

## NEW EVENTS IN SPACE BUSINESSES OF MITSUBISHI ELECTRIC CORPORATION

### 1) Mitsubishi Electric Corporation to Deliver Satellite to Qatari Operator

MELCO has announced that it has been awarded a contract to deliver the Es'hail 2 communications satellite to operator, Qatar Satellite Company (Es'hailSat) in Doha. In-orbit delivery is scheduled for the end of 2016.

MELCO is the first Japanese satellite manufacturer to enter the Arab commercial communications satellite market.

With a more than 15-year design life, the Es'hail 2 satellite will offer direct broadcasting services throughout the Middle East and North Africa of television stations such as Al Jazeera and beIN Sports. From the orbital position at 26 degrees east longitude, its Ku-band and Ka-band capabilities will also provide government communication services. Moreover, Es'hail 2 will provide the world's first geostationary amateur radio service.

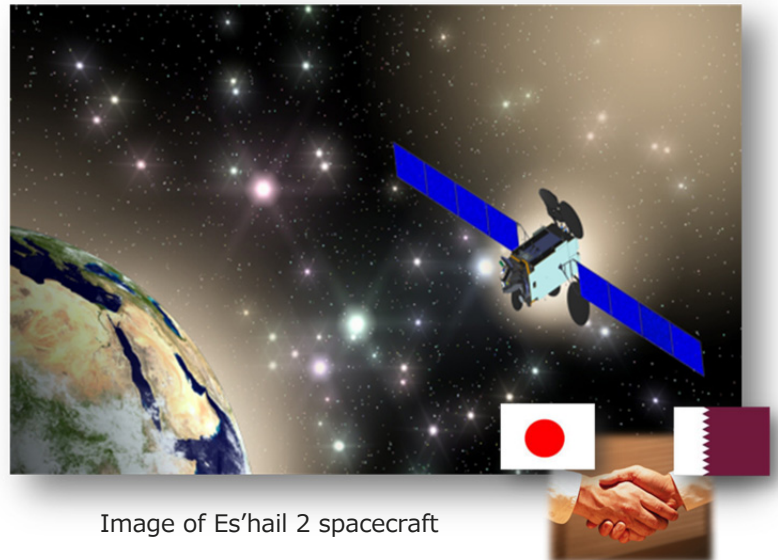


Image of Es'hail 2 spacecraft

"We are delighted to move forward with our new satellite procurement program with MELCO. Es'hail 2 demonstrates the commitment of both our companies to providing premium satellite capacity for broadcasters in the MENA region and to building a sustainable satellite industry for the State of Qatar," said Ali Ahmed Al Kuwari, Chief Executive Officer of Es'hailSat. MELCO will also deliver the ground systems and training services in order to provide Es'hailSat a full turnkey solution.

## 2) Himawari-8 Successfully Launched

MELCO has completed work on the Himawari-8 satellite, the next-generation geostationary meteorological satellite based on a contract awarded by the Japan Meteorological Agency.

Himawari-8 has been delivered to Tanegashima Space Center, Japan, and was successfully launched into the geostationary orbit (E140.7) on 7th October by H-IIA rocket. We will continue conducting in-orbit and operational testing, and Himawari 8 will officially take over the meteorological observation from Himawari 7 in summer, 2015.

Himawari-8, the successor to the MTSAT-2 (Himawari-7) satellite, is equipped with a new payload for a highly upgraded meteorological observation mission. Unlike MTSAT-2, color images will be generated and spatial resolution will be twice as detailed.

Observational data collected with Himawari-8 will enhance climate forecasting, weather-prediction numerical accuracy and environmental monitoring of weather such as typhoons, torrential rain and climate changes. Data will be provided to more than 30 countries in the Asia and Pacific region to support advanced meteorological services, particularly improved natural-disaster prevention and transportation safety.

Himawari-8 is the eighth satellite to incorporate MELCO's original DS2000 satellite platform. Its sister, Himawari-9, is currently being built at the company's Kamakura Works. When Himawari-9 is launched in 2016, it will mark over 20 years of MELCO's involvement with geostationary meteorological satellites, beginning with Himawari-7. By 2017, MELCO expects to have produced 16 DS2000 satellites. To date, all DS2000 satellites launched have operated successfully. Building on this superb track record, we will continue to serve the global commercial satellite market with its ever-increasing family of reliable DS2000 satellites.



Image of Himawari 8&9 spacecraft

## 3) Successful operation in orbit -TURKSAT 4A, Completes Construction -TURKSAT 4B

TURKSAT-4A, the first of a series satellites, was launched in February 2014 and has been handed over to our customer, Turksat A.S., in March after the successful in-orbit test. The satellite is in

healthy condition, without any troubles. Also, TURKSAT-4B is ready for shipment to the launch-site.

MELCO was awarded a turnkey contract for TURKSAT-4A&4B by Turksat A.S. in 2011.

Designing, manufacturing and testing were carried out first for TURKSAT-4A, followed by TURKSAT-4B.

Most of the final assembly and system testing was conducted at the Tsukuba Space Center in cooperation with the Japan Aerospace Exploration Agency (JAXA). During this process, MELCO provided Turksat A.S. engineers with a suite of educational and OJT programs about satellite manufacturing and testing.

In addition to providing the satellites, MELCO is ready to support the satellite industry in Turkey, which aims to build its own satellites.

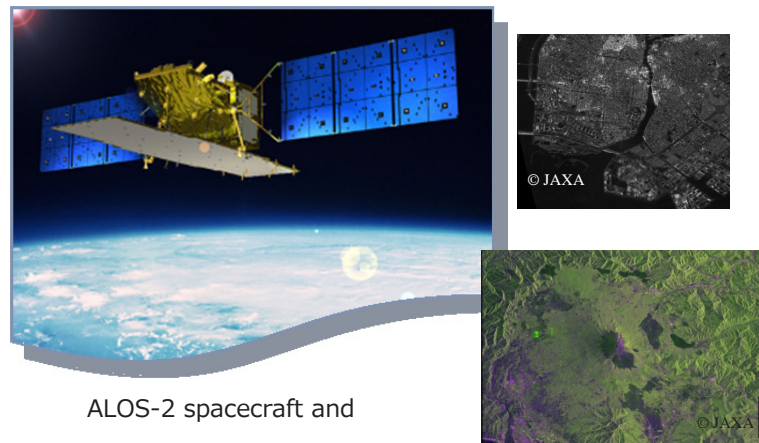
The company hopes these efforts will lead to the expansion of its space business.



Image of TURKSAT 4A&4B spacecraft

#### 4) New Era of L-band SAR, ALOS-2

MELCO has completed its development of the ALOS-2, Advanced Land Observation Satellite-2, and the satellite was launched from Tanegashima Space Center in May 2014. This contract was awarded to the company by the Japan Aerospace Exploration Agency (JAXA) in 2009. MELCO provides the spacecraft, sensor and ground systems, including data processing, and operation. ALOS-2, a follow-on mission of its predecessor ALOS satellite, is equipped with the world's most advanced L-band Synthetic Aperture Radar (SAR) for improved resolution and wider observation range than ALOS. (ALOS-2: 1m×3m resolution by Spotlight mode, 490km swath by Scan SAR mode). It is expected to contribute significantly to earth observations in terms of disaster monitoring, environmental protection, resource exploration and forest monitoring.



ALOS-2 spacecraft and imagery taken by ALOS-2