



Material Declaration of Components and Electronic Assemblies: Data Exchange Solutions for Global Environmental Requirements

August 30/31, 2004

Intel - Santa Clara, CA



Materials Composition Data Exchange Project - Statement of Work

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Purpose:

- Work with the appropriate international standards bodies to help define and validate standards for the electronic exchange of Material Composition data between all elements of the value chain and across the entire product lifecycle in order to support requirements of the WEEE and RoHS Directives:
 - Support for bulk material, component, sub-assembly and finished product level reporting
 - Definition of standard data exchange formats and transfer protocols
 - Automate data exchange query and response where possible, while also supporting human interaction



Project Scope

- **International Materials Composition Data Exchange Format Standards**
- **International Materials Composition Data Exchange Protocols**
- **B2B infrastructure requirements required to support the above**
- **Support for “low-tech” data exchange (i.e. email/excel) and its integration into “high-tech” (i.e. xml-based) systems**
- **Support for bulk material, component, sub-assembly, and product level reporting**
- **Support for query and response (customer -> supplier -> customer), as well as publish (supplier -> customer) data exchange processes**
- **Support for multi-tier supply chain data collection**
- **Support for “electronic signature” of supplier provided data to support liability requirements**



Project Objectives

- **Review international activity to understand current state and identify relevant organizations and contacts**
- **Define data exchange requirements and develop use cases to test and validate standards**
- **Identify pilot participants and resources**
- **Determine pilot matrix to exercise use cases**
- **Conduct pilots to validate standards and exchange mechanisms**
- **Develop matrix of available standards and exchange mechanisms against requirements, including pros/cons, dependencies and required infrastructure**
- **Make recommendations on International Materials Composition Data Exchange Format and Protocol Standards**
- **Develop a roadmap for delivering Materials Composition Data Exchange capabilities that covers near-term requirements and technical limitations while providing a path to full B2B capabilities, including IT infrastructure requirements and trading partner dependencies**
- **Produce report summarizing pilot results, recommendations and next steps**



Project Schedule

- **Call for Participation meeting** **June 30, 2004**
- **First Team meeting** **July 7, 2004**
 - Define Team membership
 - Review SOW and revise as required
- **Second Team meeting** **July 14, 2004**
 - Agreement on revised SOW
- **Complete Discovery activities** **Aug. 11, 2004**
- **Conduct 2-day Workshop** **Aug. 30/31, 2004**
- **Define requirements and use/test cases** **Sept. 15, 2004**
- **Identify pilot participants** **Sept. 15, 2004**
- **Complete pilots** **Nov. 24, 2004**
- **Complete Project and issue report** **Dec. 22, 2004**



Workshop Objectives

- Understand the reporting requirements for both RoHS and WEEE.
- Understand the requirements for material composition data at each level in the supply chain, including components and assembly processes.
- Understand current and proposed solutions and the role of data exchange standards, including IPC PDX and RosettaNet.
- Help participating companies and organizations understand the data interchange landscape, and current best practices and future directions, from both a process and IT perspective.
- Understand IT infrastructure requirements, both internal and external.
- Reach consensus on a matrix of data exchange requirements for compliance to materials declaration regulations.
- Help develop a "roadmap" for driving industry standards development and adoption.
- Provide companies with information to support their internal MCD compliance roadmaps.
- Provide relevant standards bodies with user input to drive continuous improvement and coordination, including establishing priorities and a workplan for the delivery of Version 2.0 of the IPC Product Data eXchange (PDX) standard to support MCD compliance.
- Provide standards bodies requirements needed to develop MCD exchange standards which support as-built composition, as-designed material requirements, recycling, and take back.
- Provide solution providers with insight on emerging data exchange formats, and how to meet future customer exchange needs.



Workshop Summary

- **Over 100 registrants representing approximately 43 various companies and organizations**
- **Workshop included over 40 presentations given by:**
 - **Companies across the supply chain including IBM, Dell, HP, Jabil, Celestica, TI, Oracle, SAP, etc.**
 - **Industry initiatives including EIA/EICTA/JGPSSI Joint Industry Materials Declaration Guideline, JGPSSI Green Procurement Tool, NEMI Materials Declaration Working Groups, etc.**
 - **RosettaNet and PDX standards**
 - **Regulatory and technical experts**



Issues discussed during workshop

- **The EIA/EICTA/JGPSSI Joint Industry Guide (JIG) for Materials Declaration**
 - Background and history of effort, including the companies involved in drafting and review of guideline
 - Role in Materials Declaration
 - Currently referenced by major OEMs and Components Suppliers
 - Focused on RoHS requirements. Discussion continues on having JIG accommodate future requirements as they become defined and possibly supporting all degrees of disclosure.
 - General agreement that JIG should be used a baseline since it represents good first step in harmonizing materials declaration by providing common list of materials



Issues discussed during workshop

- **Data exchange needs to support (but not necessarily require) all levels of disclosure**
- **Full disclosure supports Design for Environment; self-declarations are supported by the JIG and other guidance documents as demonstrating compliance**
- **Data exchange protocols are needed since company web portals have not slowed requests**
 - **Solution must enable automatic download into databases**
- **RosettaNet and PDX must coordinate to bridge disparities, address inconsistencies and establish alignment.**



Potentially Relevant Standards & Guidelines

- **Joint Industry Guide** - Material Composition Declaration Guide
- **ECMA Technical Report TR/70** - Product-related environmental attributes (Section 5.8)
- **EN 45014** General criteria for suppliers declaration of conformance
- **IEC 61906**: Procedure for declaration of materials in products of the electrotechnical and electronics industry (DIN 19220)
- **ISO 14021**: Environmental labels and declarations - Self-declaration environmental claims - Guidelines and definition and usage of terms
- **ZVEI** Information on Substances and Materials in Products (Umbrella Spec)
- **JEDEC / IPC J-STD-020C**: Moisture/Reflow Sensitivity Classification
- **JEDEC / IPC J-STD-033A**: Handling, Packing, Shipping and use of Moisture/Reflow Sensitive SMDs
- **JEDEC JESD97**: Marking, Symbols, and Labels for Identification of Lead (Pb) Free Assemblies, Components, and Devices
- **IPC-1065 (1401)**: Material Declaration Handbook (For Users and Manufacturers of Printed Circuit Boards)
- **JGPSSI**: Excel-based worksheet for Material Declaration
- **Centor Compliance Connect**: Excel-based worksheet for Material Declaration
- **IPC-PDX 2.0**: Supply Chain Communication
- **RosettaNet PIP 2A9/2A10**: Query/Distribute Technical/Engineering Information
- **RosettaNet PIP 2A13**: Distribute Material Composition Information
- **ECALGA**: ebXML standard for exchange of engineering data under development by JEITA