



Standardization of Data Exchange for Material Declaration

Seigo ITO (Toshiba)

Chair, ELCI-Team
(Environmental Life Cycle information)

RosettaNet Japan

August 26, 2005



Agenda

Today's presentation

1. Background

2. RosettaNet

3. Material Composition Milestone Program

4. Declaration Format

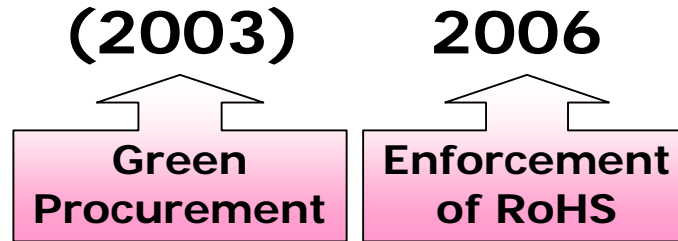
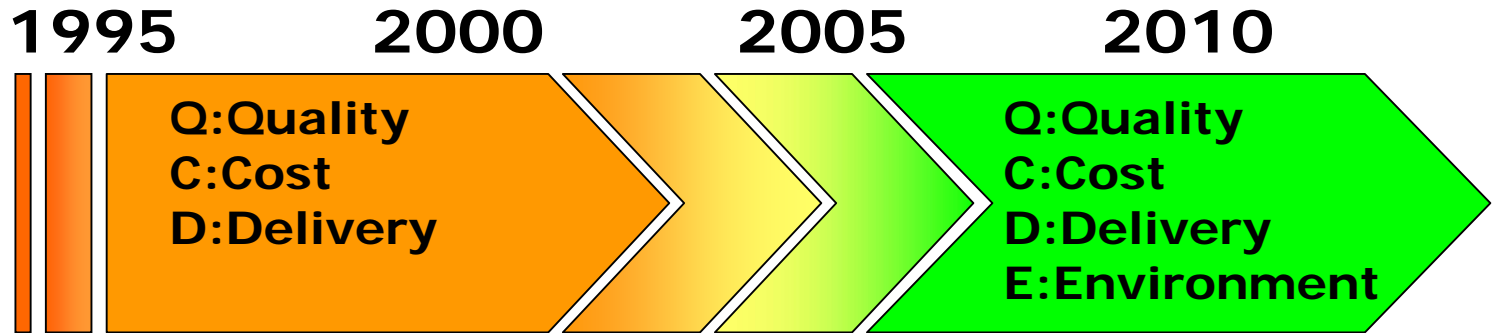
5. Engineering Information Management (Activity of RosettaNet Japan (RNJ))

6. Summary

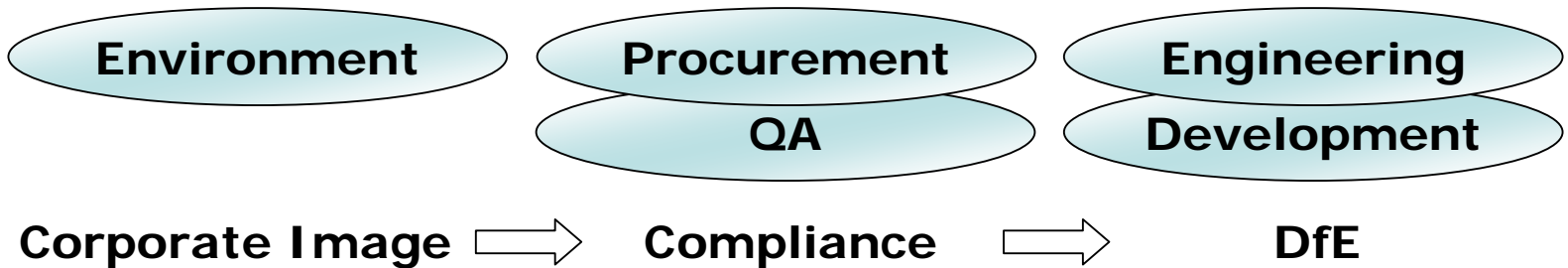


Change in Trading Requirements

Environmental Assurance is a mandatory requirement



Main Section



DfE: Design for Environment



Action of Asian Region

The view points in chronological order

Year 2003

- Minor problems
- Wait and See (restraint of increasing environmental costs)



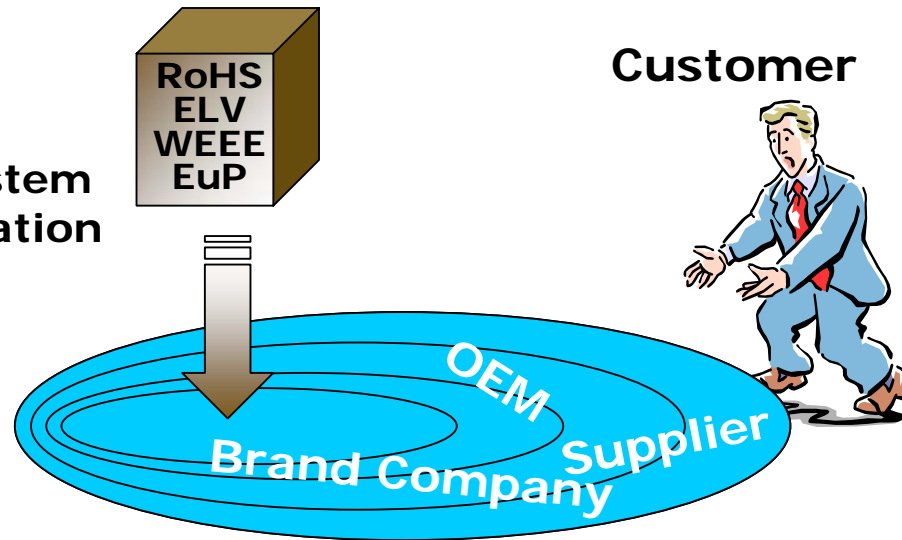
Year 2004

- Build material management system
- Establish management organization
- Upstream management, etc.



Next

- Strategic Alliances
 - > Can't do alone / Work with Partners
 - Infrastructure Maintenance
 - > Develop PDM System
- Services for Web-based Information Distribution Systems**





Various kinds of Requirements

What are our merits?

RoHS/WEEE

email

IMDS

RosettaNet

Different Exchange

SB50
AB2901

RoHS
WEEE
EuP
ELV

ZVEI Spec

Methods

HP549

China

RoHS

ECALGA

Different Directives

Word files

IPC 1065

EIA/EICTA/JGPSSI JIG

Spreadsheets

Different Guidelines

ISO 14021

xml

pdf

What do our customers require?

Different Formats

What are the costs?

What are the benefits?

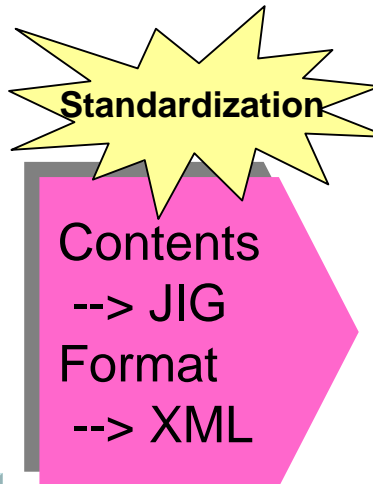
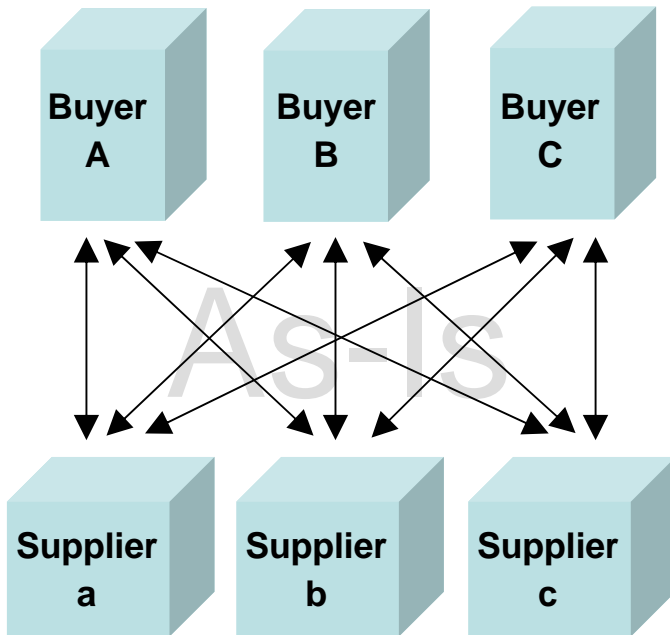
Ref.: Materials Composition Data Exchange Project
NEMI Council Meeting, September 15, 2004
Richard Kubin, Project Chair, Chair, Business Leadership Team



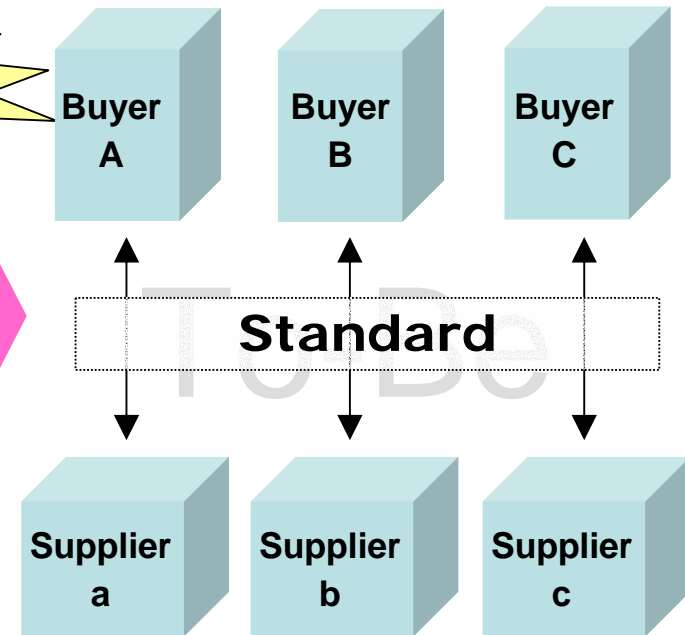
The needs of Material Information Exchange

Standards among partners should be in common

To meet the Regulations, Buyers have to investigate if any hazardous materials exist in product.
(Investigate Green procurement)



If we can standardize the rules, we can reduce the work load for the buyers and suppliers!



Requirements, target materials/substances and response paper formats of each company differs, so Suppliers' work load increases.

JIG: Joint Industry Guide
XML: eXtensible Markup Language





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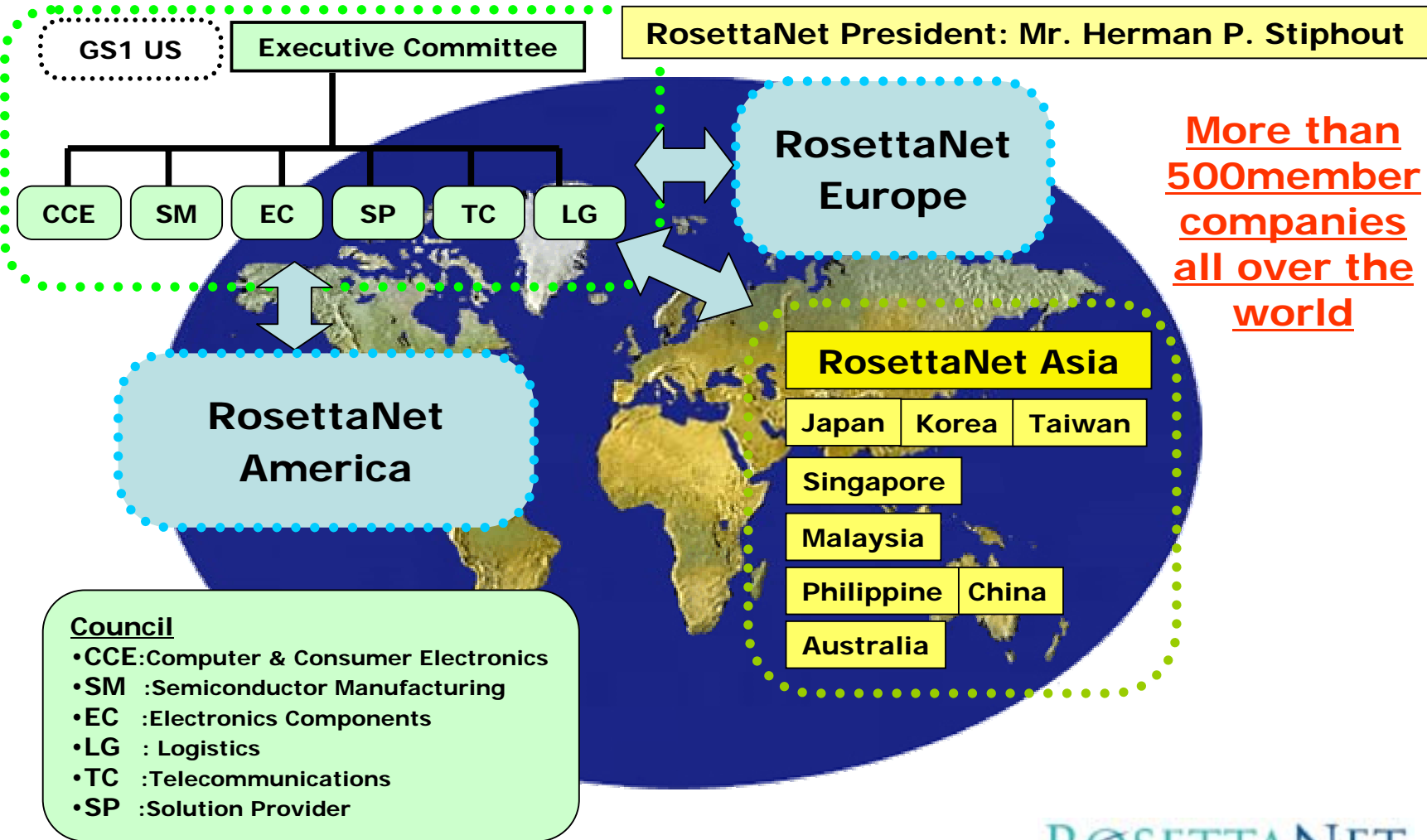
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The expansion of RosettaNet World

B2B Global Standards



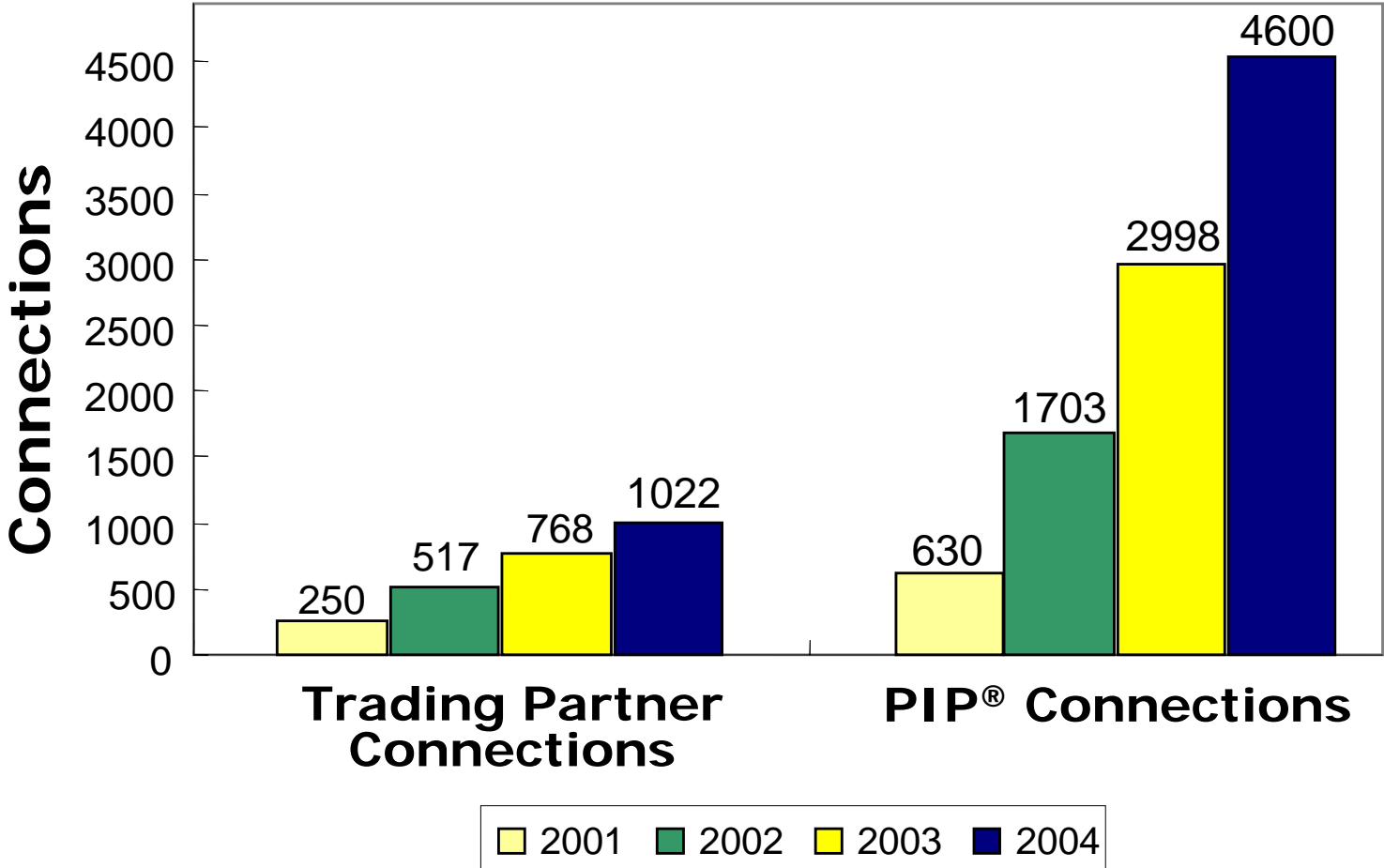
Council

- CCE:Computer & Consumer Electronics
- SM :Semiconductor Manufacturing
- EC :Electronics Components
- LG : Logistics
- TC :Telecommunications
- SP :Solution Provider



RosettaNet Global Connection Results

2001-2004



PIP®: Partner Interface Process®



RosettaNet Milestone Programs

Program Sponsorship (March, 2005)

	Milestone Program	Council Sponsors	CCE	EC	SM	LG	TC
Active	Semiconductor Test Data Exchange	IBM			S		
	Material Composition	Nokia	X	S	X		
	Engineering Information Mgmt	Sony		S			
	RosettaNet Automated Enablement	Intel		S	S		
	Service Contract Management	Cisco Systems	S				X
	Shipment Notification Management	HP		S		X	
	Payment	Intel & Nokia	X	S	X		
	Sales Reporting	Intel	S	X			
	Shipment Booking and Status	Intel				S	
	eCustoms Declaration	Exel & Intel				S	
Forming	Freight Invoicing	Intel				S	
	Material Release	Arrow	X	S			
Proposed	Automated eTicketing	Motorola					S
	eDiagnostics	Intel			S		
	Fulfillment Details	TC Council					S
	Ordering Installation Services	TC Council					S
	Ordering Product Options Configs	TC Council					S
	SC Inline Process Data Exchange	IBM			S		





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Industry Standard Facilitates Product Material Composition Exchange

RosettaNet Press Release / 31 May, 2005

LAWRENCEVILLE, NJ MAY 31, 2005 – RosettaNet and its member companies, Agilent Technologies, National Semiconductor, NEC Electronics, Nokia, Sony, STMicroelectronics, and Texas Instruments, recently announced that the industry standard for exchanging product material composition is now ready for use. The solution is the RosettaNet Partner Interface Process® (PIP®) for material composition. RosettaNet is the technology industry's leading e-business process consortium and a subsidiary of the Uniform Code Council, Inc.® (UCC®), soon to be GS1 US™.

Gathering information on material composition is a challenging new task for the global industry. RosettaNet's member companies have recognized the need to know and disseminate the chemical composition of their products in order to satisfy global legislation, drive environmental improvements in design, and to be capable of providing information for customers and stakeholders when required. To meet compliance requirements of recent European Union Restriction of Hazardous Substances (RoHS) Directives, information about the material composition of all components and bulk materials that go into the manufacturing of products must be available and shared across multiple tiers of the supply chain by July 6, 2006.

In practice, satisfying global legislation means meeting material bans, restrictions, and recycling targets; informing recyclers of potentially hazardous materials; and meeting mandatory safety requirements. Environmental improvements are driven through reduction or elimination of unfriendly materials, and improvements in recyclability at the end of the product's life.

The challenge in identifying material composition lies in the material content itself and the gathering and exchange of this information. Traditionally there has not been any widely recognized global industry standard to address the issue. The absence of a standard solution has resulted in an additional burden for suppliers.

Implementation of the RosettaNet Partner Interface Process in business process integration allows industry to automate the exchange of this information between business partners. It enables companies to acquire the material composition in an efficient and standardized way, while minimizing manual efforts.

⋮

(<http://www.rosettanet.org/rosettanetpressreleases>)





Material Composition

RosettaNet Milestone Program

OVERVIEW

Material composition e-business process allows companies to exchange material composition between supplier and customer. The idea is to include material composition information into other product information exchange. Main reasons to collect material composition information are upcoming legal requirements and increasing market requirements.

VALUE PROPOSITION

In response to government regulations and emerging customer expectations, the high-technology supply chain can streamline the exchange of material composition and related information through a standardized and automated global process.

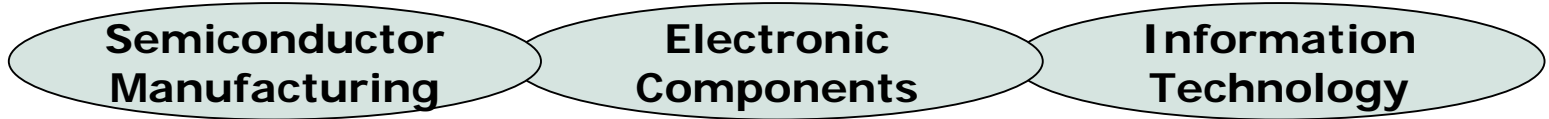
MILESTONE

- Early implementation and validation with at least 6 connections by Q1/2005
- Production implementation by program partners with at least 14 additional connections by July/2005.



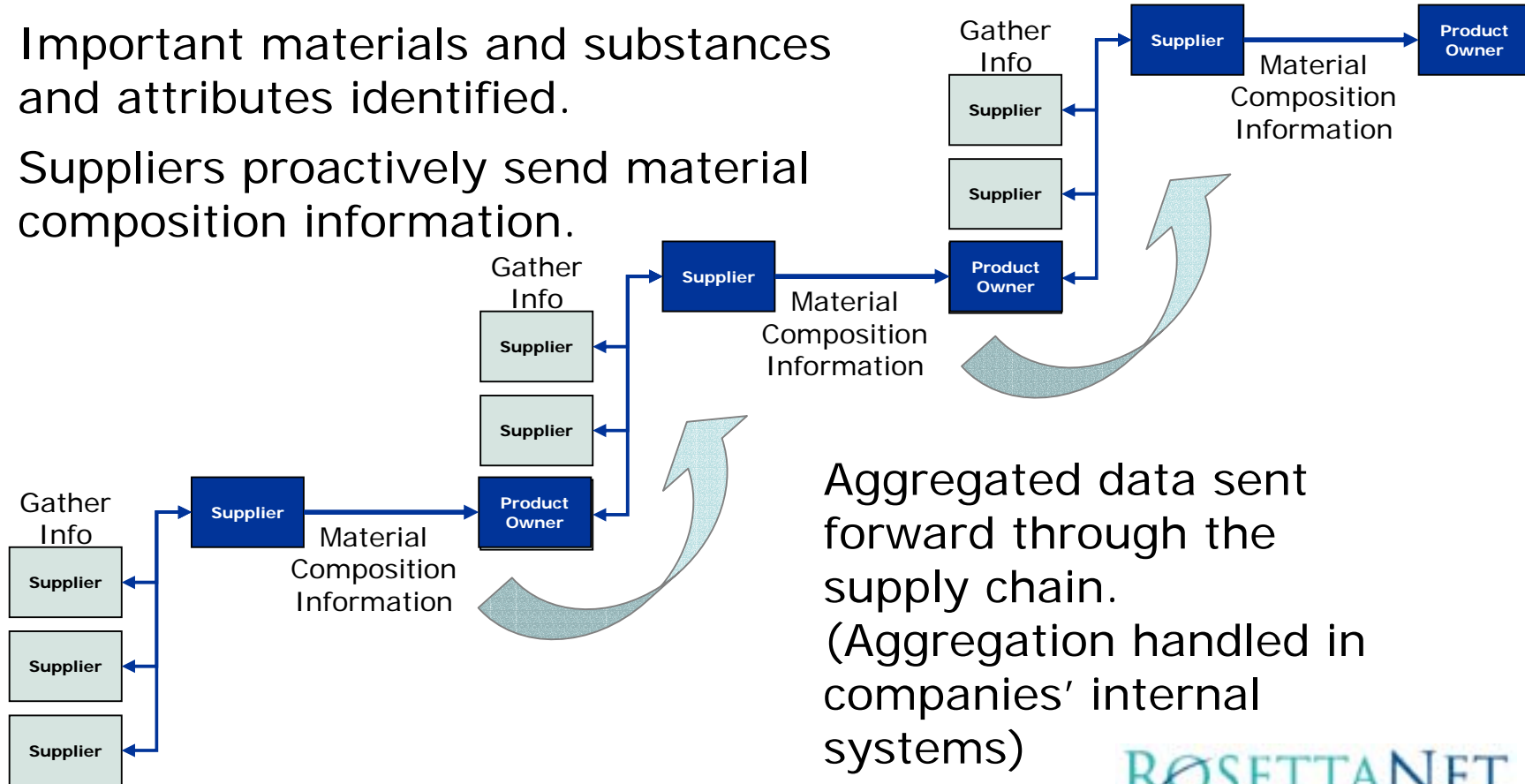
Material Composition E-Business Process

Redesigned Gathering Method



Important materials and substances and attributes identified.

Suppliers proactively send material composition information.

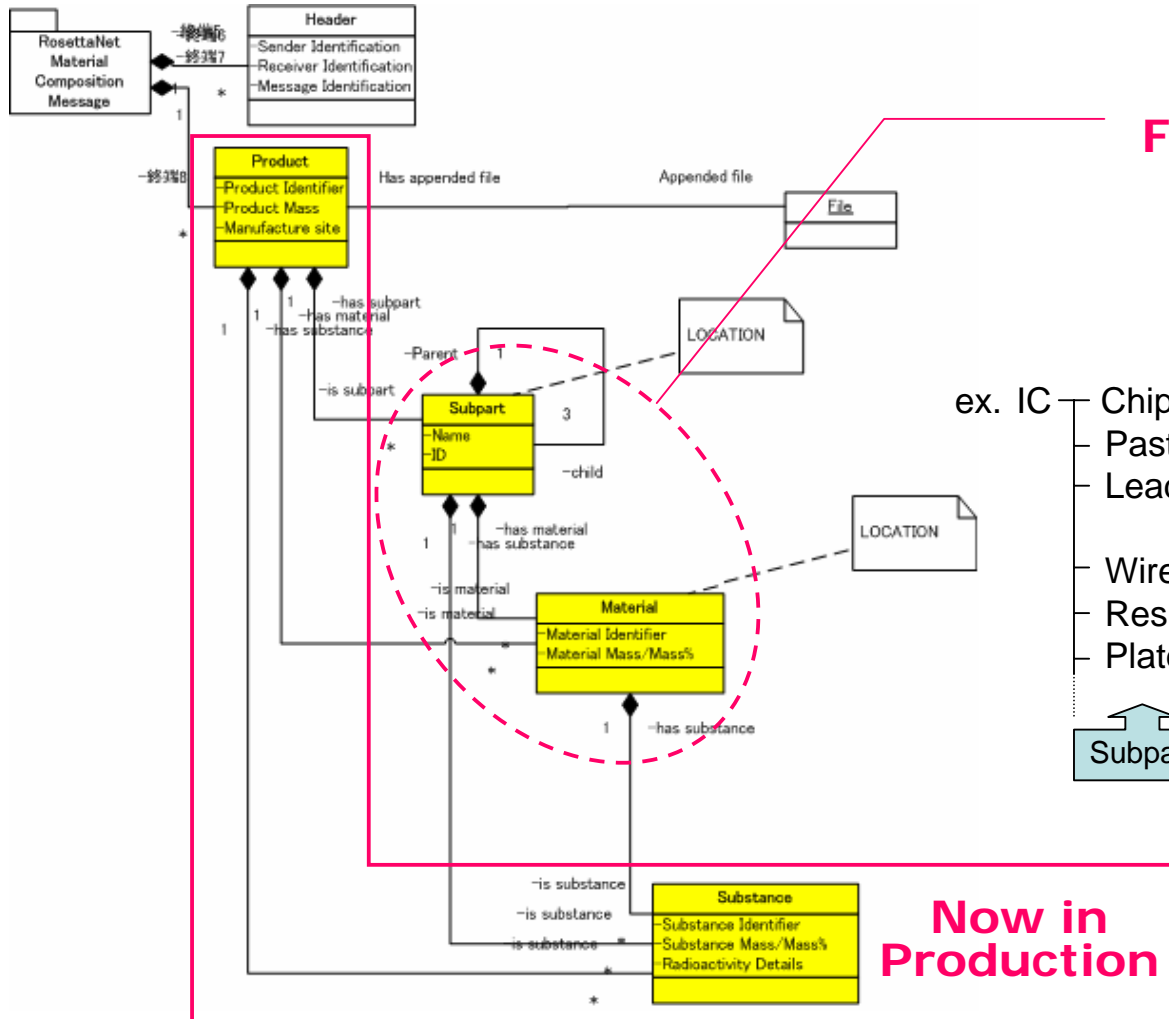


Aggregated data sent forward through the supply chain.
(Aggregation handled in companies' internal systems)



Material Composition Data Model

Requirements by Material Composition Milestone Program

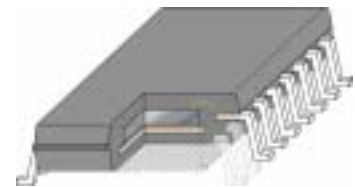
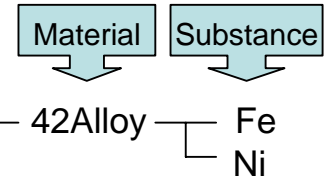


Future Scope: BOM (Bill Of Material)

ex. IC

- Chip
- Paste
- Lead Frame — 42Alloy
- Wire
- Resin
- Plate

Subpart



Now in Production

Material Composition Definitions in RNTD

RNTD contents based on Industry Standards

Annex A	Annex B
Asbestos	Antimony/Antimony Compounds
Azo colorants	Arsenic/Arsenic Compounds
Cadmium /Cadmium Compounds	Beryllium/Beryllium Compounds
Hexavalent Chromium/Hexavalent Chromium Compounds	Bismuth/ Bismuth Compounds
Lead/Lead Compounds	Brominated Flame Retardants (other than PBBs or PBDEs)
Mercury/Mercury Compounds	Copper/Copper Compounds
Ozone Depleting Substances (CFCs, HCFCs, HBFCs, carbon tetrachloride, etc.)	Gold/Gold Compounds
Polybrominated Biphenyls (PBBs)	Magnesium
Polybrominated Diphenylethers (PBDEs)	Nickel/Nickel Compounds
Polychlorinated Biphenyls (PCBs)	Palladium/Palladium Compounds
Polychlorinated Naphthalenes (more than 3 chlorine atoms)	Phthalates
Radioactive Substances	Selenium/Selenium Compounds
Shortchain Chlorinated Paraffins	Silver/Silver Compounds
Tributyl Tin (TBT) and Triphenyl Tin (TPT)	Vinyl Chloride Polymer (PVC)
Tributyl Tin Oxide (TBTO)	

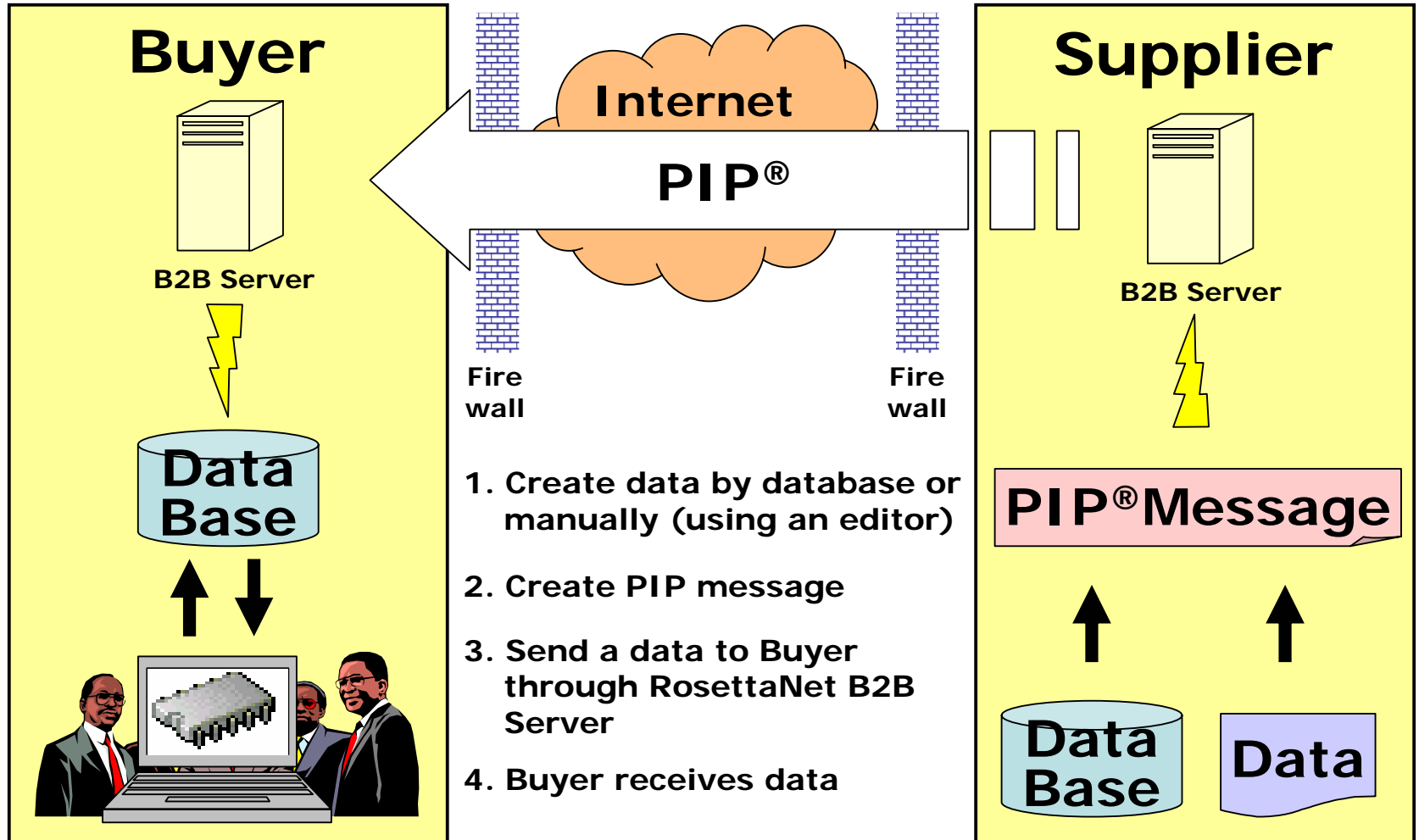
- Contents based on JIG (Joint Industry Guide)
- Defines every substance by related code
- 24(+5) Material/Substance Categories, 400 Substances

Preferred Name	Short Definition	Formula	Long Definition	Remarks
Cadmium/Cadmium Compounds	The group of metals with cadmium as an element		The substance with the following CAS numbers:	Including the following:
		Cd	7440-43-9	Cadmium
		CdO	1306-19-0	Cadmium oxide
		CdS	1306-23-6	Cadmium sulfide
		CdCl ₂	10108-64-2	Cadmium chloride
		CdSO ₄	10124-36-4	Cadmium sulfate
		-----	9999-99-9	Miscellaneous

- RJT031-001
 - RJT032-001
 - RJT033-001
 - RJT034-001
 - RJT035-001
 - RJT382-001
- } RJP015-001

Sending Data using RosettaNet

Case: Supplier owning a B2B Server



PIP[®]: Partner Interface Process[®]

ROSETTANET
eBusiness Standards for the Global Supply Chain



Interoperability Festa

12, Nov. 2003 in Tokyo



Copyright 2003 Sony EMCS Corporation



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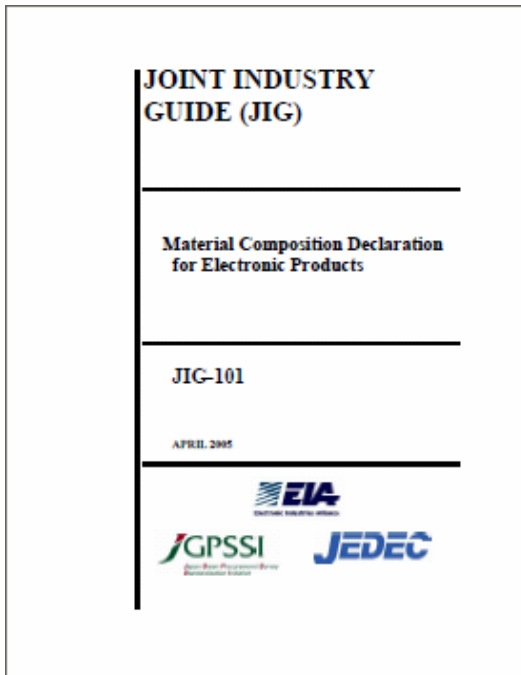
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(Activity of RosettaNet Japan (RNJ))

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Research Format

2 Formats that comply with JIG (Joint Industry Guide)



Released May 25, 2005

1) JGPSSI Format

- Developed by JGPSSI
- Excel Format
- Rolled Format compliant
 - > Only the Material/Substance Category in the products
- Version 1 already in use.
Currently changing the format to comply with the new JIG (To be released 12/2005)

2) IPC-1752

(RAE program)

- Developed by iNEMI, IPC, RosettaNet
- PDF Format (Ver.7.0)
- Formatted by IPC-1752-1/1752-2
- Full Format compliant
 - > BOM Level description available
- Currently reviewing the Draft version.
(To be released 9/2005)

JGPSSI: Japan Green Procurement Survey Standardization Initiative

IPC: Association Connecting Electronics Industries

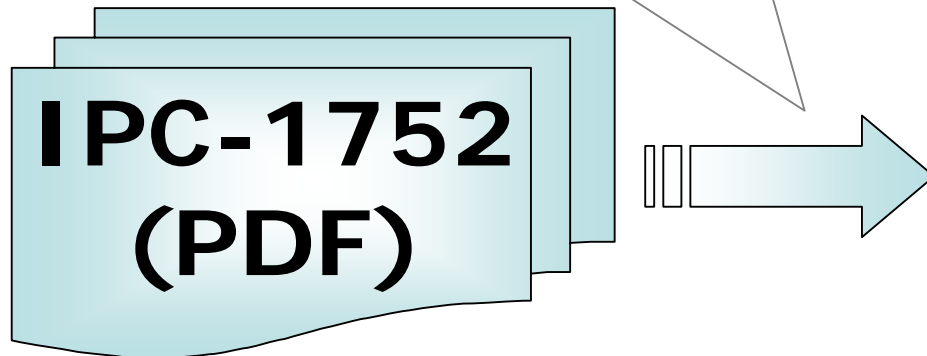
iNEMI: International Electronics Manufacturing Initiative

Data utilization of IPC-1752

Export and Import of XML (PIP[®]) Data

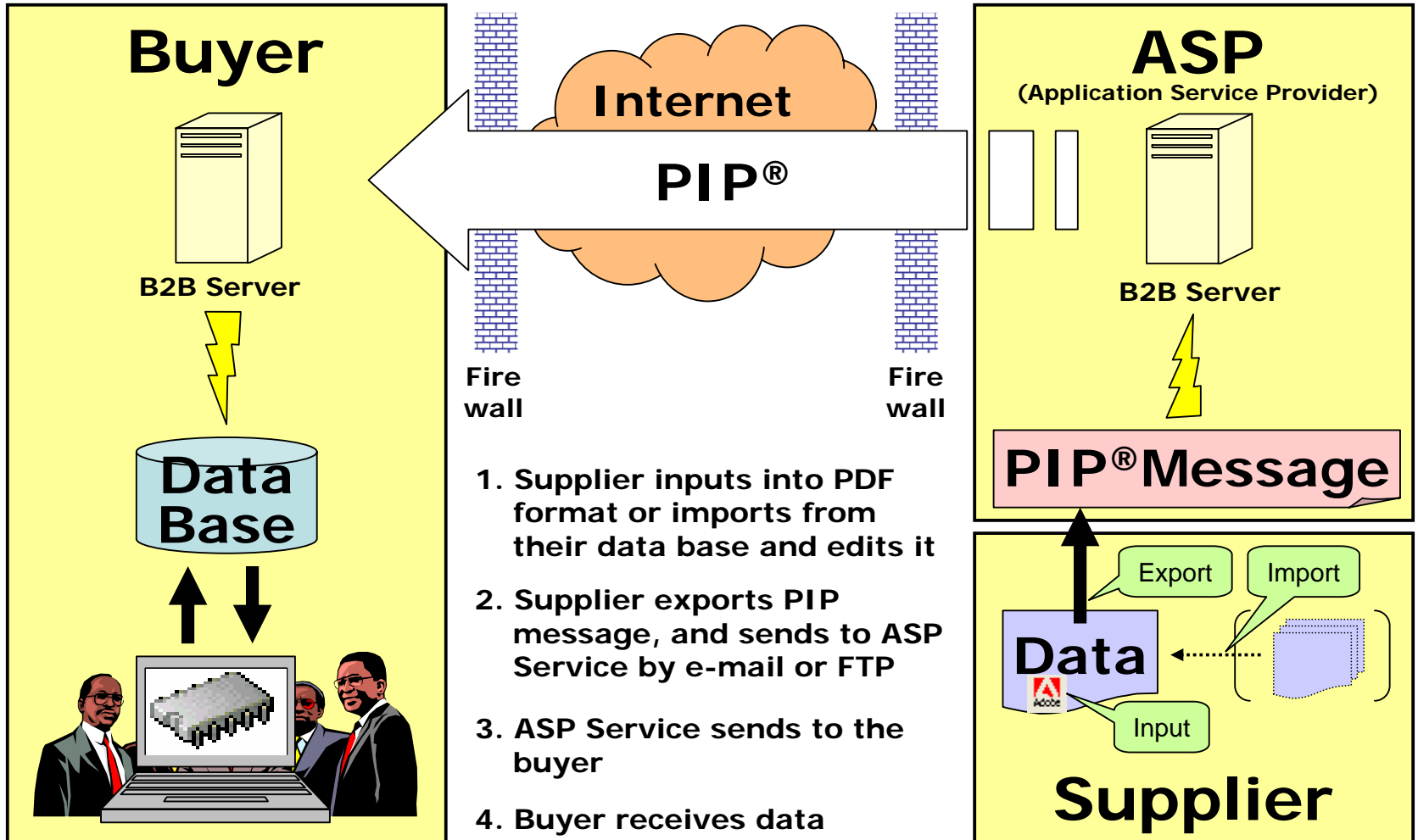


The data can be exported to, as well as imported from, XML.
(IPC1752<--XML)



Information Distribution using an ASP Service

Case: Supplier not owning a B2B Server



PIP®: Partner Interface Process®



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RNJ Members List

Board & Partner Members

Board Company Name

- 1 FUJITSU LIMITED
- 2 Hitachi,Ltd
- 3 Kyocera Corporation
- 4 Microsoft Co.,Ltd
- 5 NEC Corporation
- 6 Nihon Unisys Ltd.
- 7 NTT Communications Corporation
- 8 Otsuka Shokai Co.,Ltd.
- 9 ROHM CO.,LTD.
- 10 Sony Corporation
- 11 TOSHIBA CORPORATION
- 12 Renesas Technology Corp.

Coalition Partner

- 1 Object Technology Institute, Inc
- 2 Japan Electric Measuring Instruments Manufacturers' Association(JEMIMA)

Partner Company Name

- 1 ADOS Co.,LTD
- 2 ADVANTEST CORPORATION
- 3 ARGO 21 CORPORATOPN
- 4 BEA Systems Japan, Ltd
- 5 Cisco Systems, Inc.
- 6 DAI NIPPON PRINTING CO., LTD.
- 7 Data Applications Company. Limited
- 8 E2 Open Inc.

- 9 Electronic Devices Information Service Co., Inc
- 10 Freescale Semiconductor Japan Ltd.
- 11 Global eXchange Services Japan Corporation
- 12 Hewlett-Packard Japan, Ltd.
- 13 Ibiden Co., Ltd
- 14 Infoteria Corporation
- 15 Intec,Inc.
- 16 Intel K.K.
- 17 ITOCHU TECHNO-SCIENCE Corporation
- 18 Japan Aviation Electronics Industry, Limited
- 19 JFE Systems, Inc.
- 20 JSR Corporation
- 21 Justsystem Corporation
- 22 Kanematsu Electronics LTD.
- 23 Kintetsu World Express, Inc.
- 24 Matsushita Electric Co.,Ltd.
- 25 Mitsubishi Electric Corporation
- 26 Mitsui Knowledge Industry Co., Ltd.
- 27 Mizuho Corporate Bank, Limited
- 28 MOLEX JAPAN CO LTD
- 29 NEC Electronics Coporation
- 30 NEC Soft,Ltd.
- 31 NEC Tokin Corporation
- 32 NICHICON CORPORATION
- 33 NIPPON CHEMI-CON CORPORATION
- 34 Nippon Express Co., Ltd.
- 35 NIPPON TELEGRAPH AND TELEPHONE EAST CORPORATION

- 36 NS Solutions Corporation
- 37 NTTDATA CORPORATION
- 38 PFU Active Labs. Limited
- 39 PIONEER CORPORATION
- 40 Ryosan Company,Limited
- 41 Sanshin Electronics Co,LTD
- 42 Sanyo Electric Company Ltd.
- 43 SAP JAPAN Co.,Ltd
- 44 SEIKO EPSON CORPORATION
- 45 SHARP CORPORATION
- 46 SHINKO ELECTRIC INDUSTRIES CO.,LTD.
- 47 Shinko Shoji Co.,Ltd
- 48 SOFTBANK TECHNOLOGY CORP.
- 50 Sterling Commerce K.K.
- 51 STMicroelectronics K.K.
- 52 SUMITOMO BAKELITE CO.,LTD
- 53 Sumitomo Mitsui Banking Corporation
- 54 Sun Microsystems,Inc.
- 55 TAIYO YUDEN CO.LTD
- 56 Texas Instruments Ltd
- 57 Tokyo Ohka Kogyo Co., Ltd.
- 58 Toppan Printing Co.,Ltd.
- 59 TOSHIBA DOCUMENTS CORPORATION
- 60 Toshiba Logistics Corporation
- 61 Transcosmos inc.
- 62 Tsuken Advanced System co.
- 63 Tyco Electronics Corporation
- 64 UFJ Bank Limited

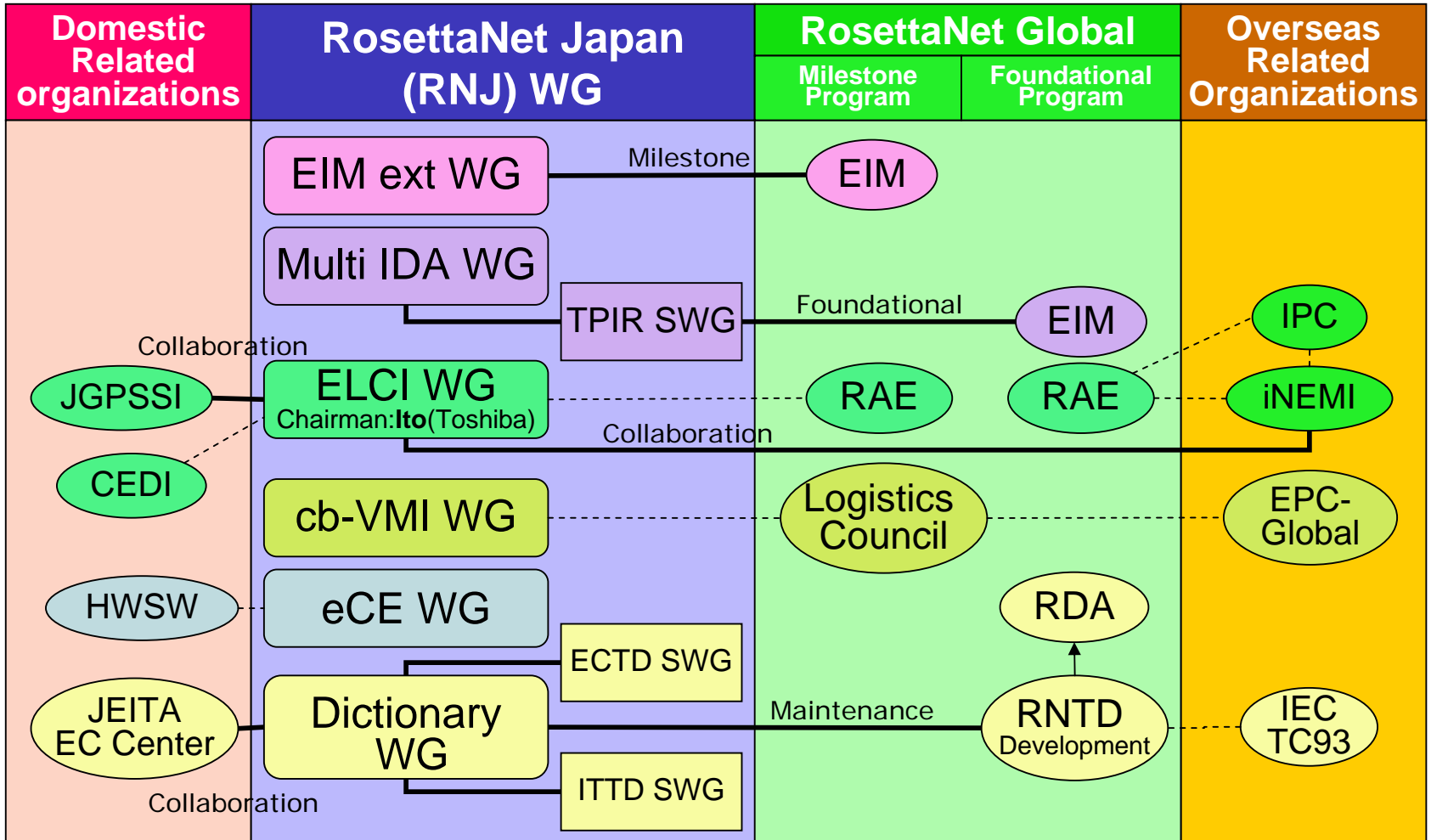
RNJ: RosettaNet Japan

*as of Aug. 2005



RNJ Working Group relationship

Collaboration with related organizations

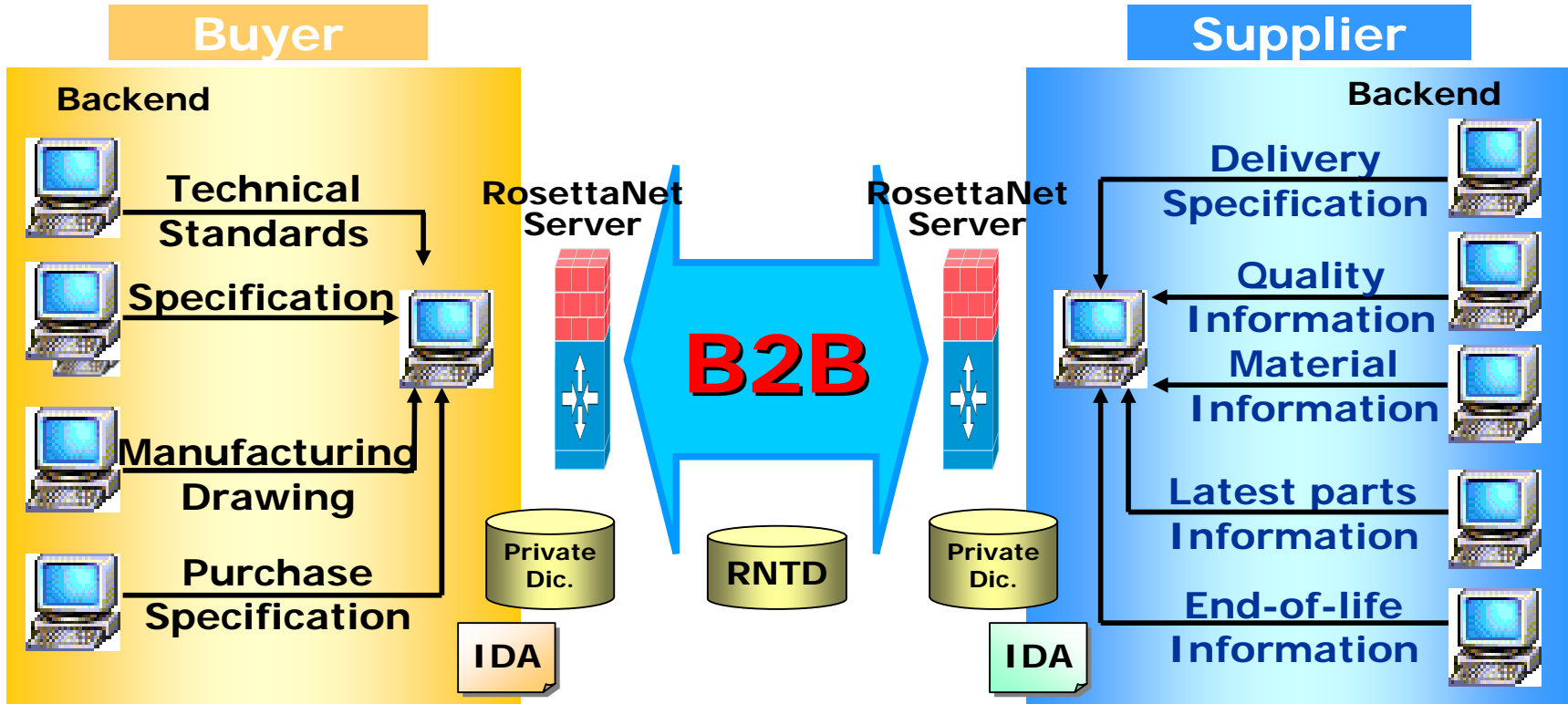


EIM: Engineering Information Management
 ELCI: Environmental Life Cycle Information
 eCE: e-Catalog Exchange

IDA: Information Distribution Agreement
 cb-VMI: cross board Vender Managed Inventory

EIM Activities within RNJ

Why is EIM activity needed?



Buyers demand:

- The buyer wants reliable information data.
- The buyer wants the latest parts technical information from supplier.
- The buyer want to use information within whole company without any modification.

EIM: Engineering Information Management
IDA: Information Distribution Agreement
RNTD: RosettaNet Technical Dictionary

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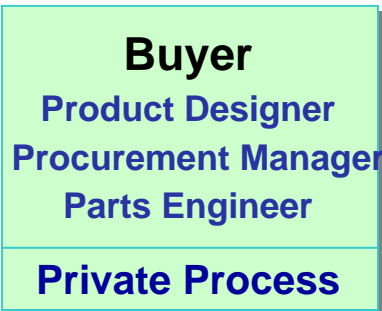
Why RosettaNet?

The effectiveness of B2B exchange

- Highly secure transportation
- Computer readability and real time processing
- Easy data processing, information comparison capability.
- Ability to handle attached files (pictures & photos, CAD info etc.)
- Automated distribution to all related div. at once from the backend system

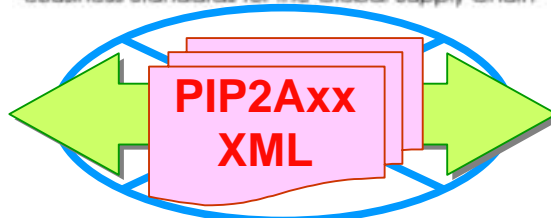
Internet

Total Products Process
<IT innovation>



Translator

ROSETTANET
eBusiness Standards for the Global Supply Chain



Public Process

Information distribution to customer
<Database innovation>



Translator

- Delivery Spec.
- Material Info.
- Parts Info.
- End-of-life Info.
- etc.

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eBusiness Standards for the Global Supply Chain



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Summary

Information exchange through RosettaNet

- 1. Material Composition Information exchange is urgently needed in current business situation.**
- 2. RosettaNet is working on not only material information, but also on the EIM(Engineering Information Management) to be able to deal with all exchanges of technical information.**
- 3. RosettaNet is the one and only solution that can make it possible to exchange information through the entire supply chain.**
- 4. RosettaNet makes information exchange between business partners efficient.**



Thank you!

ROSETTANET
eBusiness Standards for the Global Supply Chain

<http://www.rosettanet.org>
<http://www.rosettanet.gr.jp>

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Appendix

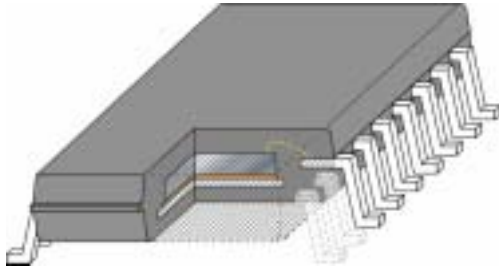
Appendix

Appendix

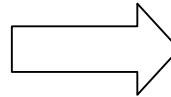
Current Issue

What is a realistic solution?

Semiconductor



Printed Circuit Board



Environmentally constrained Materials

1,000 x 10 subparts = 10,000

10,000 x 300 subparts = 3million!

- Molding compound
- Lead Frame
- Device
- Die Attach Paste
- Die Pad Plating
- Wire
- Surface Plating
- Packaging material
- others

} about 10
subparts

**Individual responses and
maintenances is so difficult!
(cost, resources, etc.)**



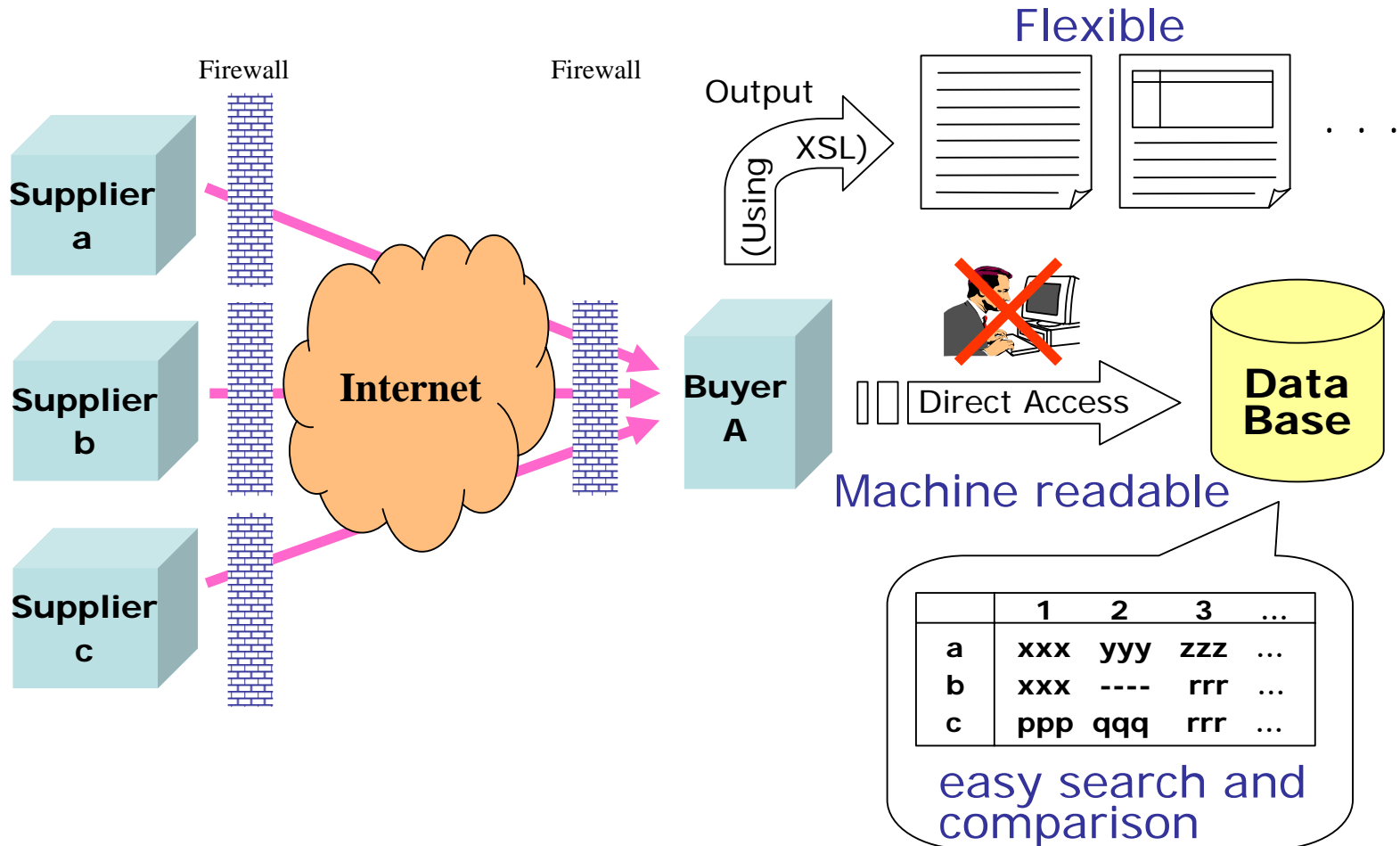
**A practical and applicable
method is important.**

= Standardization



Advantages of using XML

eXtensible Markup Language



Introduction to Books (in Japanese)

Books on WEEE & RoHS Legislation and Green Purchasing



1) 図解よくわかるWEEE&RoHS指令 (Understanding WEEE & RoHS Through Illustrations)

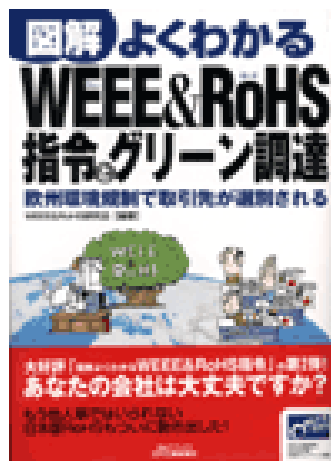
欧州環境規制でモノ作りが変わる

日本電子(株)応用研究センター 編著

A5判 240頁 定価1890円(税込)

ISBN4-526-05292-2

C3034



2) 図解よくわかるWEEE&RoHS指令とグリーン調達 (Understanding WEEE, RoHS & Green Purchasing Through Illustrations)

欧州環境規制で取引先が選別される

WEEE&RoHS研究会 編著

A5判 240頁 定価1890円(税込)

ISBN4-526-05440-2

C3034



Useful Environmental Information in RNJ Website

<http://www.rosettanet.gr.jp/bizPromotion/environment/index.html>



- Compliance
- WEEE/RoHS, ELV, REACH, EuP, Packaging, Batteries, other
- Substance Investigations
- JIG, GADSL
- Related Organizations
- Reports and Presentations
- Data Mapping
- JIG-JGPSSI-RNTD Comparison Table
- RosettaNet Standards for Material Composition Reporting
- PIP, RosettaNet dictionary, RIG, reference documents
- Useful Links

エコプライアンス

- WEEE/RoHS
- ELV
- REACH
- EuP
- Packaging
- Batteries
- 総合

WEEE/RoHS

公布: 2003年1月
 施行: 2005年7月
 対象: 一般電気・電子機器・除外リストあり

内容の概略は指令(2)に示されていますが、対象の物質の簡便、適用対象、除外対象などの詳細はTAC(技術検討委員会)(4)で審議進行中です。このためTACの動向や加盟国の詳細解説によって情報更新する必要があります。DTI(英国貿易産業省)のガイダンス(5)は関係者の多くが理解の拠り所となっている文書です。

No.	テーマ	資料内容/説明	言語	リンク
(1)	WEEE指令	2002/96/EC 原文	英	PDF
(2)	RoHS指令	2002/95/EC 原文	英	PDF
(3)	WEEE/RoHS指令	ジョイントによる40問	日	PDF
(4)	TAC情報	DTIによる非公式TAC	英	HTML
(5)	除外申請	インターネット・アクセス 意見書 除外申請評価レポート(ERA Dec. 2004)	英	PDF
(6)	ガイダンスノート	DTIによる英国国内向けガイダンス(2005年8月版) DTIによる英国国内向けガイダンス(2004年7月版) RosettaNet Japanによる40問(2004年7月版)	英	PDF
(7)	FAQ	EUのWEEE/RoHS(FAQ集)	英	PDF
(8)	その他	RoHSエコプライアンス報告(ERA, 2004) ジョイント発行ユー・ロ・レ・ド 2005年2月RoHS解説 UK民間Website (Compliance Club)	英	PDF