Parliament building courtesy Shutterstock.

Up and coming in the satellite industry

The creation of a space industry within a country is linked with economic development and increased prosperity, and Azerbaijan is the latest to join the ranks of the space-bound with the development of a communications and remote sensing satellite. Satellite Evolution finds out more about Azerbaijan's space ambitions and its co-operation with Malaysian satellite operator MEASAT on the Azerspace/Africasat-1a program.

It is the largest country in Caucasus and situated at the crossroads of Western Asia and Eastern Europe with a rich and ancient heritage. The 21st century now sees Azerbaijan asserting itself on the world space stage.

Azerbaijan is a country rich in natural resources, such as oil, that gained independence from the Soviet Union in 1991. With a population of over nine million and a terrain of mountains and plateaus, Azerbaijan has its own challenges in bringing connectivity to the people living in remote and hard to reach mountainous areas. It is addressing these challenges with satellite technology – and the country has huge potential. In 2010, the ICT market in the country was worth US$1.55billion. Over last five years compound annual growth rate was 20 percent, and this is an indicative of the promise.

The Republic of Azerbaijan's location between Europe and Asia is both advantageous geo-economically and geographically. It is well suited for the preparation and launch of telecommunication satellites. The country wishes to establish and nurture its own space industry where its satellites are manufactured and controlled via an independent Azerbaijan space company. This independence will relieve the country's reliance on foreign operators for the exchange of information. Azerbaijan is a country with solid ambitions to evolve as a regional leader in information transmission. As such, satellites have been recognized as a key cog in this process due to their importance in terms of economic benefits and information security.

Communication in Azerbaijan and hopes for satellite

Satellite is already playing a part in the delivery of communications in Azerbaijan, for international and long distance communications and also for radio and TV broadcasting in the region. In many cases, satellite presents the only alternative to existing fibre-optic cable

networks and Azerbaijan is using satellite for the transmission of large volumes of information both within the country and on a transmit basis to other countries.

The country's radio, TV and telecommunication companies are currently leasing around 80-100Mbps of capacity from various satellite operators. The geographic nature of the region has prompted great interest in the potential of satellite communications systems. Azerbaijan is extremely mountainous – almost sixty percent of the country is covered by mountains. This makes it difficult or impossible to extend fibre networks to the population resident in these mountainous areas. Therefore, satellite – deployable anywhere - can provide an effective communications solution and the government of Azerbaijan expects a rise in demand for satellite services in the future.

It isn't just a question of connectivity alone though. It is a question of economic wealth. The use of satellite can also help Azerbaijan to become wealthier. The development of communications infrastructure brings with it opportunity. It brings access to the Internet, access to the global marketplace, improvement of education and developmental improvements. This use of satellite will also help to encourage investment from overseas to Azerbaijan by attracting new companies that provide services to end-users such as Internet Service Providers or satellite and cable TV operators.

Azerbaijan is one of nine Muslim countries that own a satellite and the country is extremely keen to increase the opportunities that enhanced communications bring. The satellite industry will not only boost the company's knowledge stream, but will also provide employment for around 150 highly qualified individuals and will help to nurture a new generation of engineers. The launch of the satellite will see Azerbaijan become the first country in the Caucasus region to own a satellite.

The Government of Azerbaijan regards the level of application of information and communication technologies as one of the main indicators of the socio-economic, intellectual, and scientific potential of a country, and the level of development of society in general. In addition, the government also places great emphasis on the application of ICT as a necessity for ensuring national security.

President Aliyev made remarks about the plans for the creation of a space industry for Azerbaijan during an interview with Interstate Television and Radio company, Mir: "...a lot has been done to modernize the country and invest in the sectors that will grow significantly in the future. First of all the information and communication technologies sector. We are creating our own space industry. Next year Azerbaijan's first artificial satellite will be put into orbit. In other words, we always look ahead, perhaps even a few steps ahead. Although we have immense oil and gas resources and are earning a lot on that, we want Azerbaijan's sustainable development not to depend on the oil price or the volume of oil production. In our case, the transformation of the "black gold" into human capital has turned out to be not just a slogan but a reality."

President Ilham Aliyev has taken a special interest in the development of information technologies within Azerbaijan. In fact, such is his interest in technology, he has accelerated the development and use of satellite communication services in the country. He signed a state program for the creation and development of the space industry in 2009.

Azercosmos

Azercosmos is an Open Joint Stock Company under the Ministry of Communications and Information Technologies and was established on May 3 2010, in order to achieve Azerbaijan's space aims and to develop and operate the country's telecommunication satellite. Azercosmos is an entity wholly owned by the Government of the Republic of Azerbaijan.

Azercosmos is also responsible for the delivery of LEO satellite systems for different civilian purposes such as disaster monitoring and management, environmental studies, mapping and more.

Azerspace/Africasat-1a – Azerbaijan's own satellite

Azerspace/Africasat-1a is a telecommunications satellite that will maintain a geostationary orbit and will be operated by Azercosmos OJS Co. This satellite will be placed in the orbital slot at 46 degrees East longitude, which has been leased from MEASAT. The Malaysia-based satellite operator has given its support to the Azerspace/Africasat-1a satellite and has secured transponder space on board the satellite to enable the company to address the African market. Paul Brown-Kenyon, MEASAT CEO told us more about the co-operation between the operator and Azercosmos: "We believe the co-operation with Azercosmos provides a win-win solution for both parties. The cooperation supports Azercosmos's objectives of launching its first national satellite to meet their requirements over Azerbaijan, Central Asia and Europe. The Azeri satellite also supports MEASAT's objectives to replace the Africasat-1 satellite, which is reaching its end of life, and expand the MEASAT presence in Africa and Europe."

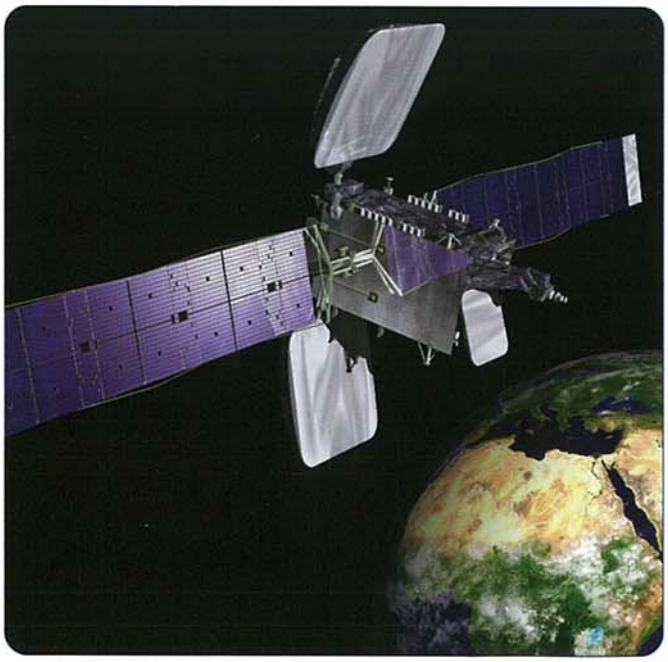
The strong partnership between the two entities is evident. Mr. Brown-Kenyon continued: "We have developed a strong working relationship with the Azercomos team which bodes well for the success of the program for both parties."

Orbital Sciences Corporation will design, build and deliver the Azerspace/Africasat-1a commercial communications satellite. The satellite will be based on Orbital's flight-proven STAR-2 platform and will generate approximately five kilowatts of payload power for 36 active transponders. The Azerspace/Africasat-1a satellite will carry hybrid Ku and C-band payloads to provide services to Azerbaijan, Central Asia, Europe and Africa.

Orbital will be responsible for providing the satellite and ground system.

Upon completion of in-orbit testing, operational control of the satellite will be handed over to the Ministry, which will continue to operate the spacecraft from its control centre in Baku. This latest order for one of Orbital's GEO communications satellites is the 31st STAR-class spacecraft to be ordered by customers throughout the world.

"The new contract with Azerbaijan represents the tenth commercial communications satellite order in the past two years for our Star satellites, demonstrating continued strong market demand and cus-



AzerSat1, courtesy Orbital Sciences.

tomer acceptance of our satellite platform and supporting ground services," said Mr. Michael Larkin, Orbital's Executive Vice President and General Manager of its Space Systems Group. "From the world's largest satellite operators, such as Intelsat and SES, to regional operators such as Optus, Star One and Telenor, and now Azerbaijan, Orbital is prepared to provide our comprehensive systems capabilities to all our customers."

Dr. Ali Abbasov, Minister of Communications and Information Technology for the Republic of Azerbaijan, stated: "The Azerspace/Africasat-1a project is a keystone to the advancement and progress of Azerbaijan as we significantly expand our communications infrastructure within our borders and our connectivity to Europe, Central Asia, Africa and the Middle East."

The satellite will be launched on board an Ariane 5 ECA launch vehicle at the end of 2012.

Benefits of Azerspace/Africasat-1a

Once in orbit, the satellite will provide broadcast and broadband services. For Azerbaijan, it is hoped that the creation of an independent satellite, developed in country, will help the country to assert itself more strongly and to develop economically and militarily. The launch of this initial satellite will help the country to achieve internal benefits through strengthening and protection of information security of the country. It will also eliminate the dependence of the country on other satellite networks and will provide the population of the country with high quality TV and radio broadcasting. In addition, the government will be able to establish much-needed high-speed Internet services.

Satellite connectivity will change the way in which the country can deal with emergencies, obtain information and to define ways of creating and developing the terrestrial infrastructure for receipt, processing, protection, distribution and use of space information.

Satellite networks can be rolled out quickly and inexpensively to hundreds or thousands of locations, connecting cities or remote locations across a large landmass, where copper or fibre is cost prohibitive. Since satellite networks can be set up quickly, companies can be fast-to-market with new services. The country can also look forward to the creation of new opportunities for the development of human resources in the country.

Externally, the satellite will be the gateway for Azerbaijan into the world satellite services market and enable them to expand and develop new services and platforms to meet public demand.

Finally, by developing partnerships with satellite operators like MEASAT, Azerbaijan will develop its position as a trusted partner, leading to further strategic partnerships in future to further develop its satellite capabilities.

Recently, at a government meeting on July 13 2011, President Aliyev gave directions to launch the second telecommunication satellite. Currently work is in progress to prepare for the launch.

The establishment of a space industry represents a huge turning point and new era in the development of Azerbaijan as a country. It will be exciting to see where its space ambitions lead – the sky truly is the limit. ■

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