

THE X-LUMIN SSA OPTICAL TRACKING SYSTEM

X-lumin's Space Situational Awareness (SSA) Optical Tracking System is highly configurable and designed to collect high quality radiometrically and metrically calibrated imagery and light curves of LEO and GEO space objects. The SSA Tracking System is a complete, turn-key solution for SSA data collection. Designed to be installed in new or existing observatories, our SSA Tracking system can be used as a dedicated SSA system, or configured with add-ons to provide additional capabilities such as ground-to space laser communications or Quantum Key Distribution (QKD).



COMPONENTS

The SSA system includes an optical telescope assembly (OTA), gimbal, and state-of-the-art optics bench controlled by the X-lumin Operating System (XOS) all managed through a single point of access. The XOS user interface operates on multiple platforms including Windows, Linux, Mac, Android and IOS.

REMOTE CONTROL AND REMOTE PROCESSING

XOS remote control and remote processing capabilities enable the user to collect, store and analyze data, using a server located with the system. This means the user can work from locations that have low bandwidth Internet connections. A standard network interface allows third party software integration with XOS access and control of the gimbal and sensors in real-time. The remote control enabled by XOS translates to the user's ability to manage off-site power up and calibration of the system without the need for local observatory support.

AUTOMATION

Customized scripts allow for automation of all functions. The user interface provides access from multiple remote locations simultaneously with the capability to pass control from one system to another. This makes it easy for geographically distributed teams to collaborate on tasking; controlling system components; scripting operations; and analyzing data on the fly.



CALIBRATION

Our SSA Optical Tracking System also provides metric and radiometric calibration tools; for example, a gimbal can be metrically calibrated to allow accurate open loop tracking of LEO satellites. Flat field and two-point calibration images can be saved for immediate use in real-time visualization displays of the data, or stored for later analysis.



COMPATIBILITY & OPTIONS

The SSA Optical Tracking System and XOS package are compatible with PlaneWave and Officina Stellare OTAs as well as other* OTA manufacturers (*please inquire about compatibility requirements). Our SSA Tracking System is built with the client's choice of cameras. Additional sensor interface and dome weatherization are optional.



ADDITIONAL FEATURES

- Precision Timing Protocol (PTP) – server allows sub-microsecond synchronization to UTC
- Remote Control
- Integrated Video Tracking
- Configurable user interface
- Numerous manual computer-assisted, or fully automatic control modes
- Day & Night Operation
- Other Track modes: Manual; Scripted; Planets; Geodetic; Stars; Satellite (SGP4)
- Precision Metric Calibration
- Radiometric calibration tools

ABOUT X-LUMIN

X-lumin is on a quest to build an effective and efficient bridge between existing optical communications technology and the need for a high-speed data highway to meet exploding IoT demands. Our innovative and cutting-edge solutions incorporate state-of-the-art optical and photonic components which comes from over 25 years of experience in the design, development and integration of optical technologies and solutions, laser systems, tracking and surveillance, atmospheric propagation, and video and image processing. While the early foundations of our products and solutions focused on universities and government agencies, our solutions today allow us to bring these leading-edge solutions to the commercial marketplace which create new standards and solutions that have broader impact.

For more info, contact us at:
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