GULF AMBITIONS? ........................................................................................................... 5

2 – THE FIRST STEPS IN THE IMPLEMENTATION OF A DITB ........................................................................ 6

3 – THE DITB’S LOCALIZATION STRATEGY THROUGH OFFSETS PROGRAMS ......................................... 7

4 – PUBLIC DEFENCE COMPANIES, MAJOR ACTORS IN THE ESTABLISHMENT OF A DITB............... 9

5 – INDUSTRIAL CAPACITIES AND INTERNATIONAL PARTNERSHIPS ......................................................... 10

6 – RESEARCH AND DEVELOPMENT, THE LIMITS OF THEIR AMBITIONS ............................................. 12

APPENDICES ....................................................................................................................................................... 15
The Defence Industrial and Technological Base of the Gulf countries

INTRODUCTION

Over the past decade, 7 of the 10 countries with the highest share of military spending in the world are in the Middle East: Oman (12% of GDP), Saudi Arabia (10% of GDP), Kuwait (5.8% of GDP), Jordan (4.8% of GDP), Israel (4.8% of GDP), Lebanon (4.5% of GDP) and Bahrain (4.1% of GDP).

The Gulf’s largest economic power, Saudi Arabia (GDP $796 billion), is the largest defence investor (3rd in the world after the United States and China) and the largest arms importer in the Middle East. Since the arrival of Mohammed Ben Salman in June 2017, military expenses have increased again, reaching $69.4 billion ($76.7 billion according to Military Balance).

The Gulf’s second largest economy, the United Arab Emirates (UAE) (GDP of $456 billion), is also ranked second in terms of military spending in the Middle East. In 2014, it spent $24.4 billion.

Although all the Arab Gulf countries (Iran is not mentioned in this note) spend large sums of money on their defence, only two countries have decided to take the plunge.

---

1 The 15 countries with the highest military spending allocate on average 4.2% of their GDP.
2 For the United Arab Emirates, there are no data after 2014. However, the country allocated on average 4.8% of its GDP between 2005 and 2014, according to World Bank data.
3 French Treasury Directorate General, "Letter of the Arabic Peninsula n°3" January 2019, p. 15
4 SIPRI Military Expenditures Database, p. 22.
7 Latest data available.
8 SIPRI Military Expenditures Database, op. cit. p. 21.
9 On average $130 billion per year for the Gulf Cooperation Council countries.
into a logic of technology transfer via financial or non-financial compensation (offsets). For Saudi Arabia and the UAE, the ambition to create a modern military industry that can compete in the international defence market is emerging as a strategic priority for the 21st century. It highlights a range of national and international interests.

These two States wish to develop their military defence industries with the rather traditional aim of:

- respond to threats against their national security;
- reduce their dependence on the powers that dominate the international defence market (Saudi Arabia is the second largest arms importer in the world, after India, accounting for 7% of the world’s $46 billion in arms imports, while the UAE ranks 4th, accounting for 4.6% of global imports);
- diversify their economies;
- consolidate their influence on the regional scene through the prestige resulting from the creation of a Defence industrial and technological base (DITB) and increase their military credibility;
- amplify their diplomatic power and achieve greater autonomy.

The other countries either do not have the human and technical resources to establish an autonomous DITB, despite their financial means (Qatar, Kuwait, Oman), or their autonomous political capacity (Bahrain).

But the financial and economic dimension is not the only vector that pushes the main Gulf States to undertake the establishment of a DITB. They are increasingly suspicious of the reliability of the United States as the sole guarantor of their security. The country’s behaviour during the "Arab springs" and the declarations of the American presidents on the "strategic pivot" towards Asia-Pacific led them to an accelerated reflection towards the search for an empowerment of the means of defence10.


I – Projections: Emirian Vision 2021 and Saudi Vision 2030, what are the Gulf ambitions?

The two leading Gulf countries, Saudi Arabia and the UAE, are integrating their approach to creating a DITB into a broader forward-looking vision that aims to embed their economies in the post-oil era. The money accumulated in their respective sovereign wealth funds is becoming the vehicle for a profound transformation of societies and the position of the two States in the future.

The UAE Vision 2021, which aims to diversify its economy so that it is no longer dependent on the oil sector, has made the knowledge economy a clear goal. The federation wants to be among the top 10 world powers in terms of innovation, triple their R&D spending (from 0.5% to 1.5% of GDP) and almost double the share of its skilled workers in the labour force.

As part of the implementation of this post-oil economic policy, the Vice President of the UAE, Prime Minister and Emir of Dubai, Sheikh Mohammed bin Rashid Al Maktoum announced the adoption of an "industrial strategy". While in 2015, only 10% of UAE's GDP came from the manufacturing sector, the 2021 vision foresees raising it to 30% in 2020. In addition, the weight of hydrocarbons in GDP has been less than 30% of GDP since 2015, the objective is to reduce this share to 20% in 2021, and to 0% within 50 years. This strategy aims to make the UAE a global platform for industries based on know-how, innovation and sustainability, with a particular focus on aviation and ship-building industries for the military sector.

The plan launched by the Saudi government in 2016 to diversify the Saudi economy entitled Vision 2030, envisages investing 50% of arms spending locally, as a reminder, currently Saudi Arabia invests 2% of its total military spending on its soil. The Kingdom aims to be on the list of the 25 largest arms sellers in the world. Its strategy is to focus first on low-complexity industries such as spare parts, armoured vehicles and ammunition, before expanding and considering more sophisticated equipment, such as military aircraft. The plan aims to create a national network of integrated services and industries.

---

12 Treasury "Economic and Financial Situation of the United Arab Emirates", 7 February 2019, p. 1 - https://www.tresor.economie.gouv.fr/PagesInternationales/Pages/7ec3f7a5-21bf-441a-b155-51b426655971/files/1e028064-0363-4f2b-aad4-b11d414da4cc
that will accelerate the country's autonomy and strengthen defence-related exports. To achieve this, the Kingdom wishes to integrate its defence companies into its territory, as indicated by Atiyah al-Maleki, Director General of National Production Support, "Project contracts related to military industries require a 50% nationalization rate. Plants are also obliged to produce equipment locally, instead of importing it, once the capacity has been acquired".

The Saudi Public Investment Fund (PIF), estimated at $224 billion, plays a key role here. Estimates assume that by 2030, the fund could control up to $2 trillion. The PIF will be involved in many sectors, including defence, as evidenced by the signing of a series of major agreements in 2017 between the United States and its subsidiary, SAMI.

2 – The first steps in the implementation of a DITB

Saudi Arabia and the UAE were among the first Arab countries to take a first step towards the establishment of a joint defence industry in the early 1970s within the Arab Organization for Industrialization (AOI), which also includes Egypt and Qatar. The purpose of this organization, with the new means offered by the surge in oil prices, was:

- To achieve a certain degree of self-sufficiency in conventional weapons;
- To promote inter-Arab cooperation and integration, limiting external pressures;
- To reduce the unit cost of military production by increasing production;
- To establish an advanced industrial base in the Arab world and train technical manpower;
- To provide additional income through the sale of surplus products to neighbouring Arab and/or Muslim countries as well as to developing countries.

The failure of the AOI in 1979 led Saudi Arabia to reassess its own objective in terms of defence industrial capability. In 1983 and 1984, the country set up a dedicated programme, the primary objectives of which were the use of technology transfers and

---

economic diversification. The first step was the construction of an arms factory in Kharj by the German company Heckler und Koch in the early 1980s, which could produce small and medium-sized firearms. In 1985, Saudi Arabia and the United States finalized the $3.7 billion "Peace Shield" programme to provide a comprehensive air defence system. This contract allowed a new element to emerge in the Saudi strategy, namely the inclusion of an offset clause in the purchase contract.23

3 – The DITB’s localization strategy through offsets programs

Offsets have played a major role in defence relations between Western and Middle Eastern countries. In the Gulf, Saudi Arabia and the United Arab Emirates have developed compensation policies focusing on technology transfer.

Saudi Arabia’s Economic Offset Programme (EOP) was launched in the mid-1980s.24 This was the first national offsets management program in the Gulf, followed by the UAE in 1991-1992.25 It has been designed to develop a number of projects that benefit private sector companies and partnerships between Saudi and foreign companies, usually in the form of joint ventures. The Saudi government is focusing on technology transfer to improve its own capacity to diversify and strengthen its economy. The first offset programme signed with the Americans in 1985 set a reinvestment rate for defence companies responding to calls for tenders of 30-35% of the value of equipment sold, over a maximum period of 10 years, in industrial projects or joint ventures that would provide highly skilled jobs for Saudi Arabians. The use of products or components of Saudi manufacture is preferred. Over the years, the main offset contracts26 have shown that the Saudi approach focuses on technology transfer and more specifically on training local workers. Apart from the compensation projects of the Peace Shield I & II and Al-Yamamah, the majority of foreign industrial groups have invested in sectors other than defence. Riyadh focuses on short-term security and capacity absorption rather than economic efficiency and development.27 In addition, it should be noted that while the Kingdom usually requires offset conditions, it often waives them for other American contracts for security reasons.

23 Ibid.
The UAE offset programme was initiated in 1992, after the first Gulf War, in order to benefit economically and commercially from the intense defence procurement policy\textsuperscript{28}. This program requires a reinjection equivalent to 60% of the contract value into the UAE economy\textsuperscript{29}. Defence groups are generally required to meet their offset obligations over a seven-year period. The investment must take the form of a profitable and sustainable joint venture in which a local UAE partner must hold at least 51% of the shares\textsuperscript{30}.

In 2007, the Offset Program Bureau (OPB), which is responsible for offsets management, created a subsidiary, Tawazun Holding, whose objectives are to develop companies through partnerships and strategic investments to bring added value to UAE industry in sectors such as aerospace, defence, automotive, ammunition, metals and technologies\textsuperscript{31}. In 2010, OPB announced new guidelines that allowed it to move from a model based solely on the profit generated by companies supported by parties obliged by the compensation program, to a model that places technology and goods production at the heart of the program, thus offering more flexibility to international entrepreneurs\textsuperscript{32}.

In 2012, OPB officially renamed itself Tawazun Economic Council, refocusing its areas of interest on aerospace systems, ammunition and weapons systems, land systems, naval systems, autonomous systems, advanced metals and materials, radars, communication systems, command and control systems and electronic systems\textsuperscript{33}.

Shortly before the opening of the UAE arms trade fair, IDEX 2019, an aspect of the new offset program was announced, allowing companies to spend in a wider range of sectors in the UAE, and no longer only in the defence sector. Although the details of the new policy are not yet clear, the general principles announced are considered an improvement by most analysts and arms suppliers\textsuperscript{34}.

\textsuperscript{29} « History and changes in the UEA offset program », op. cit.
\textsuperscript{31} https://www.tip.ae/about-us/tawazun-holding/
\textsuperscript{33} “Interview with Mr. Matar Ali Al Romaithi, Director of Offset Unit at Offset Program Bureau (OPB) of UAE”, EPICOS, February 10, 2011.
Public defence companies, major actors in the establishment of a DITB

Saudi Arabian Military Industries (SAMI), established in May 2017, is owned by the Saudi PIF. The entity is chaired by Ahmed el-Khateeb and headed by Andreas Schwer, a former member of the Board of Directors of the German company Rheinmetall Defense and former member of Airbus’ Directorate. SAMI is consolidating several existing companies to boost the DITB’s capabilities and achieve the objectives set by Vision 2030: it plans to contribute to $3.73 billion into Saudi GDP, increase the value of domestic exports by about $1.3 billion, invest more than $1.6 billion in research and development and create more than 40,000 jobs in the territory.\(^\text{35}\)

SAMI aims to become one of the 25 largest aeronautics and defence companies in the world, it is organised into 4 divisions:

- Defence electronics: C4Is (command, control, communication, computers and intelligence), but also sensors, radars, etc. This division focuses mainly on strengthening the kingdom’s skills in electronic warfare and cyber warfare, while aiming to produce naval combat systems and communication systems;
- Ground systems: production of wheeled and tracked armoured vehicles, turrets, logistics vehicles, unmanned ground vehicles (UVG);
- Aeronautics: development, construction, maintenance, repair and overhaul (MRO) of combat aircraft and drones;
- Weapons and missiles: production of small arms and other conventional weapons used by land forces, missiles fired from land, sea and air and guided weapons, launch systems and ammunition for the Royal Saudi Armed Forces and other countries.

The creation of the Emirates Defense Industries Company (EDIC) in 2014 – a merger of 16 public defence companies, employing 10,000 people\(^\text{36}\) – is a major event in the effort to locate UAE military spending. The company has enabled the integration and consolidation of a defence industrial base, following the merger of 3 major public investment funds, the Mubadala Development Company, which holds a 60% stake, Towazun Holding, and Emirates Advanced Investments Group\(^\text{37}\). As part of the government’s strategy to diversify the economy, this integrated platform benefits from economies of scale, while

---

35 Shaul Shay, "The Saudi Arabian Military Industries (SAMI), op. cit.
improving the returns and performance of its subsidiaries. Thus, the largest Emirates offset contracts converge towards them\(^{38}\). The Holding Company also wishes to become the regional centre for MRO\(^{39}\).

5 – **Industrial capacities and international partnerships**

Saudi Arabia seems to target almost all segments of the defence industry. The tangible results will depend to a large extent on a long-term technological development roadmap that has not yet been announced and on the development of local home-grown expertise. With regard to the latter, Saudi Arabia has established the *Saudi Technology Development and Investment Company* (TAQNIA) and the Abdulaziz Royal City for Science and Technology (KACST), two essential elements of the Saudi industrial and defence ecosystem, which are involved in technology transfer from international partners to Saudi Arabia and in the diffusion of local partners' technologies and skills.\(^{40}\) KACST, for example, is developing the Saqr UAV program, and TAQNIA has created various companies specializing in robotics, cybersecurity and satellite manufacturing. Together, the two companies are working with Antonov in Ukraine on the AN-132 multi-purpose light aircraft, in which KACST owns 50% of the intellectual property.\(^{41}\)

Since the beginning of reforms in the defence industrial sector, Saudi Arabia has also begun to diversify its strategic alliances for the construction of its DITB. In 2014, Saudi Arabia signed defence cooperation agreements with three countries: Indonesia, India and Pakistan. Ukraine, as mentioned above, and South Africa are also gradually entering the Saudi market. When the Americans refused to arm the Saudi drones, they turned to the South African company Denel Dynamics to arm the Seeker 400 drone, initially created for surveillance. The supply of drones is in line with the growing interest in border security. In 2016, the joint venture between Denel and Rheinmetall (a conglomerate of German companies) opened a projectile factory in Al-Kharj with the Saudi weapons giant, *Military Industries Corporation* (MIC). In the same year, *Denel* also began co-producing anti-tank missiles with the Saudi company *ITEAC Group*\(^{42}\).

---

38 Such as the involvement of *Boeing*, *Lockheed Martin*, *Raytheon*, *Rheinmetall* and *Thales in joint ventures with Edic subsidiaries*.


As for the UAE, the country has the largest number of GCC shipbuilding, aviation, unmanned systems and land systems companies, with 80 companies registered in Abu Dhabi, Dubai and Ras al Khaimah. Most of these companies are subsidiaries of various public investment funds. The federation would like to become the leading exporter in the region, diversify the country’s economy and align its defence industry with its desire to provide the best possible support to the Emirates armed forces. These companies provide services; MRO; firearms; ammunition and aviation components. The UAE already exports land vehicles, landing ships and air drones to the countries of the region, which allows it to claim the status of a regional locomotive. NIMR has set itself the objective of developing its activities in Southeast Asia (Indonesia, Malaysia, Philippines and Thailand) and Eastern Europe by 2016. Recent agreements with Belarus, the Czech Republic, Estonia, Serbia and Ukraine show that the UAE are following through on these intentions – and that they are becoming more associated with Russia and Eurasia. The Emirates are also actively working in partnership with other countries in the MENA region. In 2012, NIMR also signed a co-production agreement for troop transport vehicles with Algeria. The decision to produce 2,500 NIMR vehicles locally in Algeria also suggests that the UAE are seeking an entry point into African markets – a purely economic approach, as Abu Dhabi and Algiers do not share the same geostrategic interests, whether in relation to the Syrian civil war or the conflicts in Yemen and Libya.

The UAE also differs from the defence industries of other Arab countries in that it is the only country with proven combat systems. The intervention in Yemen was a test battlefield for Emirati munitions. In July 2015, NIMR II Ajban 440A was observed in Yemen. The Enigma 8x8, designed by Emirates Defense Technology specifically for the Emirates Federal Military Forces, was also reportedly deployed for the first time. The latest NIMR vehicle, the N35, was also spotted in Yemen in 2017. On the maritime front, the Saudi coalition has allowed Baynunah class corvettes as one of the few ships to enter embargoed ports.

---

6 – Research and development, the limits of their ambitions

The most significant obstacle that the UAE will face in creating a sustainable DITB is demographics. Indeed, with 88% of immigrants, the country has only limited human resources from which to draw to meet its aspiration of becoming a leader in the knowledge economy market. The lack of national staff pushes the Emirates to use foreign engineers and highly skilled workers, which does not necessarily guarantee sustainable industrial progress. In 2008, the UAE set up the National Research Foundation to develop an innovative and internationally competitive research environment. According to World Bank data, the UAE has doubled its share of R&D spending as a percentage of GDP in 5 years. Indeed, the share of R&D spending has increased from 0.47% in 2011 to 0.98% of GDP in 2016.

With regard to Saudi Arabia, the recruitment of qualified nationals in science, technology and engineering causes also a serious problem, and the quality of education is below the standards of developed countries.

Although both countries rank above most of their neighbours in terms of knowledge economy, and have made enormous progress in recent years, they rank far behind the most successful economies, capable of providing the necessary framework for a national defence industry. In 2018, the Kingdom ranked 60th out of 119 countries in the Global Talent Competitiveness Index's (GTCI) global knowledge ranking while UAE ranked 43rd.

Saudi Arabia and the United Arab Emirates have made significant progress in the education and vocational training sector, but it will take at least another five to ten years for this investment to bear fruit and have a positive impact on military industrialization efforts. At present, there are simply not enough people with a technical diploma and/or training to be employed in the production and maintenance of weapons.

Aware that they are not in a position to realistically innovate in future generation technologies, the emerging defence industries often focus their industrial capabilities on the multiple forces that can be integrated into systems. Technological limitations and lack of human resources will inevitably hamper Gulf countries' plans.

51 Florence Gaub and Zoe Stanley-Lockman, idem, p. 61.
The establishment of a sustainable DITB, despite heavy financial resources invested, is not a guarantee of success. Previously, countries such as Argentina, Brazil or Indonesia (in the aeronautics sector) have had good starts and then face up to the harsh reality. Saddam Hussein’s Iraq, despite very strong training efforts, had failed, as had Gaddafi’s Libya. On the other hand, Iran has succeeded because it has respected the criteria for success:

- A coherent society and economy;
- An efficient education system;
- Care given to intermediate professions (supervisors, technicians, etc.);
- A long-term political will.

Otherwise, the emergence of a successful technology sector in a given country is only the result of a set of positive factors which are the sum of the qualities of the entire country\textsuperscript{52}.

Everything will depend on Saudi Arabia and the Emirates’ ability to effectively meet these criteria and anticipate in the long term the departure of the United States. These countries must therefore commit themselves to a profound transformation of their societies. While the UAE seems to have some assets and a head start in this area, Saudi Arabia is actually far from having embarked on this transformation. This is the high-risk bet of Crown Prince Mohamed Ben Salman – changing Saudi society to a forced march. It is however doubtful whether this goal will be achieved.

As for France, it contributes significantly to the supply of arms to the main countries of the Arab Gulf\textsuperscript{53}. It is also involved in more or less binding defence agreements with Kuwait\textsuperscript{54}, Qatar\textsuperscript{55}, the United Arab Emirates\textsuperscript{56} and Saudi Arabia\textsuperscript{57}. These cooperations, which are

---

\textsuperscript{52} With the exception of successful niche strategies at the cost of considerable renunciations, such as Pakistani nuclear power or North Korea’s.


\textsuperscript{54} Defence agreement since 1992, following the war. Decree No. 2010-1115 of 22 September 2010 publishing the Agreement on Defence Cooperation between the Government of the French Republic and the Government of the State of Kuwait, signed in Paris on 21 October 2009 https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT00000022845743&categoryLink=id

\textsuperscript{55} Signing of a comprehensive “strategic dialogue” agreement including security, economics and culture on 11 February 2019, supplementing the Technical Agreement on the modalities for implementing defence cooperation of 25 October 1998.


\textsuperscript{57} Agreement on Military Cooperation and Assistance between the Government of the Kingdom of Saudi Arabia and the Government of the French Republic of October 9, 1982.
The Defence Industrial and Technological Base of the Gulf countries characteristic by, among other things, considerable arms transfers, could in the long term be affected by the growing empowerment of the last two countries. As in Asia in particular, large contracts are accompanied by technology transfers. Offset strategies, now systematic, contribute to the development of local industries. However, what was once symbolic has contributed, in countries such as China and South Korea, to shaping a national civil and military industry that is equivalent in quality to the industries of exporting countries, or even exceeds them in some areas. In recent years, these two countries have become direct and effective competitors of their former suppliers. Even if the conditions for a real industrial take-off are not yet in place in the Gulf countries and strong societal barriers remain, France should not dismiss itself from a general reflection on its armament policy in the area and on the support it provides in the long term.
## Appendices

**Table n° 1: Emirati Defence Companies Created Through an Offset Contract**

<table>
<thead>
<tr>
<th>Company</th>
<th>Area of specialization</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Abu Dhabi Autonomous Systems Investment, a subsidiary of Tawazun</strong>⁵⁸</td>
<td>Manufacturing of industrial capacities in autonomous systems</td>
</tr>
<tr>
<td><strong>Abu Dhabi Ship Building</strong>⁵⁹</td>
<td>Ship repair, overhaul and construction</td>
</tr>
<tr>
<td><strong>Abu Dhabi Systems Integration, a subsidiary of Abu Dhabi Ship Building</strong> and <strong>SELEX ES</strong>⁶⁰</td>
<td>Design, development, integration and maintenance of naval combat and electronic systems</td>
</tr>
<tr>
<td><strong>Adcom Systems</strong>⁶¹</td>
<td>Manufacture of drones, air targets, air traffic control radar, and advanced communication systems</td>
</tr>
<tr>
<td><strong>Al Jaber Group</strong>⁶²</td>
<td>Construction and development of infrastructure, buildings and industrial sites</td>
</tr>
<tr>
<td><strong>Al Marakeb and Raytheon International</strong>⁶³</td>
<td>Manufacture of autonomous surface vehicles to improve maritime surveillance</td>
</tr>
<tr>
<td><strong>Advanced Military Maintenance, Repair and Overhaul Centre</strong>, a joint venture owned by Mubadala, Sikorsky Aerospace Services and Lockheed Martin⁶⁴, integrated into EDIC</td>
<td>Aircraft maintenance and support services to the UAE Armed Forces and other military operators throughout South Asia, the Middle East and North Africa</td>
</tr>
<tr>
<td><strong>Advanced Technology Investment Company</strong>, a subsidiary of Mubadala⁶⁵</td>
<td>Semiconductor industry</td>
</tr>
<tr>
<td><strong>Al Taif Technical Services, a subsidiary of Mubadala</strong>⁶⁶</td>
<td>MCO of defence system equipment and components</td>
</tr>
<tr>
<td><strong>Al Yah Satellites Communications Company</strong>, a subsidiary of Mubadala⁶⁷</td>
<td>Satellite systems</td>
</tr>
</tbody>
</table>

---

⁵⁹ ADSB, http://www.adsb.ae/
⁶⁰ ADSI, http://www.adsi.ae/
⁶⁴ AMMROC, http://www.ammroc.ae/
⁶⁶ Al Taif, http://www.altaif.ae/about.asp
⁶⁷ Al Yah Satellite, http://www.yahsat.ae/SitePages/AboutUs.aspx
### The Defence Industrial and Technological Base of the Gulf countries

<table>
<thead>
<tr>
<th>Company</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATK Middle East, a joint venture between Al Tuff International and Orbital ATK (acquired by Northrop Grumman Innovation Systems)</td>
<td>Manufacture of ammunition, precision and strike weapons, missile warning systems and tactical missile engines for air, sea and land transport</td>
</tr>
<tr>
<td>Bayanat for Mapping &amp; Surveying, a subsidiary of Mubadala, integrated into EDIC</td>
<td>Geospatial surveying, mapping and information gathering services</td>
</tr>
<tr>
<td>Burkan Munitions Systems, a joint venture between Tawazun Holding and Al Jaber, integrated into EDIC</td>
<td>Manufacture, assembly and testing of a wide range of infantry, artillery and aircraft munitions</td>
</tr>
<tr>
<td>Caracal International, a subsidiary of Tawazun Holding, integrated into EDIC</td>
<td>Manufacture of firearms, snipers and other small arms</td>
</tr>
<tr>
<td>EDIC and Reliance Defense Ltd (India)</td>
<td>Manufacture and MCO of land, sea and aircraft vehicles, weapons, electronic defence systems</td>
</tr>
<tr>
<td>Emirates Training Technology, a joint venture between Cubic Corporation (United States) and Emirates Defense Technology</td>
<td>Military training and education, range design</td>
</tr>
<tr>
<td>Fidelity Middle East, a joint venture between Fidelity Technologies Corporation and Al Tuff International</td>
<td>Various military support services</td>
</tr>
<tr>
<td>Global Aerospace Logistics</td>
<td>MCO of space systems and professional services</td>
</tr>
<tr>
<td>Gulf Logistics and Naval Support, a joint venture between Abu Dhabi Ship Building and BVT Surface Fleet</td>
<td>Wide range of maritime defence force support services covering the full spectrum of integrated logistics support and training</td>
</tr>
<tr>
<td>Horizon Flight Academy, a subsidiary of Mubadala, integrated into EDIC</td>
<td>Military aircraft and helicopter flight training</td>
</tr>
<tr>
<td>IGG-ASELSAN, a joint venture between the Emirates group IGG and the Turkish public company ASELSAN</td>
<td>Development and manufacture of remotely operated weapon systems</td>
</tr>
<tr>
<td>IGG Photonis Night Vision, a joint venture between IGG and the French company Photonis</td>
<td>Manufacture of night vision devices adapted for military use</td>
</tr>
</tbody>
</table>

---

68 ATK Middle East, http://riguae.ae/atkmiddleeast.html  
69 Bayanat, www.bayanat.co.ae  
70 Burkan, http://www.burkan.ae/  
71 Caracal, http://www.caracal.ae/new/  
73 Emirates Training Technology, http://www.emiratestraining.ae/range-design-training-services/  
74 Fidelity Middle East, http://riguae.ae/fidelity-middleeast.html  
75 GAL, http://www.gal.ae/  
77 Horizon, http://www.horizonuae.ae/  
<table>
<thead>
<tr>
<th>Company</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mahindra Emirates Vehicle Armouring&lt;sup&gt;80&lt;/sup&gt;</td>
<td>Engineering, prototyping and manufacturing of armoured vehicles</td>
</tr>
<tr>
<td>Nibras Al Ain Aerospace Park, a joint creation between Mubadala Aerospace and Abu Dhabi Airport Company Mubadala&lt;sup&gt;81&lt;/sup&gt;</td>
<td>Building a sustainable aerospace industry in the UAE</td>
</tr>
<tr>
<td>NIMR Automotive, a subsidiary of Tawazun&lt;sup&gt;82&lt;/sup&gt;</td>
<td>Manufacture of military vehicles</td>
</tr>
<tr>
<td>Rockford Xellerix, a subsidiary of Tawazun Holding&lt;sup&gt;83&lt;/sup&gt;</td>
<td>Design and manufacture of electronic and mechanical systems</td>
</tr>
<tr>
<td>Strata, a subsidiary of Mubadala&lt;sup&gt;84&lt;/sup&gt;</td>
<td>Aerospace industrial base for the UAE (and potentially more broadly)</td>
</tr>
<tr>
<td>Tawazun Advanced Defence Systems, a subsidiary of Tawazun Holding which merged with Caracal International</td>
<td>Manufacture of firearms, snipers and other small arms</td>
</tr>
<tr>
<td>Tawazun Dynamics, a joint venture between Tawazun Holding and Denel Dynamics&lt;sup&gt;85&lt;/sup&gt;, integrated into EDIC</td>
<td>Design, manufacture, supply and maintenance for the precision guided munitions (PGM) sector</td>
</tr>
<tr>
<td>Tawazun Precision Industries, a subsidiary of Tawazun Holding&lt;sup&gt;86&lt;/sup&gt;, integrated into EDIC</td>
<td>Various industrial services including engineering, production, repair and overhaul of production units</td>
</tr>
<tr>
<td>Tawazun Safety, Security &amp; Disaster Management City, a subsidiary of Tawazun Holding&lt;sup&gt;87&lt;/sup&gt;</td>
<td>Technical and vocational training in security, safety, crisis and disaster management operations</td>
</tr>
<tr>
<td>Thales Advanced Solutions, a joint venture between the Thales group and EDIC&lt;sup&gt;88&lt;/sup&gt;</td>
<td>Satellite communication, radar, radio, network and support</td>
</tr>
</tbody>
</table>

---


<sup>82</sup> [NIMR, http://www.nimr.ae/](http://www.nimr.ae/)


<sup>85</sup> [Tawazun Dynamics, http://www.tawazundynamics.ae/](http://www.tawazundynamics.ae/)

<sup>86</sup> [Tawazun Precision Industries, http://www.tpiuae.ae/?cmd=app__intro](http://www.tpiuae.ae/?cmd=app__intro)


<table>
<thead>
<tr>
<th>Company</th>
<th>Area of specialization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abdallah Al Faris Armored Vehicle Factory&lt;sup&gt;89&lt;/sup&gt;</td>
<td>Manufacture of armoured vehicles</td>
</tr>
<tr>
<td>Advanced Arabian Simulation Company&lt;sup&gt;90&lt;/sup&gt;</td>
<td>Design, development, implementation and manufacture of military training and simulation devices, various consulting services</td>
</tr>
<tr>
<td>Advanced Electronics Company&lt;sup&gt;91&lt;/sup&gt;</td>
<td>Manufacture of modern electronic systems, integration and repair of maintenance systems and services</td>
</tr>
<tr>
<td>Alsalam Aircraft Company&lt;sup&gt;92&lt;/sup&gt;</td>
<td>Aircraft maintenance, modifications and technical support</td>
</tr>
<tr>
<td>Aircraft Accessories and Components&lt;sup&gt;93&lt;/sup&gt; Company</td>
<td>Overhaul of aircraft components in several areas such as mechanics, hydraulics, pneumatics, electrical and fuel system components</td>
</tr>
<tr>
<td>Armored Vehicles &amp; Heavy Equipment Factory&lt;sup&gt;94&lt;/sup&gt;</td>
<td>Manufacture, modernization and armouring of military vehicles</td>
</tr>
<tr>
<td>International Systems Engineering&lt;sup&gt;95&lt;/sup&gt;</td>
<td>Systems engineering and development, information technology and related services</td>
</tr>
<tr>
<td>Middle East Propulsion Company&lt;sup&gt;96&lt;/sup&gt;</td>
<td>Manufacture of propulsion systems and maintenance, repair and overhaul services</td>
</tr>
<tr>
<td>SADEC&lt;sup&gt;97&lt;/sup&gt;, a joint venture between ASELSAN (Turkey) and Taqnia Defense and Security Technologies</td>
<td>Design, development, manufacture and sale of electronic equipment, radars and electro-optical systems for military and civil applications</td>
</tr>
<tr>
<td>SAMI Navantia Naval Industries&lt;sup&gt;98&lt;/sup&gt;, a joint venture between SAMI and Navantia Naval</td>
<td>Integration of naval combat systems, systems engineering and architecture, hardware design, software development, testing and verification, prototyping, simulation and modeling, as well as installation and integration of combat systems on the last two ships of Project 2200, as well as logistics support and training programs.</td>
</tr>
<tr>
<td>SAMI in partnership with Rheinmetall Denel Munition&lt;sup&gt;99&lt;/sup&gt;</td>
<td>Manufacture of mortars, artillery shells and air-to-ground bombs</td>
</tr>
</tbody>
</table>

---

<sup>90</sup> [https://www.epicos.com/company/13072/advanced-arabian-simulation-co](https://www.epicos.com/company/13072/advanced-arabian-simulation-co)
<sup>92</sup> Ibid.
<sup>93</sup> Ibid.
<sup>94</sup> Ibid.
<sup>95</sup> Ibid.
<sup>96</sup> Ibid.
| Joint venture between Taqnia and DigitalGlobe (United States)\(^{100}\) | Development of satellite recognition systems |
| Agreement to create a new joint venture between SAMI and Boeing\(^{101}\) | Supply, MRO services and installation of weapons on military aircraft and helicopters of the Saudi Armed Forces |
| Agreement to create a new joint venture between SAMI and Thales\(^{102}\) | Development and manufacture of modern and high-performance turrets and armed systems for armoured vehicles |
| Agreement to create a new joint venture between SAMI and CMI Defence (Belgium)\(^{103}\) | Development and manufacture of modern and high-performance turrets and armed systems for armoured vehicles |
| Agreement to create a new joint venture between SAMI and Naval Group (\(^{104}\)France) | Development of Saudi Arabia’s naval capabilities |
| Agreement to create a new joint venture between SAMI and L3 Technologies\(^{105}\) | Development of an EO / IR industry (electro-optical and infrared) for sensor systems |

---


