APPLICATION PURPOSE

The Star✧Tower 500 Aerostat System is the state-of-the-art, high performance Global Near Space Systems aerostat equipped with a High Definition electro-optical and infrared (day/night) surveillance sensor and the Elta ELM 2022 Multi-Mode Ground Moving Target Indicator Radar (GMTI) Radar to provide around-the-clock surveillance and situational awareness. The Star✧Tower tethered aerostat system is designed to support payloads of more than 200 kilograms (392 pounds) at ***altitudes up to 1,500 meters (0.93 miles) with no-wind and 1,800 meters (1.12 miles)*** wind assisted.

The Star✧Tower aerostat system consists of three major segments, the *Air Vehicle*, the *Base Station* and the *Ground Control Station* (GCS). The *Air Vehicle* or airborne segment consists of the airfoil-shaped, lighter-than-air (LTA), helium envelope with internal ballonet, detachable tail fins for aerodynamic stability, control rigging for both ground handling and airborne operations, a payload bay with payload sensors, a ***GMTI Radar***, an ***Emergency Locator Transmitter (ELT)*** and associated telemetry instruments and avionics. The *Base Station* segment is based on a rugged 11m (36 feet) long by 2.4m (8 feet) wide trailer bed capable of limited off-road operations. The *GCS* consists of an environmentally controlled shelter with three operator work stations equipped with the hardware and software (for operating and controlling the aerostat, camera and radar) and a ***Flight Termination System (FTS) transmitter***.

The Star✧Tower 500 Aerostat System Factory Acceptance Tests (FAT) Plan includes unit testing on the GMTI Radar, ELT and FTS (Aerostat). The top level objective of testing will be to demonstrate the proper function of the entire system during day and night operations. Each subsystem must first meet performance and functionality requirements individually and then as integrated into a whole system. The performance requirements include

- for the GMTI Radar - the ability to distinguish moving targets over a large area,
- for the ELT to transmit at the specified frequency the unit's location,
- and for the FTS to sequentially transmit two coded signals at specified frequency