TELECOM 2-B AND 2-C  
(TC2B AND TC2C)  
(Reimbursable)

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Project Mgr: H. Alvarez (CNES)  
MOM: J. Dulac (CNES)

Launch Date: March 1992; March 1993 or 1994  
Projected SC Life/DSN Support: 7 years/10 days

Project Responsibility: Center National d'Etudes Spatiales (CNES)

Source: SIRD July 20, 1990  
Sponsor: CNES

A. MISSION DESCRIPTION

The Telecom 2-B and 2-C (TC2B and TC2C) missions will provide high-speed data link applications, telephone, and television service between France and overseas territories as a follow-on to the TC2A. The satellite will be placed in a geostationary orbit at TBS deg east longitude.

B. FLIGHT PROFILE

The TC2B and TC2C will be launched from the Centre Spatial Guyanis in French Guiana on an Ariane launch vehicle. The mission follows the typical injection sequence; i.e., parking orbit, transfer orbit, and drift orbit. Attitude maneuvers will be performed to orient the spacecraft prior to Apogee Kick Motor (AKM) firings. After the final AKM firing, drift phase orbital and attitude maneuvers will be performed to place the spacecraft in its final geostationary position.
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, Madrid, and Canberra as prime support for the transfer and drift orbits. Maximum support will consist of two 8-hour tracks per station for 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:

<table>
<thead>
<tr>
<th>System</th>
<th>Goldstone</th>
<th>Canberra</th>
<th>Madrid</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>12 14 15 16</td>
<td>42 43 45 46</td>
<td>61 63 66</td>
</tr>
<tr>
<td>S-band TLM</td>
<td>P</td>
<td>B</td>
<td>P</td>
</tr>
<tr>
<td>S-band CMD</td>
<td>P</td>
<td>B</td>
<td>P</td>
</tr>
<tr>
<td>S-band TRK</td>
<td>P</td>
<td>B</td>
<td>P</td>
</tr>
</tbody>
</table>

NOTE:  
P = Prime  
B = Backup

D. FREQUENCY ASSIGNMENTS

Frequencies are allocated according to the following table:

<table>
<thead>
<tr>
<th>System</th>
<th>Uplink (MHz)</th>
<th>Downlink (MHz)</th>
<th>Polarization</th>
</tr>
</thead>
<tbody>
<tr>
<td>S-band TLM</td>
<td>N/A</td>
<td>TBS</td>
<td>RCP/Linear</td>
</tr>
<tr>
<td>S-band CMD</td>
<td>TBS</td>
<td>N/A</td>
<td>RCP/Linear</td>
</tr>
<tr>
<td>S-band TRK</td>
<td>TBS</td>
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<td>RCP/Linear</td>
</tr>
</tbody>
</table>
E. SUPPORT PARAMETERS

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

(1) Telemetry

- **Data Streams**: 1
- **Format**: PCM (SP-L)/PSK/PM
- **Subcarrier Frequency**: 40960 Hz
- **Bit Rates**: 160 b/s
- **Coding**: N/A
- **Record**: Required

(2) Command

- **Format**: PCM (NRZ-L)/PSK/PM
- **Subcarrier Frequency**: 8000 Hz
- **Bit Rate**: 1000 Hz

(3) Support

- **Uplink Power**: 1 to 10 kW
- **Antenna Rate**: Moderate
- **Antenna Angle Rate**: Required
- **Antenna Autotrack**: Required (26-m only)
- **Doppler Rates**: Modest
- **Range Format**: Tone (Prime) (100 kHz Major Tone)
- **Recording**: DSN Standard (Backup)
- **. Analog**: N/A
- **. Digital**: Required

F. TRACKING SUPPORT RESPONSIBILITY

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

<table>
<thead>
<tr>
<th>Mission Phase</th>
<th>Support Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ariane launch</td>
<td>CSG</td>
</tr>
<tr>
<td>Transfer/Drift Orbits</td>
<td>DSN</td>
</tr>
<tr>
<td>Geostationary Orbit</td>
<td>CNES</td>
</tr>
</tbody>
</table>
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