

# uNIS

## Ground Stations Interface (SLE)

uNIS is the gateway between the Spacecraft Control System and Ground Stations, providing means for Telemetry and Telecommands transfer using the CCSDS Space Link Extension services (SLE).

uNIS is also used for ground testing applications between the main test system and the TM/TC Front-end Equipment.

### FEATURES

#### CCSDE SLE Standard:

Based on the Consultative Committee for Space Data Systems for cross support recommendations, SLE protocol services related to Telemetry and Telecommand (CCSDS 911.1-B-3, CCSDS 911.2-B-2, CCSDS 912.1-B-3).

#### SLE Services:

The following services are supported:

- Return All Frames (RAF),
- Return Channel Frames (RCF),
- Forward Command Link Transmission Unit (CLTU).

#### Service Role:

uNIS implement the SLE User role, the ground station being the SLE Provider.

#### SLE Services definition:

Service Instance Configuration File (SICF) follows the JPL/ESA interagency standard format.

#### Spacecraft Control System Interface:

- Data interface: NIS protocol (ESA protocol for TC forwarding, TM and Administrative message delivery).
- Monitor and Control interface: NATS Messaging System (<https://nats.io>). Allows easy integration in automation and scripted based control systems.

#### Automated M&C:

SLE service instances can be seamlessly controlled via TOPE automated script from CCS5 & TSC products.

#### Ground Station Network:

Supports multiple ground stations, during LEOP and routine operations.

