



TECHNICAL REPORT	EIA-IS-108™	
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CDIF - Transfer Format General Rules for Syntaxes and Encodings		

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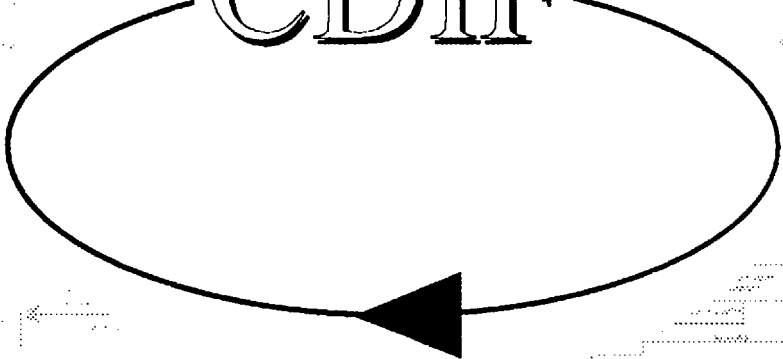
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EIA/IS-108

CDIF



CASE Data Interchange Format
A Division of Electronic Industries Association

CDIF Transfer Format General Rules for Syntaxes and Encodings

January 1994

Electronic Industries Association
CDIF Technical Committee

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PREFACE

This standard will assist the vendors and users of CASE tools in developing mechanisms for interchanging information between CASE tools. This standard specifies an element of a family of related standards. When used together, these standards specify a mechanism for transferring information between CASE tools.

EIA/IS-106 CDIF - CASE Data Interchange Format - Overview and EIA/IS-107 CDIF - Framework for Modeling and Extensibility should be read first when initially exploring CDIF. The first explains the overall CDIF Architecture and how the family of standards fits together. The second explains the scope, and modeling approach in CDIF. The CDIF Meta-meta-model and extensibility mechanism are also defined in that document.

This standard defines how CDIF supports multiple exchange Syntaxes and Encodings, and describes how CDIF meta-models are concretely represented during a transfer. *EIA/IS-109 CDIF - Transfer Format - Syntax SYNTAX.1* and *EIA/IS-110 CDIF - Transfer Format - Encoding ENCODING.1* define one specific CDIF Syntax and Encoding.

This standard has been developed with the wide support and participation of vendors, users, academia and government involved in or familiar with the CASE industry, its products and the general requirements associated with interchanging information between these products.

The material contained in this publication was formulated under the cognizance of the CDIF Technical Committee.

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1. SCOPE

The CDIF Family of Standards is primarily designed to be used as a description of a mechanism for transferring information between CASE tools. It facilitates a successful transfer when the authors of the importing and exporting tools have nothing in common except an agreement to conform to CDIF. The language that is defined for the Transfer Format also has applicability as a general language for Import/Export from repositories. The CDIF Integrated Meta-model defined for CASE also has applicability as the basis of standard definitions for use in repositories.

The standards which form the complete family of CDIF Standards are documented in *EIA/IS-106 CDIF - CASE Data Interchange Format - Overview*. These standards cover the overall framework, the transfer format and the CDIF Integrated Meta-model.

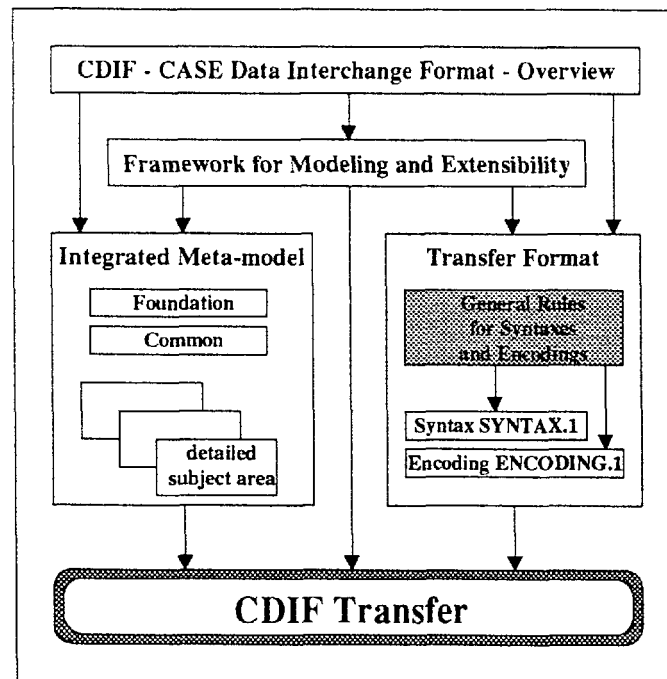


Figure 1
Position in the CDIF Family of Standards

The diagram in Figure 1 depicts the various standards that comprise the CDIF Family of Standards. The shaded box depicts this Standard and its position in the CDIF Family of Standards.

This document describes the way that CDIF meta-models are concretely represented during a transfer and the way that CDIF supports multiple exchange Syntaxes and Encodings. No specific exchange Syntaxes or Encodings are described in this document. *EIA/IS-109 CDIF - Transfer Format - Syntax SYNTAX.1* and *EIA/IS-110 CDIF - Transfer Format - Encoding ENCODING.1* describe one specific CDIF Syntax and one specific CDIF Encoding.

2. INTRODUCTION

2.1 Audience

This document is intended to be used by anyone wishing to understand and/or use CDIF. This document provides a definition of the general rules for syntaxes and encodings for CDIF transfers. It is suitable for:

- those evaluating CDIF
- those who wish to understand the principles and concepts of a CDIF transfer
- those developing importers and exporters.

The document *EIA/IS-106 CDIF - CASE Data Interchange Format - Overview* and the document *EIA/IS-107 CDIF - Framework for Modeling and Extensibility* should be read first when initially exploring CDIF and before attempting to read other documents in the CDIF Family of Standards.

While there are no specific prerequisites for reading this document, it will be helpful for the reader to have familiarity with the following:

- Entity-Relationship-Attribute modeling
- CASE tools
- Information repositories
- Data dictionaries
- Multiple meta-layer modeling
- Formal grammars
- Transfer formats.

2.2 Structure of this Document

This document is organized into the following sections:

Section 1 'Scope'

This describes the CDIF Family of Standards and positions the current document within the set of documents.

Section 2 'Introduction'

This describes the intended audience, structure and conventions used in the document.

Section 3 'Concepts and Definitions'

This describes the concepts of separation of Syntax and Encoding and independence of architecture components, and defines the general rules for data types and character sets in a transfer.

Section 4 'General Structure of the CDIF Transfer'

This describes the purpose of a CDIF transfer, the syntax of the transfer envelope and the general syntax of a CDIF transfer.

Section 5 'Transfer Envelope Formal Grammar'

This defines the precise format of the transfer envelope.

Appendix A 'Questions and Answers'

This includes detailed responses to questions that have been raised by those reviewing this document. It is intended that the inclusion of these will aid the reader in understanding this document, and related issues concerning CDIF.

Glossary

The Glossary contains definitions of terms used within this Standard.

References

This contains details of other standards referenced within this Standard.

Index

A comprehensive index is provided.

2.3 Conventions

2.3.1 Global Conventions

The typographical and naming conventions defined below are used throughout the CDIF Family of Standards.

- Double quotes are used to introduce new terms (e.g., "model layer")
- Bold type is used for emphasis (e.g., this is **important**)
- All meta-objects and meta-meta-objects in CDIF (in meta-models and meta-meta-models) are named by concatenating all the words that name the meta-object or meta-meta-object; the first letter of each word is upper-case, the rest are lower-case (e.g., *MetaAttribute*, *AttributeDerivation*, *IsDrawnUsing*, *IsOptional*)

2.3.2 BNF Conventions

The grammar in this document is defined using an extended version of "Backus Naur Form" (BNF).

In BNF, each syntactic element of the language is defined by means of a Production Rule. A Production Rule defines a syntactic element in terms of an expression, ordered left to right, that can be used to form an instance of the element. The expression can consist of characters, character strings, and other syntactic elements.

The version of BNF used in this document has the following conventions:

<i>Symbol</i>	<i>Meaning</i>
< >	Angle braces delimit character strings that are the names of syntactic elements, i.e., Non-terminal Symbols.
::=	This is the definition operator. It is used in a Production Rule to separate the element defined by the rule from its definition. The element being defined is to the left of the operator and the expression that defines the element is to the right of the operator.
[]	Square braces enclose optional elements in an expression. The portion of the expression within the braces may be explicitly specified or may be omitted.
{ }	Curly braces group elements in an expression, so that the group can be treated as a single syntactic element.
	This is the alternative operator. The vertical bar indicates that the portion of the expression to the right of the bar is an alternative to the portion to the left of the bar. If the vertical bar appears at a position where it is not enclosed in curly or square braces, it specifies a complete alternative for the element defined by the Production Rule. If the vertical bar appears in a portion of the expression enclosed in curly or square braces, it specifies alternatives for the contents of the innermost pair of such braces.
...	The ellipsis indicates that the element to which it applies in a formula may be repeated any number of times (but note that optionality is covered by the square braces convention). If the ellipsis appears immediately to the right of a closing curly or square brace, "}" or "]", then it applies to the portion of the expression enclosed between that closing brace and the corresponding opening brace, "{" or "[". If an ellipsis appears immediately to the right of any other element, then it applies only to that element.

!!	This is the comment operator. This operator introduces normal English text. It is used as a comment in the BNF and when the definition of a syntactic element is not expressed further in BNF.
<TokenName>	Anything emboldened and surrounded by angle braces is a token , a BNF Non-terminal Symbol that is not further defined in the Syntax. The detailed representation of a token is specified in the encoding.
Terminal	Terminal would be a Terminal Symbol. Anything emboldened, and not surrounded by angle braces, is a literal value (i.e., it represents the character string itself).
x .. y	This is the range operator. It refers to any symbol in the range x to y. For example, 0..255 refers to all integers 0 to 255 inclusive.