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Chapter 1: Overview of the SDP Requirements Manual

In This Chapter

- Learn about the scope of the SDP Guidance Documentation: Requirements Manual.
- Learn how to navigate through the Requirements Manual.

SDP Guidance Documentation: Requirements Manual

Audience: Analysts

Scope: Provide a detailed description of the framework and approach for the SDP, as well as a summary of the requirements that drove the development of the SDP.

Document Scope

This Schedule Data Profile (SDP) Guidance Documentation: Requirements Manual explains the transit schedule data requirements that drove the development of the Schedule Data Profile (SDP) XML Schema, and describes how native transit schedule data may be expressed using SDP data concepts and the SDP XML Schema.

This Requirements Manual is the second of four documents comprising the Transit Schedule Data Exchange Architecture (TSDEA) SDP Guidance Documentation. The first document is the Overview, which provides a high level overview of the SDP project, its background, goals and products. The Overview is intended for all readers. This Requirements Manual is targeted for analysts and assumes that the Overview has been read. The third section of the SDP Guidance Documentation is the Programmer's Manual, which provides additional technical guidance on the "how" of implementing the SDP. The fourth section is an interactive web site that allows peer-to-peer technical assistance.

General Topics in This Document

The contents of this Requirements Manual include 11 chapters and related appendices, which are listed below in four general topic areas or groupings:

Overview of the SDP Conceptual Data Reference Model and XML Schema

Chapters 2 and 3 present a high level overview of the SDP Conceptual Data Reference Model (CDRM) and the rules that were applied to represent it as a SDP XML Schema. Chapter 3 also describes how the CDRM may be used to represent the SDP data concepts as a physical database.

Detailed Description of Data Concepts

Chapters 4 through 11 discuss the detailed requirements of specific schedule-related transit data concepts. Appendix A focuses on special issues encountered when working with rail or subway schedule data.

Topics on XML Schema

Chapter 11 discusses the rules and issues related to ensuring the conformance and validity of the SDP XML Document. Chapter 11 also discusses issues related to constraining or extending the SDP Schema so that it incorporates additional downstream requirements not anticipated in the original functional requirements document.

Appendices

Audience for SDP Requirements Manual

This SDP Guidance Documentation: Requirements Manual is targeted for program analysts. The discussion assumes that the reader has a basic understanding about how to read a data model (entity-relationship diagram) and XML Schema.[1]

How to Use This Document

This Guidance document incorporates the underlying requirements and business rules documented in the Functional Requirements document, including the Conceptual Data Reference Model (CDRM), and SDP XML Schema data concept, organization, and document requirements. The following is a guide for navigating through the chapters.

Chapter 2 provides a high level organizational view of the SDP Schema structure. It is a good place to start to learn how to navigate the SDP XML model.

Chapter 3 describes the Schedule Data Profile CDRM and the various ways that it may be implemented. The SDP XML Schema is only one way to implement the model, a physical

[1] See Appendix C Resources for recommended tutorials on these topics.

database is another. This chapter defines the differences between the XML Schema and a typical physical relational database approach. The reader may find this chapter helpful in understanding the differences between the *abstract* (i.e., SDP CDRM) and *implementation* (i.e., XML Schema and physical relational database) approaches, as well as the differences among the implementation approaches. Although the chapter helps to describe the purpose of different modeling and implementation approaches, it is not needed to understand the rest of the document. In fact, it is very specialized for a technical reader.

Chapters 4 through 10 each describe a different set of related data concepts from the SDP CDRM. In particular, each chapter discusses the functional requirements from which the concept derives, the CDRM, and then the rules used to implement the abstract CDRM to the SDP XML Schema. Finally each chapter includes a section on how to apply native data to the SDP data concepts. Examples of SDP XML document fragments and business rules are discussed.

Chapter 11 discusses recommended conformance requirements and how to test conformance. It also describes how to create a "conformance contract," that is, how to extend or constrain the data described in the XML SDP document.

Appendix A identifies special issues encountered by rail data sets. The appendix may help rail professionals translate between transit bus centered language and its rail equivalent, when relevant.

Conventions and Types of Notation Used in This Document

This Requirements Manual uses several conventions and types of notations to describe the requirements and formats for the SDP data concepts.

- In an effort to maintain some consistency with prior SDP project documentation, many of the diagrams and tables are derived from the *Functional Requirements for the Schedule Data Profile* document.
- The Conceptual Data Reference Model uses the entity-relationship diagram notation.
- The SDP XML Schema uses a hierarchical tree-like structure based on the output of a commercial off the shelf tool (XMLSpy).
- Figure 2-4 in Chapter 2 provides a high level look how the XML Schema notation is used.
- The CDRM uses the entity-relationship diagram notation. See Appendix D for more detailed descriptions of the notations used.