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Space data and information transfer systems — Space link extension — Application program interface for return all frames service

Systèmes de transfert des informations et données spatiales — Extension de liaisons spatiales — Interface du programme d'application pour service de retour par tout réseau

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ISO 18442 was prepared by the Consultative Committee for Space Data Systems (CCSDS) (as CCSDS 915.1-M-2, September 2015) and was adopted (without modifications except those stated in clause 2 of this International Standard) by Technical Committee ISO/TC 20, *Aircraft and space vehicles*, Subcommittee SC 13, *Space data and information transfer systems*.

This second edition cancels and replaces the first edition (ISO 18442:2013), which has been technically revised.

AUTHORITY

Issue:	Recommended Practice, Issue 2
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This document has been approved for publication by the Management Council of the Consultative Committee for Space Data Systems (CCSDS) and represents the consensus technical agreement of the participating CCSDS Member Agencies. The procedure for review and authorization of CCSDS documents is detailed in *Organization and Processes for the Consultative Committee for Space Data Systems* (CCSDS A02.1-Y-4), and the record of Agency participation in the authorization of this document can be obtained from the CCSDS Secretariat at the e-mail address below.

This document is published and maintained by:

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The Consultative Committee for Space Data Systems (CCSDS) is an organization officially established by the management of its members. The Committee meets periodically to address data systems problems that are common to all participants, and to formulate sound technical solutions to these problems. Inasmuch as participation in the CCSDS is completely voluntary, the results of Committee actions are termed **Recommendations** and are not in themselves considered binding on any Agency.

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FOREWORD

This document is a technical **Recommended Practice** for use in developing ground systems for space missions and has been prepared by the **Consultative Committee for Space Data Systems** (CCSDS). The Application Program Interface described herein is intended for missions that are cross-supported between Agencies of the CCSDS.

This **Recommended Practice** specifies service type-specific extensions of the Space Link Extension Application Program Interface for Transfer Services specified by CCSDS (reference [3]). It allows implementing organizations within each Agency to proceed with the development of compatible, derived Standards for the ground systems that are within their cognizance. Derived Agency Standards may implement only a subset of the optional features allowed by the **Recommended Practice** and may incorporate features not addressed by the **Recommended Practice**.

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Questions relating to the contents or status of this document should be sent to the CCSDS Secretariat at the e-mail address indicated on page i.

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DOCUMENT CONTROL

Document	Title	Date	Status
CCSDS 915.1-M-1	Space Link Extension—Application Program Interface for Return All Frames Service, Recommended Practice, Issue 1	October 2008	Original issue, superseded
CCSDS 915.1-M-2	Space Link Extension—Application Program Interface for Return All Frames Service, Recommended Practice, Issue 2	September 2015	Current issue: – updates text to accommodate changes in current version of SLE service specification; – differentiates applicability by SLE service specification version; – updates references.

NOTE – Substantive changes from the previous issue are marked with change bars in the inside margin.

CONTENTS

1 INTRODUCTION

1.1 PURPOSE

The Recommended Practice *Space Link Extension—Application Program Interface for Transfer Services—Core Specification* (reference [3]) specifies a C++ API for CCSDS Space Link Extension Transfer Services. The API is intended for use by application programs implementing SLE transfer services.

Reference [3] defines the architecture of the API and the functionality on a generic level, which is independent of specific SLE services and communication technologies. It is thus necessary to add service type-specific specifications in supplemental Recommended Practices. The purpose of this document is to specify extensions to the API needed for support of the Return All Frames (RAF) service defined in reference [2].

1.2 SCOPE

This Recommended Practice defines extensions to the SLE API in terms of:

a) the RAF-specific functionality provided by API components;

b) the RAF-specific interfaces provided by API components; and

c) the externally visible behavior associated with the RAF interfaces exported by the components.

It does not specify

a) individual implementations or products;

b) the internal design of the components; and

c) the technology used for communications.

This Recommended Practice defines only interfaces and behavior that must be provided by implementations supporting the Return All Frames service in addition to the specification in reference [3].