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EUROPEAN TELECOMMUNICATIONS SATELLITE II (EUTELSAT II)

(Reimbursable)

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LV/Range: Ariane/CSG

Launch Date: F-1 August 30, 1990; F-2 January 15, 1991; F-3 August 8, 1991;
F-4 January 15, 1992; F-5 July 15, 1992, F-6 January 15, 1993
Projected SC Life/DSN Support: 7 years/10 days

Project Responsibility: Research Agency for Aerospace Technology,
Germany (DLR)

Source: SIRD (Rev. 5) July 1989
Sponsor: DLR

A. MISSION DESCRIPTION

EUTELSAT II is a regional public telecommunications system for Europe. The services which will be provided are telephone and television.

EUTELSAT is a European telecommunication satellite organization created in 1977 by 17 member states of the European Conference of Postal and Telecommunications Administrations (CEPT) which now is comprised of 26 member states.

The satellites will be placed at a geostationary orbit within the arcs 6 degrees east to 19 degrees east or 26 degrees east to 36 degrees east. The designed lifetime is 7 years.

B. FLIGHT PROFILE

EUTELSAT II satellites will be launched using one of the following launch vehicles: Ariane 4, Titan, or Atlas G Centaur depending on their availability.

After separation of the satellites from the launch vehicle, telemetry, telecommand, and ranging will be performed within S-Band frequencies. After positioning of the satellite at its final geostationary orbit the Ku-Band telecommunication equipment will be activated. From this time on all satellite control operations will be performed in Ku-Band. S-Band will only be reactivated in case of emergency.

C. COVERAGE

The DSN will support the transfer and drift orbit mission phases.

1. Coverage Goals

The coverage will consist of the 26-m antennas at Goldstone and Canberra as prime support for the transfer and drift orbits. Maximum support will consist of a 7-day period, plus 14 days of contingency support.

2. Network Support

The support provided by the DSN is indicated in the following table:

<u>System</u>	<u>Goldstone</u>					<u>Canberra</u>				<u>Madrid</u>		
	12	14	15	16	17	42	43	45	46	61	63	66
S-band TLM				P	B	B			P	B		B
S-band CMD				P	B	B			P	B		B
S-band TRK				P	B	B			P	B		B

NOTE: P = Prime
B - Back-up

3. Compatibility Testing

CTA 21 will support compatibility testing with the EUTELSAT TT&C "suitcase" model at approximately launch minus 11 months. These tests will verify and test the spacecraft RF compatibility with the DSN.

D. FREQUENCY ASSIGNMENTS

Frequencies are allocated according to the following table:

<u>System</u>	<u>Uplink (MHz)</u>	<u>Downlink (MHz)</u>	<u>Polarization</u>
S-band TLM	--	2264.6250	RCP
S-band CMD	2085.3420	--	RCP
S-band TRK	2085.3420	2264.6250	RCP

E. SUPPORT PARAMETERS

The support parameters for the Telemetry, Command, and Support Systems are listed below:

(1) Telemetry

Data Streams	1
Format	PCM(NRZ-L)/PSK/PM
Subcarrier Frequency	32768 Hz
Bit Rate	512 b/s
Record	Required

(2) Command

Format	PCM(NRZ-L)/PSK/PM
Bit Rate	500 b/s
Subcarrier Frequency	8000 Hz

(3) Support

Uplink Power	1 to 10 kW
Antenna Rate	Moderate
Antenna Angle Data	Required
Antenna Autotrack	Required (26-m antenna, only)
Doppler Rates	Modest
Range Format	Tone (Prime) (100 kHz major tone) DSN standard (Backup)
Recording	
. Analog	Required
. Digital	Required for 34-m backup

F. TRACKING SUPPORT RESPONSIBILITY

The allocation of responsibilities for tracking support is listed in the following table:

<u>Mission Phase</u>	<u>Support Responsibility</u>
Ariane Launch	CSG
Transfer/Drift Orbits	DSN
Geostationary Orbit	DFVLR