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Technical Aspects and Progress of Korean 1m Satellite Laser Ranging System

The Korea Astronomy and Space Science Institute(KASI) plans to built a Fixed Satellite Laser Ranging system(Accurate Ranging system for Geodetic Observation-Fixed, ARGO-F) with the functions of satellite laser ranging and satellite imaging for space geodesy research and space situational awareness and so on. This system is being developed jointly by Elecro Optic Systems(EOS) in Australia from 2013. ARGO-F is capable of tracking satellites in the range of 300km and 36,000km altitude and 24 hours tracking coverage including daylight tracking. And ARGO-F consists of optical tube assembly including the 100cm diameter of primary mirror, Transmitting & Receiving optical system, tracking mount, laser system, opto-electronic system, adaptive optics, operation system, weather system and aircraft surveillance radar. This system shall be installed in an observatory, which is located in Mt. Gamak, and a remote control center, which is located in KASI headquarter. KASI performed Preliminary Design Review(July 2014), Critical Design Review(Dec. 2014), and Factory Acceptance Test(Dec. 2015). The current status of ARGO-F is almost completed on the sub-systems and KASI is going to implement the system integration and Site Acceptance Test from May 2017. In this paper, the technical aspects and future plans including the characteristics and specifications are discussed for Korean 1m Satellite Laser Ranging system.