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**Design Guidelines and Recommended
Standards for the Implementation and Use of
AMS(R)S Voice Services in a Data Link
Environment**

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Foreword

This report was prepared by Special Committee (SC-165) and approved by the RTCA Technical Management Committee (TMC) on March 13, 1996.

RTCA, Incorporated is a not-for-profit corporation formed to advance the art and science of aviation and aviation electronic systems for the benefit of the public. The organization functions as a Federal Advisory Committee and develops consensus based recommendations on contemporary aviation issues. RTCA's objectives include but are not limited to:

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- analyzing and recommending solutions to the system technical issues that aviation faces as it continues to pursue increased safety, system capacity and efficiency;
- developing consensus on the application of pertinent technology to fulfill user and provider requirements, including development of minimum operational performance standards for electronic systems and equipment that support aviation; and
- assisting in developing the appropriate technical material upon which positions for the International Civil Aviation Organization and the International Telecommunication Union and other appropriate international organizations can be based.

The organization's recommendations are often used as the basis for government and private sector decisions as well as the foundation for many Federal Aviation Administration Technical Standard Orders.

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Preface

This document embodies a consensus representative of the insight of those who are concerned with the integration of an evolving communications tool, i.e., satellite voice communications, into a future data link environment also in its early stages of evolution. As a consequence of the early evolutionary state of voice communication services in general as they apply to a data link oriented environment, it was not possible for SC-165 to define firm requirements for the implementation and use of satellite voice. Therefore, this document, as indicated by its title, contains *guidelines* and *recommendations* rather than actual requirements. However, those responsible for this document felt it important for the reader to be aware of the relative degrees of importance attached to the various recommendations contained herein. To that end this document has been written using the traditional language of a *requirements* document. However, the reader should regard its contents as recommendations upon which subsequent standards can be based. The development of such standards, including a MASPS for the end-to-end satellite voice service and a MOPS for a new data link end-system application to support satellite voice operation, is envisioned to commence within SC-165 in early 1996.

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Table of Contents

Foreword	i
Preface	iii
1.0 Introduction	1
1.1 Purpose and Scope	1
1.2 Document Organization	2
1.3 Background	3
1.3.1 Basis for Satellite Voice Services	3
1.3.2 Relationship to CNS/ATM	4
1.3.3 Basic Characteristics of Satellite Voice	5
1.3.4 Benefits	6
1.4 Environment Overview	7
1.4.1 Operational Concept	7
1.4.1.1 Distress, Urgency, and Non-Routine Communications	7
1.4.1.2 Backup to Data Link Services	8
1.4.2 Operational Enhancements (ATS)	8
1.4.3 Operational Enhancements (AOC)	9
1.4.4 Operational Enhancements (AAC)	10
1.5 System Overview	10
1.5.1 Data Link End-System to Support Satellite Voice Operation	10
1.5.2 Equipment Architecture	10
1.5.2.1 Aircraft End-User Functions	11
1.5.2.2 AMSS Subnetwork Architecture	14
1.5.2.3 Terrestrial Subnetwork Architecture	16
1.5.2.4 Facility Subnetwork Architecture	17
1.5.2.5 Ground End-User Functions	18
1.6 Assumptions	20
1.6.1 Communications System Assumptions	20
1.6.2 CPDLC-Related Assumptions	21
1.6.3 STV-Related Assumptions	23
1.6.4 Context Management Assumptions	23
1.6.5 Human Factors Assumptions	24
1.6.6 Satellite System Assumptions	25
1.6.7 Operational Assumptions	25
1.6.8 Institutional Assumptions	26
1.7 Equipment Integration	26
1.8 Alternative Satellite Systems	26
1.9 Aeronautical Mobile Satellite Service (AMSS) Terminology	27

2.0	Functional Requirements	29
2.1	General Service Requirements	29
2.1.1	Satellite Voice Priority Structure	29
2.1.2	Telephone Numbering Plans	30
2.1.2.1	Ground Telephone Number Plans	30
2.1.2.1.1	ICAO AMSS SARPs Ground Numbering Plan	30
2.1.2.1.2	Inmarsat ATS Ground Telephone Number Plan	32
2.1.2.1.3	PSTN Ground Telephone Number Plan	33
2.1.2.2	Aircraft Telephone Number Format	33
2.1.3	Satellite Voice-Specific Data Link Messages	34
2.1.3.1	Data Link Message Usage	35
2.1.3.2	Satellite Voice Connectivity Management	38
2.2	Aircraft End-User Functional Area	39
2.2.1	General	39
2.2.2	Call Control Agent Capabilities	39
2.2.2.1	Ground Telephone Number Management	39
2.2.2.2	Control and Display Unit Requirements	40
2.2.2.3	Call Management Functions	42
2.2.2.3.1	General Call Management Functions	42
2.2.2.3.2	Air-Originated Call Management Functions	42
2.2.2.3.3	Ground-Originated Call Management Functions	44
2.2.3	Flight Deck Audio System Interface	46
2.2.3.1	General Requirements	46
2.2.3.2	Recorders	47
2.2.3.3	Satellite Voice Installation Integrated with Flight Deck Audio System	47
2.2.4	General Crew Alerting	48
2.2.4.1	Forward Field of View Alerting	48
2.2.4.2	Aural Alerting	49
2.2.4.3	Call Light	49
2.2.4.4	Call Progress Indications	49
2.2.5	Interface Requirements	50
2.2.5.1	Call Control Agent/AMSS Subnetwork Telephony Signaling Interface	50
2.2.5.2	CCA/STV Interface	52
2.2.5.3	Aircraft Audio System/AMSS Subnetwork Audio Interface	54
2.3	AMSS Subnetwork Requirements	54
2.3.1	General	54
2.3.1.1	AES Service Level Capability	54
2.3.1.2	Air-Originated Call Registration	55
2.3.2	Call Processing	56
2.3.2.1	Air-Originated Call Processing	56
2.3.2.2	Ground-Originated Call Processing	56
2.3.2.3	Security	57
2.3.3	Interfaces	57

	2.3.3.1 AES/CCA Telephony Signaling Interface	58
	2.3.3.2 GES/Terrestrial Subnetwork Telephony Signaling Interface	58
2.4	Terrestrial Subnetwork Requirements	59
2.4.1	General	59
2.4.1.1	PSTN Suitability for AMS(R)S Voice Services	60
2.4.2	Call Processing	61
2.4.2.1	Air-Originated Call Routing	61
2.4.2.2	Ground-Originated Call Routing	62
2.4.3	Security	63
2.4.4	Interfaces	64
2.4.4.1	Terrestrial Subnetwork/GES Telephony Signaling Interface	64
2.4.4.2	Terrestrial Subnetwork/Facility Subnetwork Telephony Signaling Interface	65
2.5	Facility Subnetwork Requirements	65
2.5.1	General	65
2.5.1.1	ATS Workstation Satellite Voice Provisions	66
2.5.1.1.1	Call Management	66
2.5.1.1.2	Audio Conferencing	66
2.5.1.1.3	Echo Cancellation	67
2.5.2	Call Processing	68
2.5.2.1	Air-Originated Call Routing	68
2.5.2.2	Ground-Originated Call Routing	69
2.5.3	Interfaces	70
2.5.3.1	Facility Subnetwork/Terrestrial Subnetwork Telephony Signaling Interface	70
2.5.3.2	Facility Subnetwork/Ground End-User CCA Telephony Signaling Interface	71
2.5.3.3	Facility Subnetwork/CCA Management Interface	71
2.5.3.4	Facility Subnetwork/Facility Automation Management Interface	72
2.6	Ground End-User Functional Area Requirements	72
2.6.1	General	72
2.6.1.1	Call Control Agent Capabilities	72
2.6.1.1.1	Aircraft Telephone Number Generation	73
2.6.1.1.2	Human-Machine Interface (HMI) Requirements	74
2.6.2	Call Management Functions	74
2.6.2.1	General Call Management Functions	74
2.6.2.2	Ground-Originated Call Management Functions	75
2.6.2.3	Air-Originated Call Management Functions	76
2.6.3	ATS Workstation Audio System Interface	77
2.6.3.1	General Requirements	77
2.6.3.2	Recorders	77
2.6.4	Interface Requirements	77
2.6.4.1	Call Control Agent/Facility Subnetwork Telephony	

	Signaling Interface	78
	2.6.4.2 CCA/STV System Interface	78
3.0	Practical Service Performance Requirements	81
	3.1 General Considerations on Practical Performance	81
	3.1.1 Practical vs. Required Performance	82
	3.1.2 Grade of Service	82
	3.2 Achievable End-to-End Performance	82
	3.3 Practical Subnetwork Performance	83
	3.3.1 Practical AMSS Subnetwork Performance	83
	3.3.2 Practical Terrestrial Subnetwork Performance	84
	3.3.3 Practical Facility Subnetwork Performance	84
4.0	Operational Service Performance Requirements	85
	4.1 Monitoring and Notification Requirements	85
	4.1.1 Space Segment Monitoring and Notification	85
	4.1.3 Terrestrial Subnetwork Monitoring and Notification	86
	4.1.4 ATS Facility Monitoring and Notification	86
	4.1.5 AES Failure Monitoring and Notification	86
	4.2 Operational Performance Requirements	86
	4.2.1 Aircraft End-User	86
	4.2.2 Ground End-User	87
	Membership	89
Appendix A	Key Terms and Glossary	1
Appendix B	Tutorial on Interworking Telephony Event Nomenclature	1
Appendix C	Required Signaling Interface Interactions	1
Appendix D	Required Management Interface Interactions	1
Appendix E	Open Issues Regarding On-Aircraft Ruthless Preemption of Flight Deck Voice Calls	1

LIST OF TABLES

Table 2-1.	Satellite Voice Priority Structure	29
Table 2-2.	Terminal ID Values	34
Table 2-3.	Data Link Messages for Satellite Voice Operation (Uplink)	37
Table 2-4.	Data Link Messages for Satellite Voice Operation (Downlink)	37
Table 2-5.	On-Aircraft Terminal ID Routing	45
Table 2-6.	Call Progress Indications	50
Table 2-7.	CCA/AMSS Subnetwork Telephony Signaling Interface	51
Table 2-8.	STV Uplink Messages	52
Table 2-9.	STV Downlink Messages	53
Table 2-10.	AES Service Levels for Satellite Voice	55
Table 2-11.	AES/CCA Telephony Signaling Interface	58
Table 2-12.	GES/Terrestrial Subnetwork Telephony Signaling Interface	59
Table 2-13.	Terrestrial Subnetwork/GES Telephony Signaling Interface	65
Table 2-14.	Terrestrial Subnetwork/Facility Subnetwork Telephony Signaling Interface	65
Table 2-15.	Facility Subnetwork/Terrestrial Subnetwork Telephony Signaling Interface	71
Table 2-16.	Terrestrial Subnetwork/Facility Subnetwork Telephony Signaling Interface	71
Table 2-17.	Facility Subnetwork/Ground End-User CCA Management Interface	72
Table 2-18.	Facility Subnetwork/Facility Automation Management Interface	72
Table 2-19.	Call Progress Indications	76
Table 2-20.	CCA/Facility Subnetwork Telephony Signaling Interface	78
Table 2-21.	STV Uplink Messages	79
Table 2-22.	STV Downlink Messages	80
Table C-1.	Air-Origination Call - Signaling Events (From-Aircraft)	C-1
Table C-2.	Air-Origination Call - Signaling Events (To-Aircraft)	C-2
Table C-3.	Ground-Origination Call - Signaling Events (To-Aircraft)	C-5
Table C-4.	Ground-Origination Call - Signaling Events (From-Aircraft)	C-6
Table C-5.	Air-Origination Call Signaling Events (From-Aircraft)	C-7
Table C-6.	Air-Origination Call Signaling Events (To-Aircraft)	C-8
Table C-7.	Ground-Origination Call Signaling Events (To-Aircraft)	C-10
Table C-8.	Ground-Origination Call Signaling Events (From-Aircraft)	C-11
Table C-9.	Air-Origination Call Signaling Events	C-13
Table C-10.	Air-Origination Call Signaling Events	C-13
Table C-11.	Ground-Origination Call Signaling Events (To-Aircraft)	C-15
Table C-12.	Ground-Origination Call Signaling Events	C-16
Table C-13.	Air-Origination Call Signaling Events	C-17
Table C-14.	Air-Origination Call Signaling Events	C-17
Table C-15.	Ground-Origination Call Signaling Events (To-Aircraft)	C-18
Table C-16.	Ground-Origination Call Signaling Events	C-18

LIST OF FIGURES

Figure B-1. AES Telephony Interworking Block Diagram	B-4
Figure B-2. GES Telephony Interworking Block Diagram	B-5

1.0 Introduction

1.1 Purpose and Scope

This document contains functional and interface requirements for the implementation and use of Aeronautical Mobile Satellite Service (AMSS) voice communications in an environment where satellite voice is a required capability. The information contained herein describes satellite voice services in the Air Traffic Management (ATM) and Aeronautical Operational Control (AOC) environments -- including requirements for aircraft installations, satellite services, ground interconnection facilities, and Air Traffic Service facility capabilities. The scope of this document is focused primarily on the use of satellite voice in Oceanic and Remote airspace areas. However, there may be use of satellite voice in Domestic Enroute airspace; and its use in low-density Terminal airspace might prove useful in certain situations.

The objective of this document is to facilitate the certification and use of satellite voice communication systems as a required capability. Inherent in this capability is the notion that all satellite voice communications, both air- and ground-originated, will be accomplished with automatic call processing on an end-to-end basis so as to provide rapid, direct communication between the air and ground user

Compliance with these requirements is a means of assuring that the AMSS voice service will perform its intended functions at an expected performance level. Any regulatory application of this document is the sole responsibility of the appropriate authority.

- NOTE:***
- 1. This document takes a long-term perspective of the end-to-end satellite voice service, circa 1996 and beyond. It defines the end-to-end system characteristics needed to facilitate the development, implementation, certification, and operational use of satellite voice in an environment where satellite voice communication is a required capability. The primary orientation of this document focuses on the use of satellite voice services in a CNS/ATM environment where the primary means of ATS communication is via data link. However, provisions are also made for environments where data-link services are either less than fully implemented or are unavailable due to an outage.*
 - 2. The standards contained in this document do not presuppose a specific data network standard such as the Aeronautical*