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Generic requirements for printed board assembly products manufacturing description data and transfer methodology

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TABLE OF CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

GENERIC REQUIREMENTS FOR PRINTED BOARD ASSEMBLY PRODUCTS MANUFACTURING DESCRIPTION DATA AND TRANSFER METHODOLOGY

FOREWORD

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The text of this PAS is based on the following document:	This PAS was approved for publication by the P-members of the committee concerned as indicated in the following document
Draft PAS	**Report on voting**
91/1182/PAS	91/1192/RVD

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Generic Requirements for Printed Board Assembly Products Manufacturing Description Data and Transfer Methodology

1 SCOPE

This standard specifies the XML schema that represents the intelligent data file format used to describe printed board and printed board assembly products with details sufficient for tooling, manufacturing, assembly, and inspection requirements. This format may be used for transmitting information between a printed board designer and a manufacturing or assembly facility. The data is most useful when the manufacturing cycle includes computer-aided processes and numerical control machines.

The data can be defined in either English or International System of Units (SI) units. The format is a convergence of the IPC-2511 “GenCAM” and the Valor Computerized Systems “ODB-X” format structure.

1.1 Focus and intent

The generic format requirements are provided in a series of standards focused on printed board manufacturing, assembly, and inspection testing. This standard series consists of a generic standard (IPC-2581) that contains all the general requirements. There are seven sectional standards that are focused on the XML details necessary to accumulate information in the single file, that addresses the needs of the manufacturing disciplines producing a particular product.

The sectional standards (IPC-2582 through 2588) paraphrase the important requirements and provide suggested usage and examples for the topic covered by the sectional standard.

1.2 Notation

Although the data would be contained in a single file, the file can have different purposes as described in Section 4. The XML schema used for this standard follows the notations set forth by the W3C and is as follows:

element – Element appears exactly one time

element? – Element may appear 0 or 1 times

element* – Element may appear 0 or more times

element+ – Element may appear 1 or more times

Any IPC-258X file is composed of a high level element (IPC-2581) that contains up to six sub-elements:

Content – information about the contents of the 258X file

LogisticHeader – information pertaining to the order and supply data

HistoryRec – change information of the file

Bom – Bill of Materials (Material List) information

Ecad – Computer Aided Design (engineering) information

Avl – Approved Vendors List information

2 APPLICABLE DOCUMENTS

The following documents contain requirements which, when referenced, constitutes provisions of IPC-2581. At the time of publication, the editions indicated were valid. All documents are subject to revision and parties entering into agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the documents indicated below.

The revision of the document in effect at the time of solicitation **shall** take precedence.

IPC-T-50 *Terms and Definitions for Interconnecting and Packaging Electronic Circuits*

IPC-2501 *Definition for Web-Based Exchange of XML Data*

IPC-2524 *PWB Fabrication Data Quality Rating System*

IPC-2511 *Generic Requirements for Implementation of Product Manufacturing Description Data and Transfer XML Schema Methodology*

IPC-2571 *Generic Requirements for Electronics Manufacturing Supply Chain Communication - Product Data eXchange (PDX)*

IPC-2576 *Sectional Requirements for Electronics Manufacturing Supply Chain Communication of As-Built Product Data - Product Data eXchange*

IPC-2577 *Sectional Requirements for Supply Chain Communication of Manufacturing Quality Assessment - Product Data eXchange (PDX)*

IPC-2578 *Sectional Requirements for Supply Chain Communication of Bill of Material and Product Design Configuration Data - Product Data eXchange*

IPC-7351 *Generic Requirements for Surface Mount Design and Land Patterns*