

CONTENTS

<u>Section</u>	<u>Page</u>
1 INTRODUCTION.....	1-1
1.1 PURPOSE.....	1-1
1.2 SCOPE AND APPLICABILITY.....	1-1
1.3 CONVENTIONS AND DEFINITIONS.....	1-2
1.4 STRUCTURE OF THIS DOCUMENT.....	1-2
1.5 REFERENCES	1-3
2 OVERVIEW.....	2-1
2.1 ATTITUDE DATA MESSAGE TYPES.....	2-1
2.2 ATTITUDE PARAMETER MESSAGE (APM)	2-1
2.3 ATTITUDE EPHEMERIS MESSAGE (AEM).....	2-2
2.4 EXCHANGE OF MULTIPLE MESSAGES.....	2-2
2.5 DEFINITIONS.....	2-2
3 ATTITUDE PARAMETER MESSAGE (APM).....	3-1
3.1 OVERVIEW	3-1
3.2 APM CONTENT	3-1
3.3 APM EXAMPLES.....	3-10
4 ATTITUDE EPHEMERIS MESSAGE (AEM).....	4-1
4.1 OVERVIEW	4-1
4.2 AEM CONTENT	4-1
4.3 AEM EXAMPLE.....	4-12
5 ADM SYNTAX.....	5-1
5.1 INTRODUCTION	5-1
5.2 LINES	5-1
5.3 KEYWORDS.....	5-1
5.4 VALUES.....	5-2
5.5 UNITS.....	5-4
5.6 COMMENTS.....	5-4
6 SECURITY.....	6-1
6.1 INTRODUCTION.....	6-1

CONTENTS (continued)

<u>Section</u>	<u>Page</u>
6.2 SECURITY CONCERNS WITH RESPECT TO THIS RECOMMENDED STANDARD.....	6-1
6.3 POTENTIAL THREATS AND ATTACK SCENARIOS	6-2
6.4 CONSEQUENCES OF NOT APPLYING STATED SECURITY TO THE TECHNOLOGY	6-2
6.5 DATA SECURITY IMPLEMENTATION SPECIFICS.....	6-2
ANNEX A VALUES FOR SELECTED KEYWORDS (NORMATIVE).....	A-1
ANNEX B RATIONALE FOR ATTITUDE DATA MESSAGES (INFORMATIVE)	B-1
ANNEX C ITEMS FOR AN INTERFACE CONTROL DOCUMENT (INFORMATIVE)	C-1
ANNEX D ABBREVIATIONS AND ACRONYMS (INFORMATIVE).....	D-1
ANNEX E INFORMATIVE REFERENCES (INFORMATIVE)	E-1

<u>Figure</u>	<u>Page</u>
3-1 APM File Example Using Comments to Denote Updates.....	3-10
3-2 APM File Example Using Frame of Another Spacecraft	3-11
3-3 APM File Example Describing Sensor Frame to Body Frame Transform.....	3-11
3-4 APM File Example Describing Orientation of Instrument.....	3-12
3-5 APM File Example with Euler Angle Rates	3-12
3-6 APM File Example with Euler Angle Rates (Repeated Axis).....	3-13
3-7 APM File Example with Mission Elapsed Time	3-14
3-8 APM File Example with Optional Euler Elements and One Maneuver	3-15
4-1 AEM Example	4-12
4-2 AEM Spinner Example.....	4-13

<u>Table</u>	
3-1 APM Header	3-2
3-2 APM Metadata.....	3-3
3-3 APM Data	3-4
4-1 AEM File Layout Specifications	4-2
4-2 AEM Header	4-3
4-3 AEM Metadata.....	4-4
4-4 Types of Attitude Ephemeris Data Lines.....	4-8
B-1 Primary Requirements	B-2
B-2 Heritage Requirements	B-3
B-3 Desirable Characteristics	B-3
B-4 Applicability of the Criteria to Attitude Data Messages	B-4
B-5 Services Available with Attitude Data Messages.....	B-4
C-1 Items Recommended for an ICD	C-1