



DENEL OVERBERG TEST RANGE

TELEMETRY LAUNCH SUPPORT

DEDICATED MOBILE TELEMETRY TRACKING STATIONS

Denel Overberg Test Range has the capability to provide telemetry launch support services from almost any remote location in the world. Since 2003, the Test Range has been providing telemetry launch support to NASA / United Launch Alliance (ULA) and lately also to the French Space Agency, CNES (Centre National d'Etudes Spatiales) / European Space Agency (ESA). The Test Range specializes in offering telemetry launch support in remote locations where real-time telemetry coverage is required of crucial events during a space mission and where there is no fixed ground station in the vicinity. For this purpose it has two dedicated mobile S-band telemetry tracking stations available that have been adapted and re-configured so as to be transportable by commercial air cargo for quick deployment at remote locations with minimal infrastructure available.

SUPPLIER OF CHOICE

Being the only mobile telemetry tracking station of its kind available in Southern Africa, Denel Overberg Test Range has become a logical choice to provide assistance to international space programmes. To date the stations have already been deployed in various African countries, an island in the Atlantic Ocean, Australia and New Zealand. Missions supported include NASA's Mars Exploration Rover I (Spirit) launched in 2003 and the "Deep Impact" spacecraft launched in 2005, and more recently support provided to CNES during the launch of the "Jules Verne" and "Johannes Kepler" Automated Transfer Vehicles (ATVs) in 2008 and 2011 respectively.

MOBILE TELEMETRY ANTENNA



MOBILE TELEMETRY INDOOR EQUIPMENT



MOBILE TELEMETRY STATION SPECIFICATION

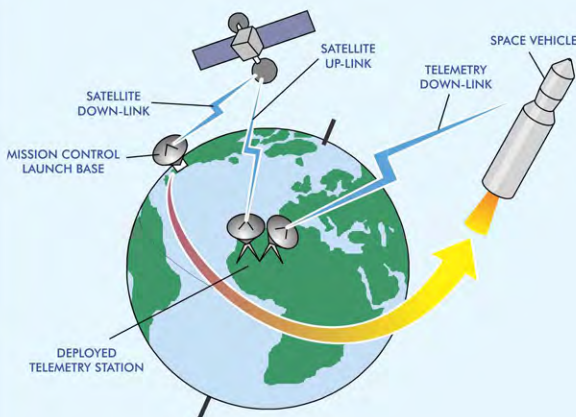
ANTENNA

Diameter	: 3 metre
Receive frequency range	: 2185-2475 MHz
Gain	: 33.5 dBi @ 2300 MHz
Receive polarity	: RHCP, LHCP
G/T	: 10.3 dB/K
Max velocity	: 20° /sec
Max acceleration	: 20° /sec ²
Travel azimuth	: +720°
Travel elevation	: -2° to +92°

DATA RECORDING FORMATS : Complies with IRIG 106 Standard

STATION MANAGEMENT : Fully computerized

TYPICAL LAUNCH SUPPORT





DENEL OVERBERG TEST RANGE

SATELLITE GROUND STATION

Denel Overberg Test Range operates a satellite ground station at its main site near the southernmost tip of Africa. The ground station has a precision 10 metre tracking antenna available to its operation with S- & X-Band capabilities. The ground station is suitable for launch support and TT&C (Telemetry, Tracking & Command), and is situated in a prime location for sun-synchronous and polar-orbiting spacecraft.

SATELLITE GROUND STATION SPECIFICATION

LOCATION

Latitude : - 34.62°
Longitude : +20.23°

MAIN ANTENNA

Diameter : 10 metre
Receive frequency range : 2200-2300 MHz,
7950-8550 MHz
Gain : 43.2 dBi @ 2300 MHz,
55.5 dBi @ 8200 MHz
Transmit frequency range : 2025 - 2120 MHz
HPA output power : Max 50 W, adjustable
Receive polarity : RHCP, LHCP simultaneous
Transmit polarity : RHCP, LHCP selectable
G/T : 19.2 dB/K S-Band,
32.4 dB/K X-Band
Max velocity : 15° /sec
Max acceleration : 20° /sec²
Travel azimuth : +380°
Travel elevation : -2° - +92°
Third axis displacement (tilt) : 3.5°

SECONDARY ANTENNA

Diameter : 2 metre
back-up antenna

DATA RECORDING

: HDDR, 80 MB/sec,
expandable
Analogue, IRIG
wideband, 28CH

STATION MANAGEMENT

AND DATA PROCESSING : Fully computerized

CONTACT DETAILS:

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GPS Co-ords: 34° 39' 13.0" S, 20° 13' 01.5" E

GROUND STATION SHOWING 10 M AND 2 M ANTENNAE



GROUND STATION CONTROL ROOM



GROUND STATION COMPLEX

