Paper ID: 66490
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28th IAA SYMPOSIUM ON SMALL SATELLITE MISSIONS (B4)
Small Satellite Missions Global Technical Session (9-GTS.5)

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A STRATEGIC LOOK ON THE FUTURE EARTH OBSERVATION CONSTELLATION

Abstract

March 18, 2025

788 is the number of satellites dedicated to earth observation. Out of the 2,063 satellites in orbit, 38

In my paper, I will present the new generation of commercial Chinese earth observation systems in their entirety. This new generation of satellites are manufactured by Chang Guang Satellite Technology Ltd. (CGSTL) and commercialized by HEAD Aerospace. HEAD has positioned itself as a bridge between Chinese systems and the rest of the world. Positioned to be a one stop-shop for providing integrated access in satellite imagery HEAD has one of the best overview on earth observation systems.

This paper will introduce the new generation of a VHR microsatellite constellation developed by Chang Guang Satellite Technology Ltd. of China. Currently, the DailyVision@1m constellation are composed of six on-orbit JL1-GF03B satellites providing daily revisit globally at 1m resolution. The constellation will be expanded: 35 JL satellites with confirmed launch schedule in 2021 and the full constellation with 138 satellites in 2023, offering global daily revisit of every 14 minutes at 1m resolution. This future EO constellation introduces technical improvements in optical sensor, propulsion system, deployable solar panels and array antenna.

My paper will also present a night-time imaging and video constellation with nine on-orbit satellites. Some new applications were derived from satellite constellation such as electricity power line monitoring which bring social economic value to the society.

Their names speak for themselves and although their technologies make them two constellations out of the ordinary, the interest of these constellations lies in their applications. Ahead of the market with their technologies, HEAD has experienced an extraordinary increase in demand for these satellites.

Thanks to its sub-metric night vision, NightVision, opens the field of possibilities for military applications, security missions, as well as energy resource management and logistics.

On the other hand, Hyperscan sat, adapts to the demands by taking on the clothe of a hyperspectral satellite offering 26 spectral bands. So far, nothing exceptional except that this satellite is built on an agile platform adapting different payloads to fit very precise applications. In addition to its optical capacity, this satellite carries 3 very specific payloads that I would be glad to present you.