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Systèmes de transfert des informations et données spatiales — Services d'interfaces à bord des véhicules spatiaux — Service de groupage des données des périphériques

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The Consultative Committee for Space Data Systems

Recommendation for Space Data System Practices

SPACECRAFT ONBOARD INTERFACE SERVICES—DEVICE DATA POOLING SERVICE

RECOMMENDED PRACTICE

CCSDS 871.1-M-1

MAGENTA BOOK

November 2012

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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-3), and the record of Agency participation in the authorization of this document can be obtained from the CCSDS Secretariat at the address below.

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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 flight and ground systems for space missions and has been prepared by the Consultative Committee for Space Data Systems (CCSDS). The Device Data Pooling Service described herein is intended for missions that are cross-supported between Agencies of the CCSDS, in the framework of the Spacecraft Onboard Interface Services (SOIS) CCSDS area.

This Recommended Practice specifies a set of related services to be used by space missions to access pooled data acquired from devices over an onboard subnetwork. The SOIS Device Data Pooling Service provides a common service interface and quality of service regardless of the particular type of data link or protocol being used for communication.

Through the process of normal evolution, it is expected that expansion, deletion, or modification of this document may occur. This Recommended Practice is therefore subject to CCSDS document management and change control procedures, which are defined in the *Organization and Processes for the Consultative Committee for Space Data Systems* (CCSDS A02.1-Y-3). Current versions of CCSDS documents are maintained at the CCSDS Web site:

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CONTENTS

Section Page

1 INTRODUCTION 1-1

1.1 PURPOSE AND SCOPE OF THIS DOCUMENT 1-1
1.2 APPLICABILITY 1-1
1.3 RATIONALE 1-1
1.4 DOCUMENT STRUCTURE 1-1
1.5 CONVENTIONS AND DEFINITIONS 1-2
1.6 TERMS DEFINED IN THIS RECOMMENDED PRACTICE 1-2
1.7 NOMENCLATURE 1-3
1.8 REFERENCES 1-4

2 OVERVIEW 2-1

2.1 FUNCTION 2-1
2.2 CONTEXT 2-1
2.3 PURPOSE AND OPERATION OF THE DEVICE DATA POOLING SERVICE 2-6

3 DEVICE DATA POOLING SERVICE 3-1

3.1 PROVIDED SERVICE 3-1
3.2 EXPECTED SERVICE FROM UNDERLYING LAYERS 3-1
3.3 SERVICE PARAMETERS 3-2
3.4 DEVICE DATA POOLING SERVICE PRIMITIVES 3-4

4 MANAGEMENT INFORMATION BASE 4-1

4.1 GENERAL 4-1
4.2 SPECIFICATIONS 4-1
4.3 MIB GUIDANCE 4-1
4.4 ACQUISITION ORDER TABLE 4-1
4.5 ACQUISITION TIMING ACCURACY 4-2
4.6 MAXIMUM DEVICE VALUES PER ACQUISITION ORDER 4-2
4.7 MAXIMUM HISTORY SIZE 4-2

ANNEX A DEVICE DATA POOLING SERVICE PROTOCOL IMPLEMENTATION CONFORMANCE STATEMENT PROFORMA (NORMATIVE) A-1
ANNEX B SECURITY CONSIDERATIONS (INFORMATIVE) B-1
ANNEX C INFORMATIVE REFERENCES (INFORMATIVE) C-1
ANNEX D ABBREVIATIONS AND ACRONYMS (INFORMATIVE) D-1

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CONTENTS (continued)

Figure Page

2-1 Device Data Pooling Service Context 2-1
2-2 Relationship between SOIS Command and Data Acquisition Services 2-2
2-3 Data Pool Examples 2-3
2-4 Conceptual Architecture for Synchronizing Acquisitions with Underlying Transport Services 2-6

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1 INTRODUCTION

1.1 PURPOSE AND SCOPE OF THIS DOCUMENT

This document is one of a family of documents specifying Spacecraft Onboard Interface Services (SOIS)-compliant service to be provided to onboard applications.

The purpose of this document is to define the services and service interfaces provided by the SOIS Device Data Pooling Service (DDPS). Its scope is to specify the service only and not to specify methods of providing the service, although use of the SOIS subnetwork services is assumed.

This document conforms to the principles set out in the SOIS Green Book (reference [C2]) and is intended to be applied together with it.

1.2 APPLICABILITY

This document applies to any mission or equipment claiming to provide a SOIS-compatible Device Data Pooling Service.

1.3 RATIONALE

SOIS provides service interface specifications in order to promote interoperability and development reuse via peer-to-peer and vertical standardization.

1.4 DOCUMENT STRUCTURE

This document has four major sections and three annexes:

- this section, containing administrative information, definitions, and references;
- section 2, containing general concepts and assumptions;
- section 3, containing the Device Data Pooling Service specification;
- section 4, containing the Management Information Base (MIB) for this service;
- annex A, comprising the Service Conformance Statement Proforma;
- annex B, discussing security considerations;
- annex C, containing a list of informative references.

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