

# EMIRATES STAR PORT

## A PROPOSED UAE “SPACE SECTOR FREEZONE”

by

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The space sector in the UAE is still in its infancy and although no federal space program exists, there are a number of ongoing yet independent space activities.

To aspire towards introducing space technology to the UAE, the **Emirates Institution for Advanced Science and Technology (EIAST)**, established under an Emiri decree by the Government of Dubai, appointed South Korea's SATREC-I to develop DubaiSat-1, and train a team of Emirati engineers on the subject of satellite engineering design and development. DubaiSat-1 was successfully launched on the 29<sup>th</sup> July 2009. The organisation is unique inasmuch that its emphasis is to focus on 100% Emiratisation and at this point in time EIAST is perhaps the closest the UAE has to a space organisation.

On the space applications front, **Thuraya** commissioned its third mobile telecommunication satellite in early 2007 and **Yahsat**, wholly owned by MUBADALA – the investment arm of the Abu Dhabi government, procured a dual telecom satellite system at the cost of \$1.7B and is due to be launched in 2010 and 2011. **SmartSat**, a joint venture between Jordanian SmartLink and Kuwaiti Al Jawhara Holding, to be located in Dubai recently announced plans to invest \$500M in a satellite to deliver telecommunication, broadcasting and TV broadcasting throughout the MENA region. Its planned launch is in 2011. US based 4C Controls Inc. in partnership with Abu Dhabi based Hydra Trading LLC announced plans to establish a \$1B **4C Gulf Earth Observation Centre (GEOC)** operating a series of high resolution Earth observation satellites.

GEOC also plans to offer undergraduate courses in space engineering in association with Politecnico Di Torino of Italy. In 2008, the Lootah Technical Centre (LTC) formed **LSE Space Middle East** which is a joint-venture with the LSE Space Engineering and Operations AG of Germany to offer space related education but both projects are still in their infancy.

The **UAE Space Reconnaissance Center**, an element of the UAE Air Force, currently has a ground receiving station used to obtain high resolution images for the purpose of surveillance. The Dubai based **Global Scan Technologies** provides consulting services for clients interested in remote sensing and graphical information systems.

US based **Space Adventures**, the only company thus far to arrange orbital space flights for private paying passengers is presently working with the Emirate of Ras Al Khaimah to establish a Spaceport in the UAE and **Virgin Galactic**, who plan to offer sub-orbital flights from 2010 has a regional sales office in Dubai and recently signed an agreement with Abu Dhabi based **Aabar Investments** who procured a 32% stake in the private spaceflight company.

From an entertainment perspective, the Dubai based Space Investment Company announced it will be establishing a Space Camp known as **Space World Arabia** in Ras Al Khaimah and OSUS, a property developer, in association with Dubai Municipality recently inaugurated its space related theme park called **Stargate** in Zabeel Park, Dubai with a focus on edutainment.

One can therefore conclude that space in the UAE is happening but in order to tap into the ~\$250B space sector, a more adventurous federal (or individual Emirate) policy will be required. As summarised above, the UAE is currently focussing on issues associated with satellite engineering (research and development), space applications (i.e. telecommunications and remote sensing/earth observation) and space related entertainment/edutainment but space commerce and space education on a large scale have yet to have been addressed and the latter's introduction into the educational curriculum of higher educational institutions will only be logical if there are employment opportunities created by the former.

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The proposal therefore would be to aspire to establish a 'Space Sector Freezone' referred to in this Op-Ed as the **Emirates Star Port** in order to create the necessary environment to attract international space corporations (satellite manufacturing and sales/marketing) to the UAE in order to cater for clients in the MENA and South Asia region.

Prior to addressing the rationale and argument in favour of investing in the infrastructure for the Emirates Star Port, let us talk briefly about where the space sector originated and how it fits into the overall road-map of aerospace activities within the UAE.

In the 1950's, the space sector was spawned from the aviation industry. The space and aeronautics sectors have always been parallel industries while at the same time there exists a great deal of synergy between the two. Technological advances in one field tend to benefit the other which explains why major aeronautics and aviation companies such as Boeing, Lockheed Martin and EADS Astrium are also involved with space. From an engineering perspective the civil, military and space sector share a common design, development, test and evaluation philosophy. All three elements of the aerospace sector employ a process defined by three letters; **A I V** which stands for assembly, integration and verification.

Both Dubai Aerospace Enterprise and MUBADALA's Aerospace and Technology Unit currently operate their own MRO (Maintenance, Repair and Overhaul) facilities for commercial and/or military aircraft, either directly or via their subsidiaries. MUBADALA recently signed an agreement to produce composite components for Airbus so the next logical step after MRO and the production of aircraft parts will be the assembly and integration of aircraft components which covers the "A and I" aspect of the AIV process. The "V" or Verification factor is only necessary to those who wish to design and develop their own aerospace systems which one assumes is part of the overall Emirati strategy. Verification of a component or subsystem depends on the product and the process is more intensive for space engineering than for aircraft. The vast majority of satellites or spacecraft launched into orbit a) cannot be retrieved for servicing and b) have to be designed to withstand harsher levels of tolerance compared to the environments experienced by military or civil aircraft. Therefore aspiring to attain proficiency in the AIV process for spacecraft will afford advanced qualifications to system conditioning engineers to handle AIV process for aircraft and other engineering sectors such as the electronics and automotive industry.

An Emirates Star Port can therefore be considered a win-win situation for all parties concerned.

- **Corporate companies** will benefit from the Emirates Star Port since the percentage profits shall be much higher due to zero corporate tax thus allowing companies to reduce their sales price if they so wish. From the increase in profit companies could choose to spend more money on R&D presenting them with an opportunity to become more competitive in the future.
- **Client nations**, in particular those from developing countries, will benefit from the competitive pricing offered by the international suppliers operating out of the freezone. The inclusion of a preferential financing mechanism would be beneficial to assist aspiring space nations to qualify for interest free or 'soft' loans.
- **The UAE** will benefit from an influx of high specification employment opportunities leading to the country becoming a regional hub of space technology which in turn increases education standards in the field of science and technology. A proactive approach to investing in the space sector will fall into line with the UAE's existing aeronautics/aviation strategy.

One should consider the Emirates Star Port as an infrastructure that allows other infrastructures to grow but before such a proposal is implemented, it is essential to perform the necessary due diligence in order to ascertain if international space corporations are willing to establish local satellite engineering production centres together with their sales, marketing and finance offices in the UAE.

The UAE certainly has the potential to become a major regional centre of excellence in space technology but it remains to be seen if synergy between existing aeronautics/aviation strategy and the space sector as well as high end employment opportunities is argument enough to commission a feasibility study into this proposed Emirates Star Port venture.