Future & Challenges of Adaptive Optical Ground Stations

ScyLight Industry Day

08 February 2017
Synopta T-AOGS

Left: T-AOGS Operators Container

Right: T-AOGS Control Monitors

Left: T-AOGS Optics Container (OCO) in operation

Right: T-AOGS OCO closed
Synopta T-AOGS operating in Tenerife

Alphasat & EDRS (GEO) S/C

> 400 T-AOGS links since 2014

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Status 10/16
ESA OGS Upgrade Project

Synopta upgrades ESA OGS (Ø1m Zeiss RC/Coudé Telescope)

1. Design & Install AO system at Cassegrain Focus for Rx
   a. LEO and GEO (EDRS) Links
   b. Operations at 1064 nm and 1550 nm

2. Upgrade of Coudé Path Optics
   a. Redesign of folding mirror assembly
   b. Re-coating for 1064 nm & 1550 nm

3. Re-design of Coudé Laser Terminal
   a. 1064 nm, 1550nm
   b. Rx path with AO
   c. Tx with beam shaping
Uplink Challenge: Precompensation

- T-AOGS NG development must consider the full SGL-system
- Economic solutions must ensure growth potential