

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

Day 2. Wrap-up

August 30/31, 2004

Intel - Santa Clara, CA



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.



Related Activities

- **RoHS Transition Task Group, and more specifically, Materials Declarations sub-team**
- **NEMI/IPC PDX 2.0 development team**
- **RosettaNet 2A9/10, 2A13 PIP development**
- **NEMI 2004 Roadmap, PLIM chapter**
- **NEMI Business Leadership Team**

Issues from Workshop

- **Role of the JIG and other Guides**
- **Full vs. minimum disclosure**
- **Definition of homogenous material**
- **Intentionally added material**
- **Standards – what do we really need, and by when?**
 - RoHS, WEEE, lead-free process, EuP
 - Content vs. attributes
 - Reach out to recycling community to clarify requirements
- **What's the right strategy for producing a coordinated suite of standards?**
- **Supply chain is inundated with proprietary formats for requesting material content- how do we drive education and coordination?**
 - recommended standard format
- **Does Electronics industry want central db, like IMDS?**
- **Reporting units, precision**

Issues (continued)

- **Liability signatures: will companies comply with this? Implication on turn-around time.**
- **Standards coordination, bridge disparities & address inconsistencies.**
 - **Can PDX serve this role?**
- **Declarations: self-declaration? no declaration needed? How can companies show they've done "due diligence"?**
- **Analytical testing methodologies, standards**
- **CAS number harmonization: RNTD coordination with JGPSSI**
- **PDX / RN / ECALGA alignment and overlap**
- **Labeling required to support maintenance & recycling.**
 - **Only requirement is at product level**
 - **RFIDs may be able to link to material data**
- **Local language requirements?**



JIG Discussion

- **JIG has 2 elements – list of materials; data fields**
- **Many attendees are using JIG as baseline**
- **Commitment to JIG implies commitment to extending it to cover evolving needs**
- **Missing guideline for business rules, processes**
 - Eg: how do you communicate changes
 - JIG defines core requirements, not necessarily “how”
- **JIG will need to evolve as regulations change**
- **Doesn't address “substance groups”**



Materials exchange project

- **Suggestion: Project recommend format only, but not content**

Full vs. Minimum Disclosure

- **Full disclosure: complete list of materials in product**
- **EMS tendency towards full disclosure**
- **OEM: not urgent. Some OEMs are asking for minimum disclosure (Intel, HP, Dell).**
- **OEM: trade-off is speed vs. accuracy. Can get a Y/N quickly, but can you trust it?**
 - **Full disclosure also subject to inaccuracies. Won't automatically ensure better quality data.**
- **Intel: banned spec, self-declarations from suppliers, analytical testing for validation.**
 - **Goal: assist customers in demonstrating due diligence.**
- **Does full disclosure encourage additional regulation, incur additional liability?**
- **Component Supplier: “may as well go ahead & do it”**

Full vs. Minimum Disclosure

- **At end of day, will have to support both full and minimum disclosure**
- **Data exchange needs to support all levels of disclosure**
 - Y/N, moderate, full
 - negative declaration contained in JIG
- **Full disclosure supports true Design for Environment**
- **Suggestion: NEMI provide guidance to component suppliers on information to include on data sheets**
- **Website declarations haven't slowed requests**
 - Because its not automatically downloadable into databases

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Standards Coordination

- **IEC/ISO Industry Guide**
 - Could form the basis of national standards
 - Could delineate testing procedures
- **Technology Roadmap on standards**
 - Strawman for October
- **Coordination with IEEE & ANSI**
 - Might need more direct engagement



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



Materials Composition Data Exchange Project - Statement of Work

Version 1.0 July 21, 2004

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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**



Potentially Relevant Standards & Guidelines - Material/Component Content

	Design	Manufacturing	Logistics	End-of-Life
Bulk Materials				
Components				
PCBs				
Sub-assemblies				
PCBAs				
Products				
			?	?



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