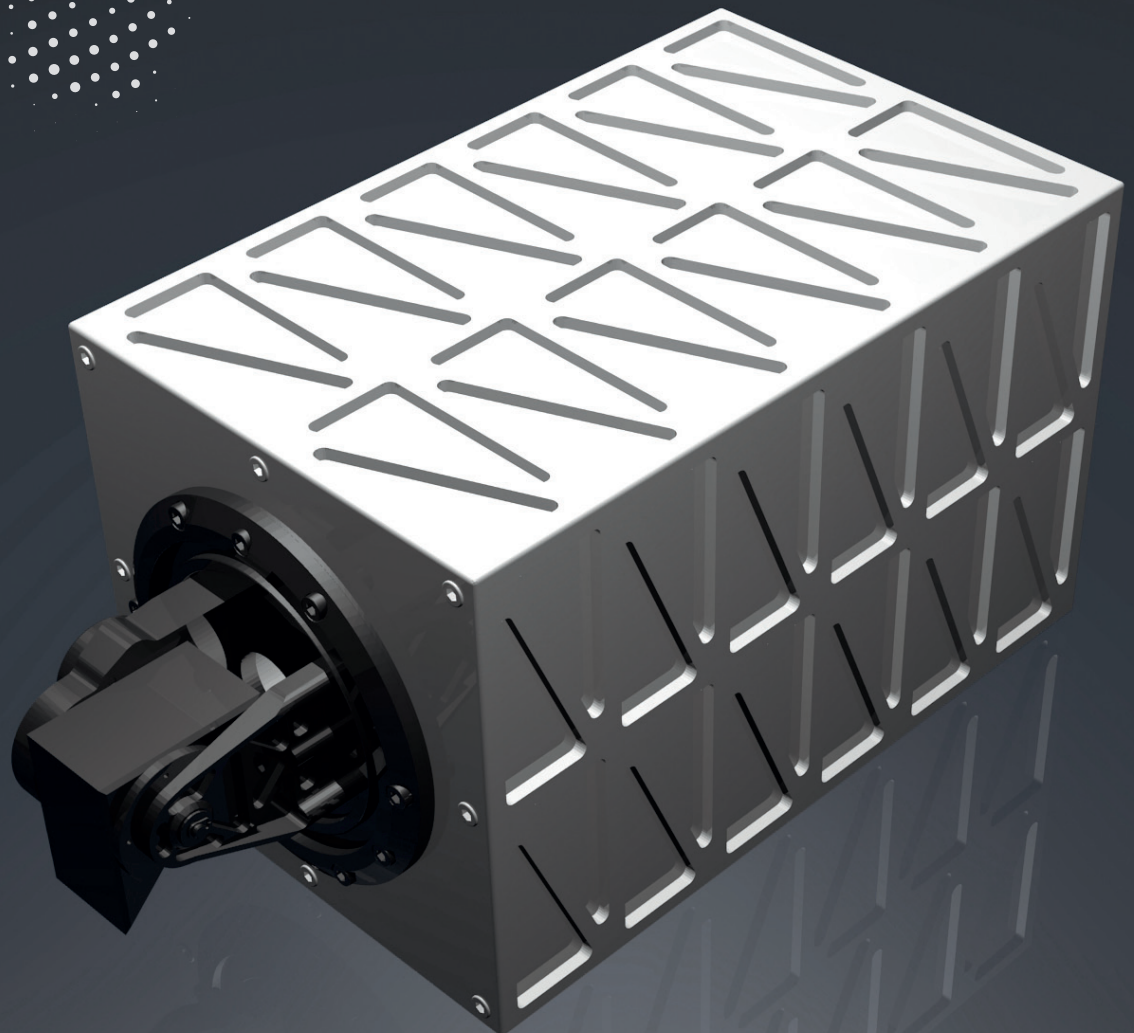


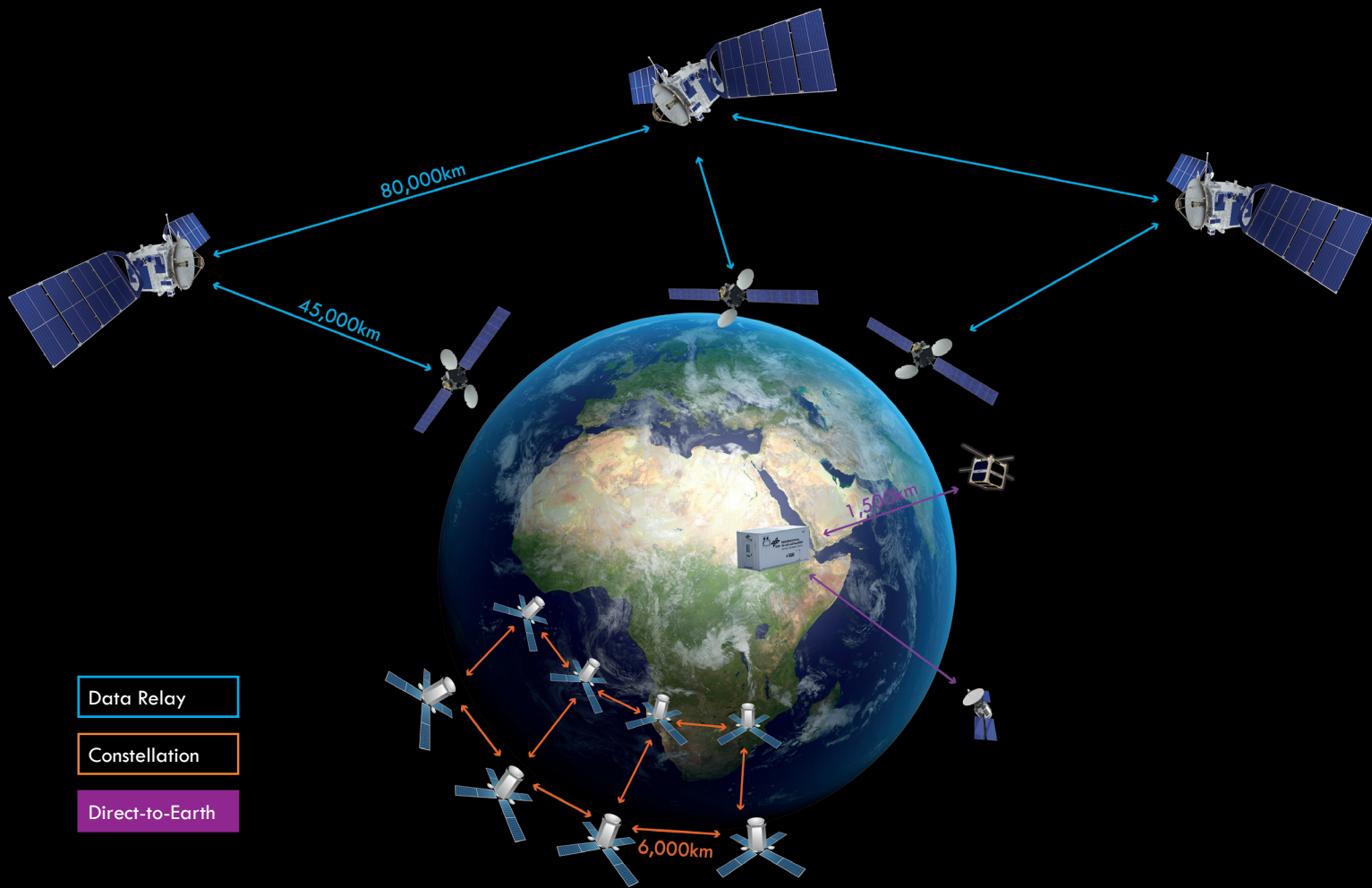
# TOSIRIS

DIRECT-TO-EARTH LASER COMMUNICATION TERMINAL



VERSION 2019-04

# TOSIRIS – LEO TO GROUND DATA TRANSMISSION WITH 10 GBPS



Application	Smallsat LEO to ground laser communication solution based on TESAT's longterm industrial experience and DLR Institute of Communications and Navigation's research knowledge.
Range	LEO to ground
Channel Data Rate	10 / 5 / 2.5 / 1.25 Gbps LEO to ground; 1 Mbps TC Channel ground to LEO
Mass	8 kg
Size	28 x 20 x 15 cm <sup>3</sup>
Power Consumption	40 W
Field of Regard	Full hemispherical, coarse beam pointing mechanism included
Lifetime	5 years in LEO orbit
Data Interface	Ethernet or Spacefiber
Available	FM available end of 2019, 1 <sup>st</sup> mission on Airbus' Bartolomeo platform on the ISS
Transmit Power	1 W
Technical Features	Laser communication terminal optimized for 60cm aperture optical ground station with uplink beacon, 1550 nm IM DD technology, 10 min. communication time / ground station pass. Integrated terminal controller for autonomous terminal operation; integrated mass memory; uplink TC channel from optical ground station. Reference implementation for CCSDS standard.