



Impact of EU-RoHS on Japanese Companies and Countermeasures

**APEC Sub-Committee on Standards and Conformance Trade Facilitation Task Force (TFTF)
Joint Meeting with APEC Chemical Dialogue (CD) on Restrictions on Hazardous Substances (RoHS)**

**Takao Sato
Ricoh Company, Ltd.
June 24, 2007**

General Information

1. **Solutions Provider** including manufacturing & marketing office equipments, founded in 1936.

2. FY2006 Consolidated Data

- Net Sales: ¥ 2,069 Billion
 (US\$ 17.7 Billion)

- Net Income: ¥ 112Billion
 (US\$ 957Million)

US\$=Japanese Yen 117

-Number of Employees: 81,900

2003 World Environment Center Gold Medal for International Corporate Achievement in Sustainable Development : To Ricoh Group, as the first winner from Asia/Pacific region (May, 2003)

<http://www.ricoh.com/environment/global/wec/>

<http://www.wec.org/>



Dr. Klaus Toepfer, Executive Director of UNEP (left) presented the WEC Gold Medal to Mr. M. Sakurai, former CEO of Ricoh..

”Environmental Management Ranking” by Nikkei Newspaper: Ricoh has got **#1 position four times** in the past 10 years.

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RoHS directive and the following directives for exemptions

RoHS Directive **EU Official Journal (L 37/19) issued on Feb.13, 2003**

DIRECTIVE 2002/95/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment

Additional Exemptions No. 1

EU Official Journal (L 271/48), (L 280/18) issued on Oct.15, 2005



Additional Exemptions No. 2

EU Official Journal (L 280/18) issued on Oct. 25, 2005



Additional Exemptions No. 3

EU Official Journal (L 115/38) issued on Apr. 28, 2006



Additional Exemptions No. 4

EU Official Journal (L283/47), (L283/49), (L283/50) issued on October 14, 2006

EU Official Journal (L283/49) issued on October 14, 2006

- **Lead** and **cadmium** in **printing inks** for the application of enamels on borosilicate glass.
- **Lead** as impurity in RIG (**rare earth iron garnet**) **Faraday rotators** used for fibre optic communications systems.
- **Lead** in **finishes of fine pitch components** other than connectors with a pitch of 0.65 mm or less with NiFe lead frames and lead in finishes of fine pitch components other than connectors with a pitch of 0.65 mm or less with copper lead-frames.
- **Lead** in **solders** for the soldering to machined through **hole discoidal and planar array ceramic multilayer capacitors**.
- **Lead oxide** in **plasma display panels (PDP)** and **surface conduction electron emitter displays (SED)** used in structural elements; notably in the front and rear glass dielectric layer, the bus electrode, the black stripe, the address electrode, the barrier ribs, the seal frit and frit ring as well as in print pastes.

- **Lead oxide** in the glass envelope of Black Light Blue (BLB) lamps.
- **Lead alloys** as solder for transducers used in high-powered (designated to operate for several hours at acoustic power levels of 125 dB SPL and above) **loudspeakers**.

EU Official Journal (L283/50) issued on October 14, 2006

- **Hexavalent chromium** in corrosive preventive coatings of unpainted metal sheetings and **fasteners** used for corrosion protection and Electromagnetic Interface Shielding in equipment falling under category three of Directive 2002/96/EC (IT and telecommunications equipment). Exemption granted until 1 July 2007.

EU Official Journal (L283/47) issued on October 14, 2006

- **Lead** bound in **crystal glass** as defined in Annex I (Categories 1, 2, 3, and 4) of Council Directive 69/493/EEC.

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**RoHS Enforcement
Guidance Document**

Version 1 – issued May 2006

This Guidance Document has been developed through discussions within the “EU RoHS Enforcement Authorities Informal Network”.

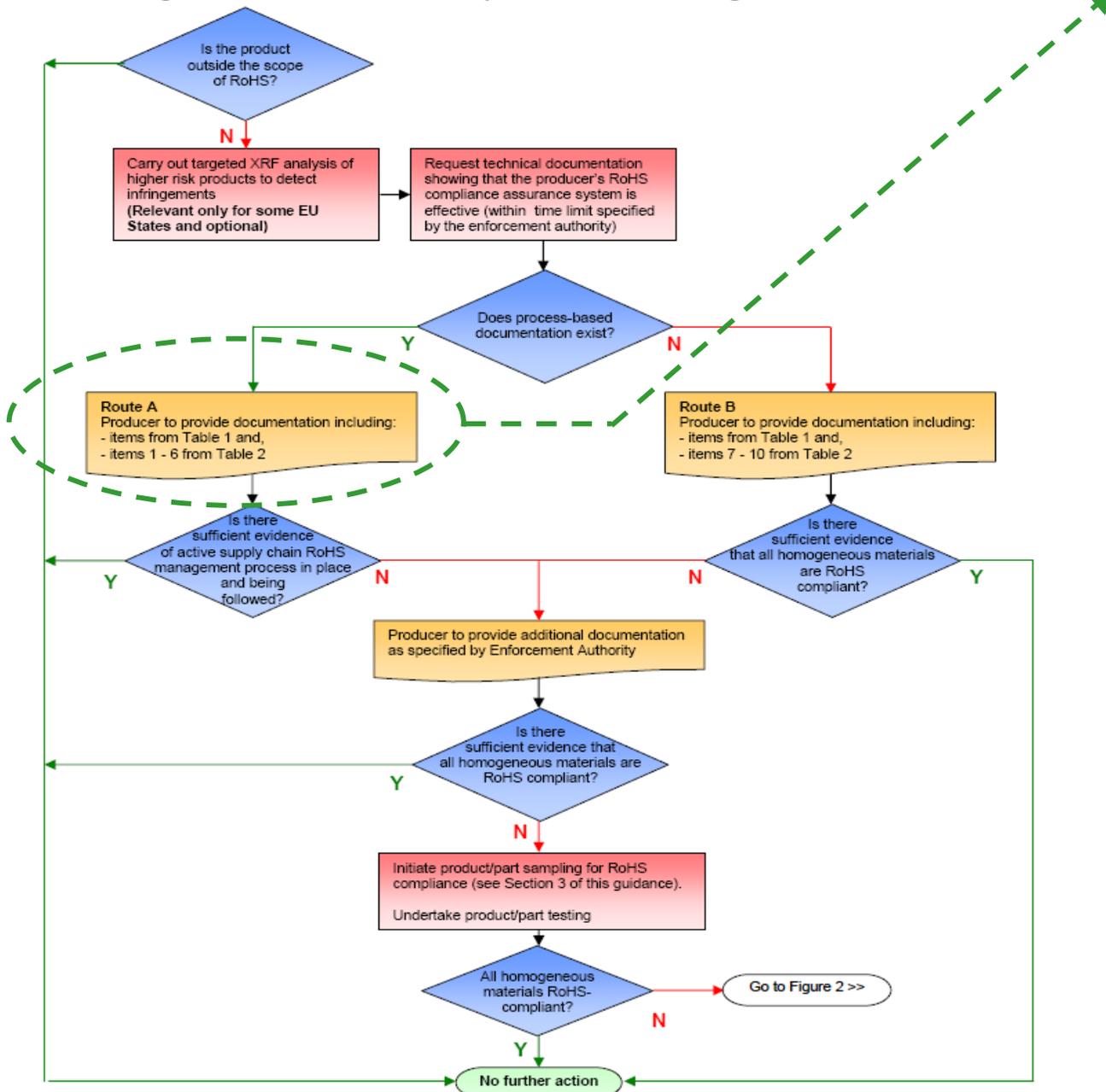
It should be noted that the document is informative and advisory, but has no legal authority.

Individual Member State RoHS enforcement authorities are bound by their own national legal structures and can only apply this guidance within the confines of those structures.

Key issues addressed in the Guidance :

- Overall approach to RoHS compliance is based on **Presumption of Conformity**.
- The proposed enforcement process provides **two initial routes to self-declaration**, taking into account that for **SMEs** in particular.
- **Route A** shows that **documentary evidence of structured internal systems based on quality assurance processes** in assessing producer’s ability to manage **RoHS compliance** for those companies or organizations.
- The process may be facilitated by the initial provision of compliance **documentation for homogeneous materials in products/parts (Route B)**.
- In cases of concern, **detailed sampling and testing** may or could be required.

Figure 1 - Flow chart for RoHS Compliance Assessment Using Documentation



Note - This flow-chart should not be viewed in isolation from the main enforcement guidance document.

Route A

Process-based

Technical Documentation

(Typical information relating to the producer's internal system to ensure RoHS compliance)

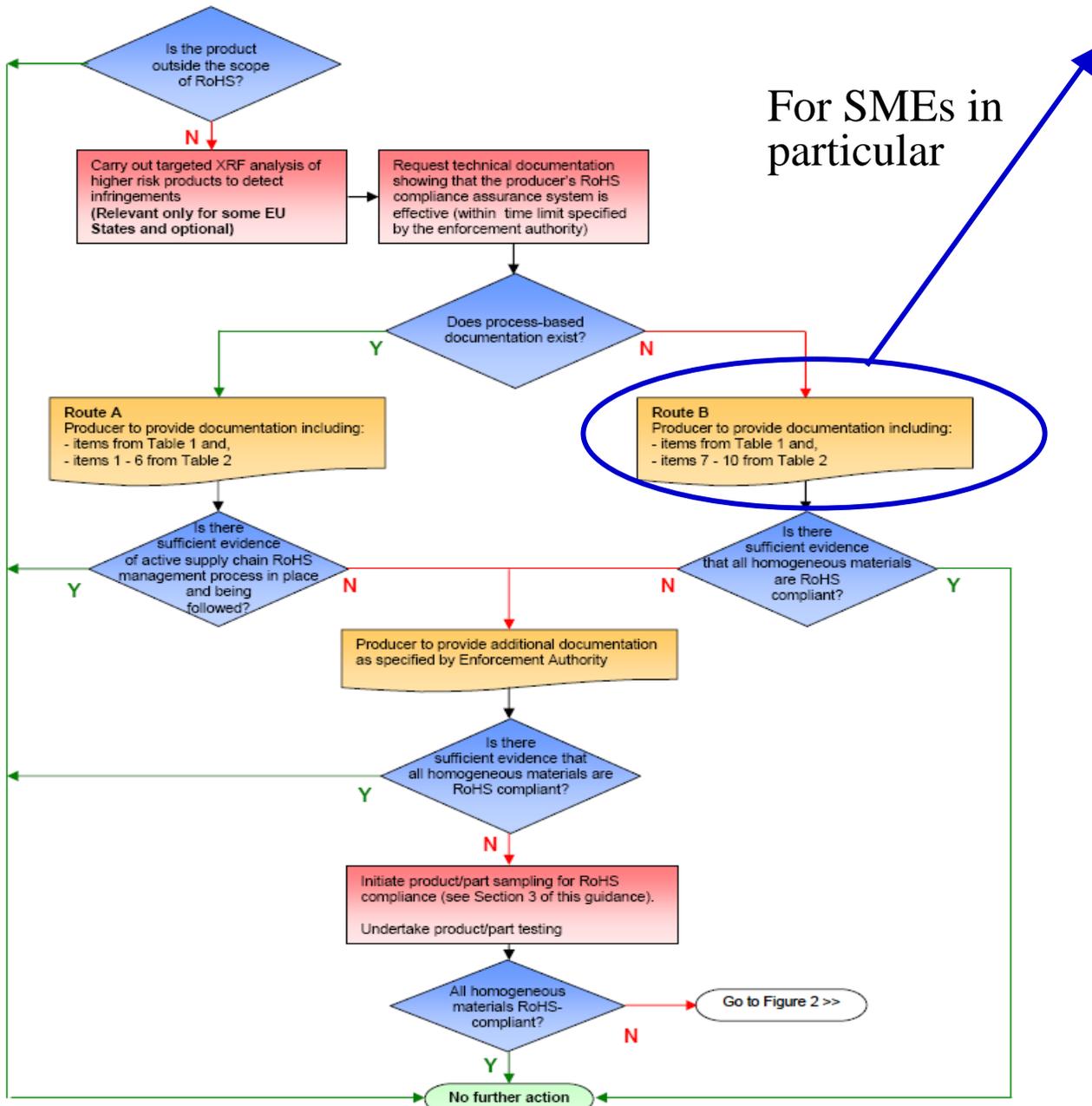
Compliance Assurance System (CAS)

- 1) A definition of the purpose of the system, its essential requirements and specification. This specification should cover compliance both within the company and within the supply chain
- 2) A formally defined process which implements the requirements of the system and is integrated within the organisation's quality and management systems
- 3) A technical documentation system (paper and/or electronic) to support the process and measures to assure conformity with the requirements of the system together with necessary training, tools and infrastructure.

Evidence of Active Control of the CAS

- 4) Results of internal and supplier audits to validate Compliance Assurance System and/or processes. i.e. the supplier's ability to assure compliance.
- 5) Evidence that the system is being followed including results of product specific conformance assessments comprising items such as product assessments (including justification of RoHS categorisation and use of exemptions), materials declarations, procurement, inventory and production controls and substance analysis where appropriate
- 6) Overview of any internal data system used for the management of RoHS compliance data

Figure 1 - Flow chart for RoHS Compliance Assessment Using Documentation



Route B	
Product/Part-based Technical Documentation	<i>(Typical information relating to a product's/part's physical attributes that ensures RoHS compliance of a specific product)</i>
7)	Producers' or suppliers' warranties /certificates declaring that the use of the restricted substances is within the permitted levels
8)	Producers' or suppliers' completed materials declaration for each part (including revision for revised parts) and justification of RoHS categorisation and use of exemptions. These declarations would be limited to the list of RoHS substances, not full materials declarations
9)	Analysis report for homogeneous materials in parts/components, (which could be the producers or suppliers own internal or external test results). The test results should refer to homogenous materials in parts/components.
10)	Those who use approach B only (SMEs) must also provide evidence that procedures are being followed to show that materials declarations have been assessed to determine if they can be trusted. Enforcement authorities will also need to see documented compliance procedures

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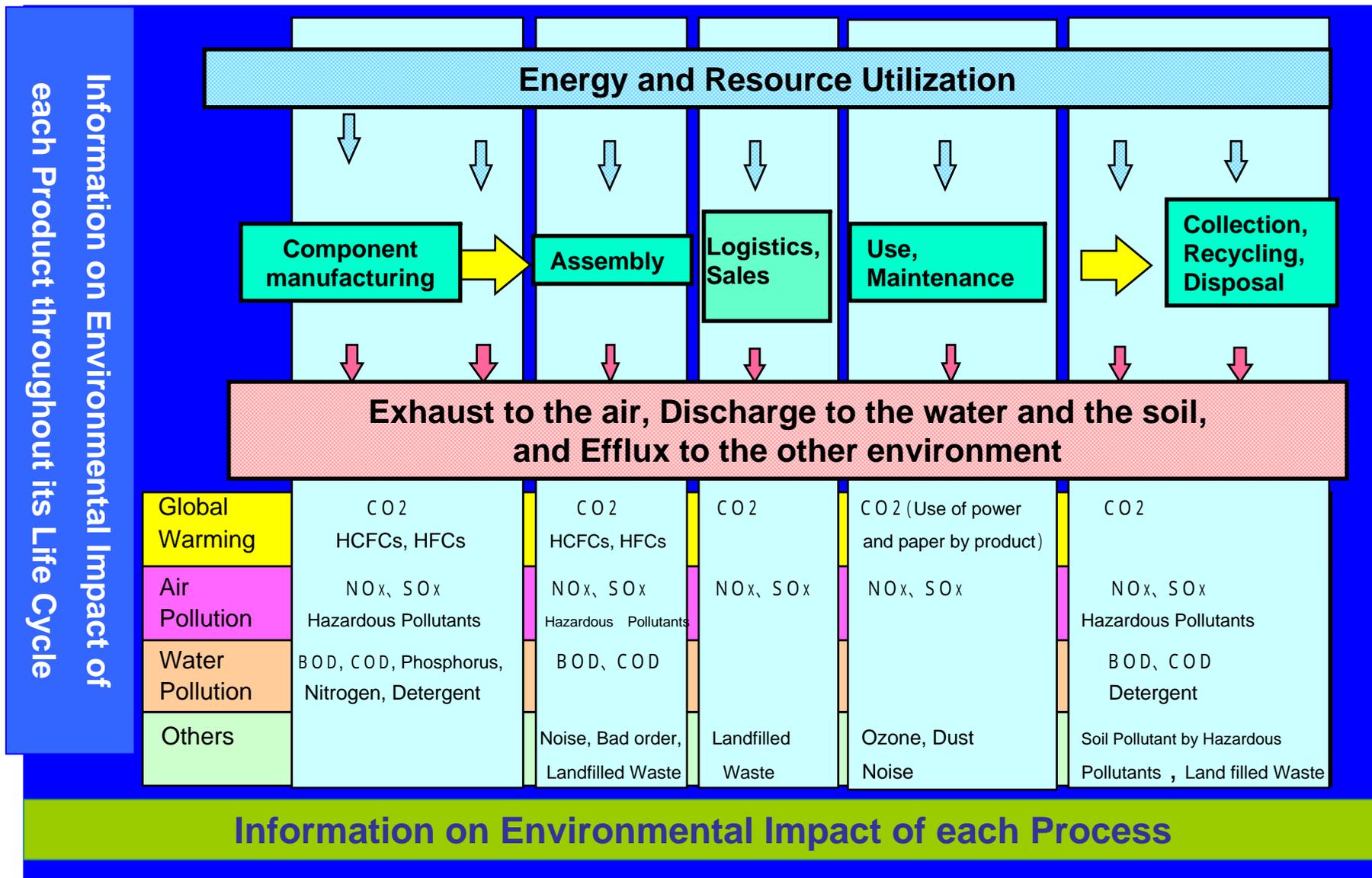
In general, a common trend in “**Environmentally Advanced Corporations**” in Japan is that **an awareness-raising promotion** that environmental conservation activities must steadily be performed in harmony with **every business process**, The base of this concept is “**Information Sharing**”.

Ricoh group also integrate information of “**Business Process**” and “**Environmental Activities**” with **IT technology** while pursuing a higher level of “**Environmental Management**” driven by a decision with a considerable amount of investment decided by senior corporate executives, which also provided an opportunity to spend a relatively longer time frame to establish “**Integrated Environmental Information System**” on a global basis.

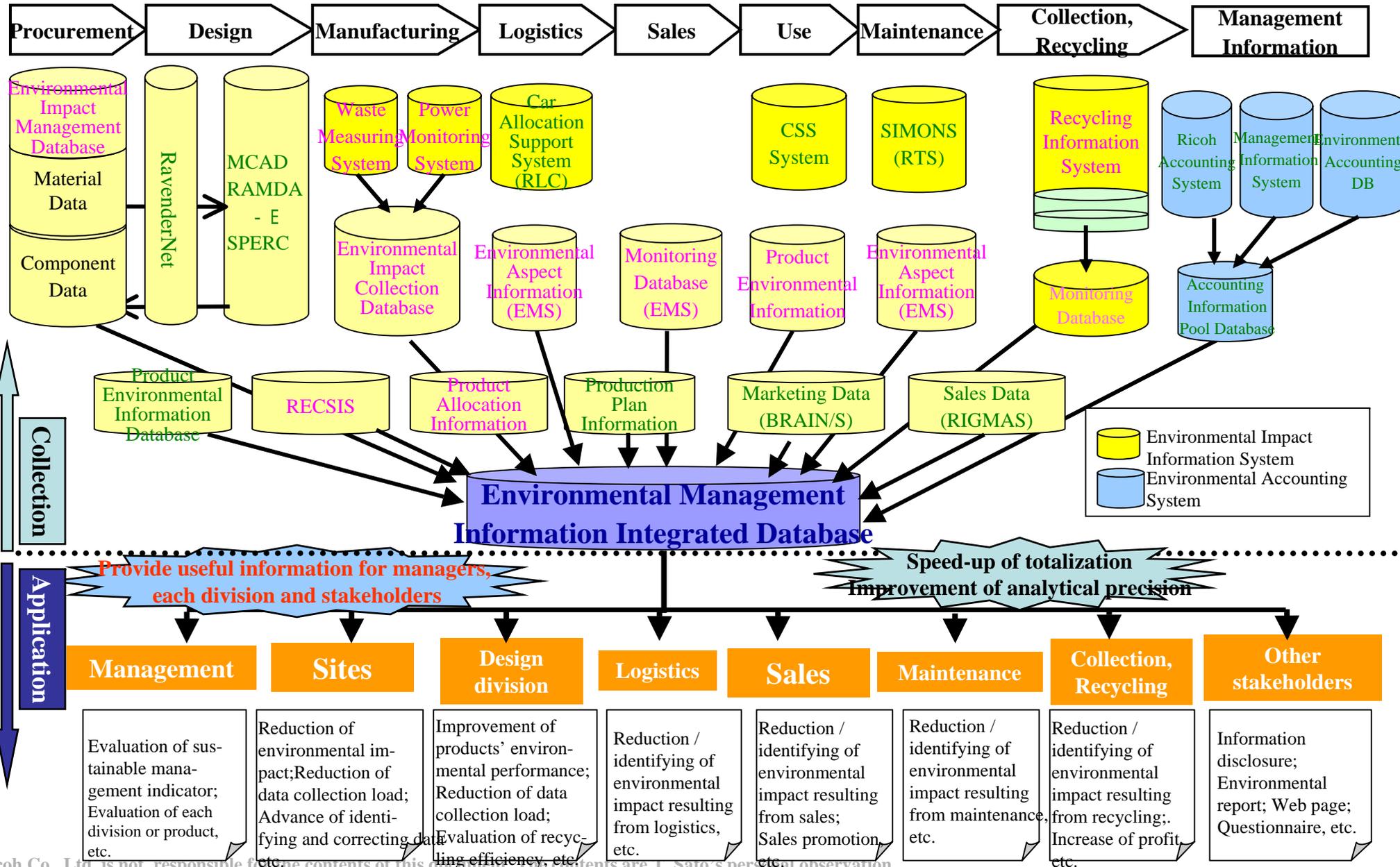
Some large corporations in Japan try to develop a similar information system like Ricoh and run their system so that they can grasp **all environmental impacts generated in the group companies**. But some companies keep focusing on the system only in the area of **chemical substance management** in factories and products.

Taking into account **EU EuP directive** and **REACH regulation** which will be enforced in the future in addition to the directives of **RoHS** and **WEEE** already enforced, numbers of manufactures are growing, who try to develop **a company-wide IT system including their supply chain** in which they can grasp **environmental impact generated in entire life cycle of products including chemical substances contained in products.**

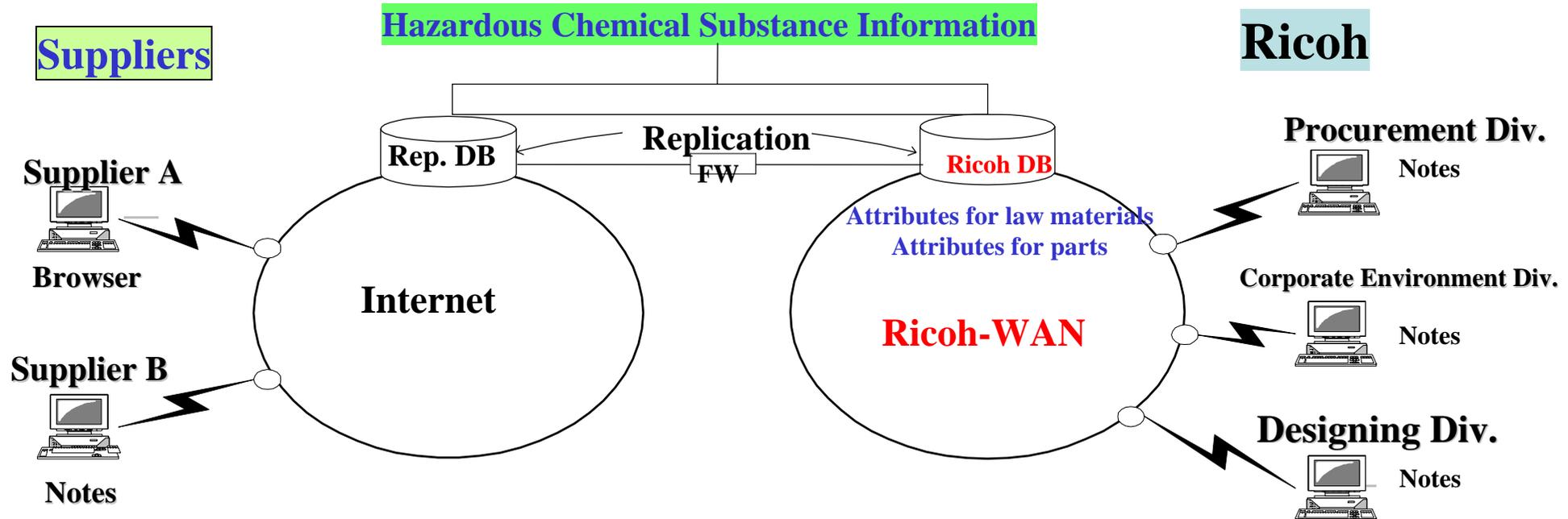
IT information system in harmony with the **existing environmental and quality management systems, e.g. ISO14001, ISO9001**, etc. are aiming to utilize obtained information for planning of corporate strategy including **environmental area** while trying to **minimize future corporate risk** caused by environmental problems.



Environment Management Information System

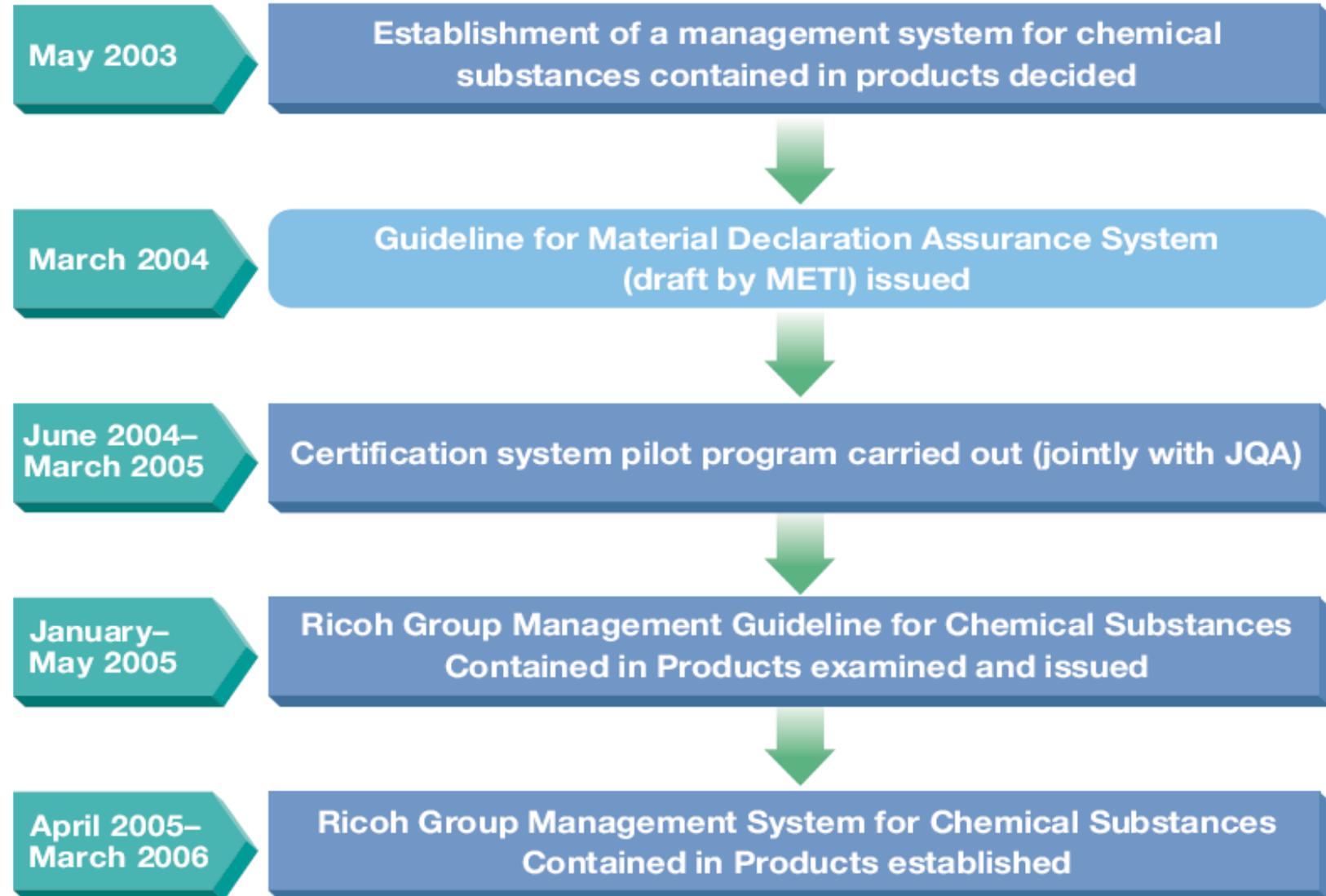


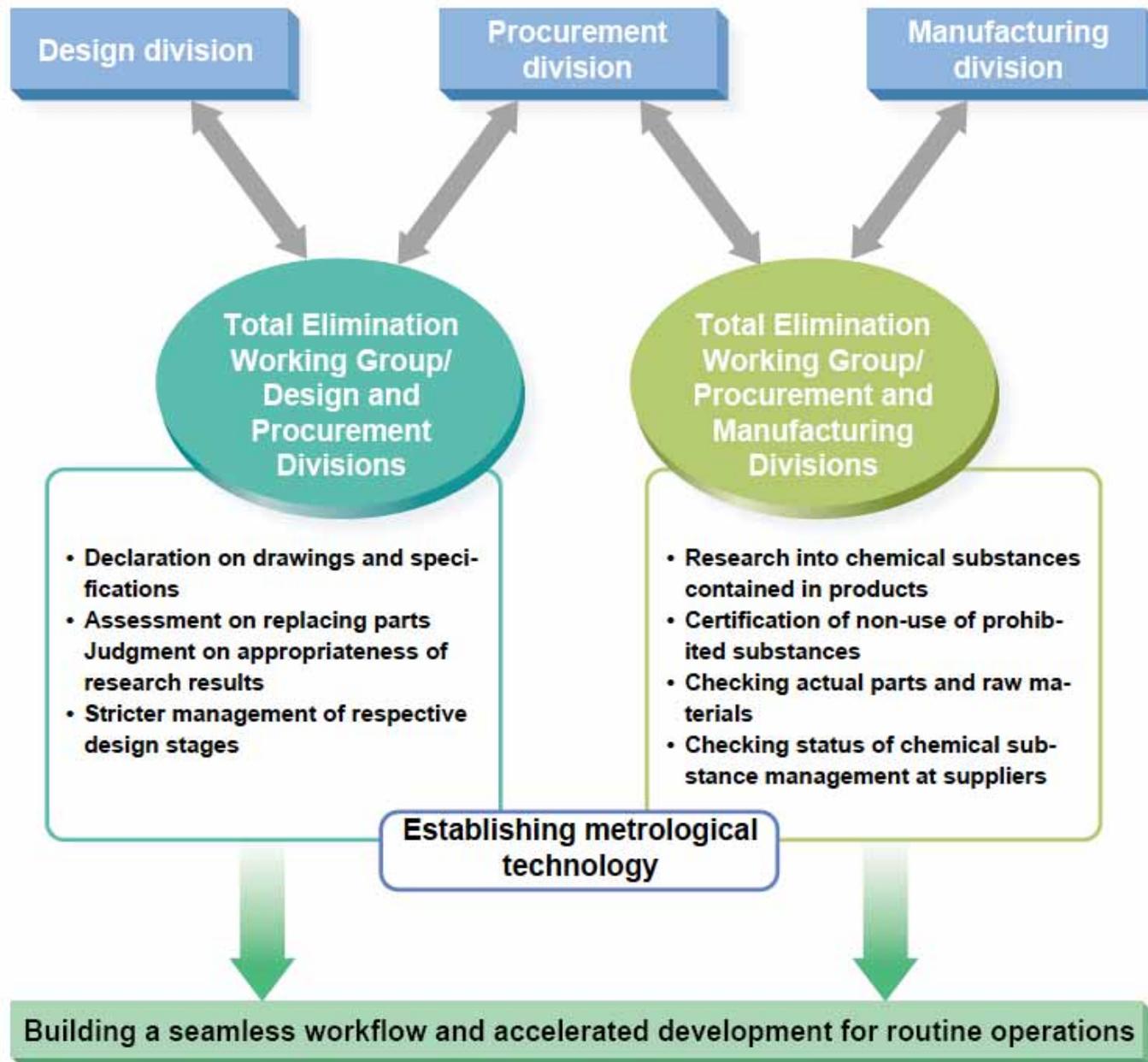
1. Utilizing internet linked with Ricoh group network system, Ricoh group can effectively grasp information of raw materials and hazardous chemical substances from Ricoh's suppliers.
2. Selecting most appropriate materials in view of environment and cost in the design process, using each system, thus enabling us to aggregate mass of materials and hazardous chemical substances with quantitative analysis by product.



History of establishment of “CMS” in products

CMS: Chemical Substances Management System





There are 66 substance groups controlled by Ricoh

16 substance groups prohibited by Ricoh

- Asbestos
- PCB
- PCN
- PCT
- Chlorinated paraffins
- HFCs, PFCs, SF₆
- Ozone-depleting substances

Designated as prohibited substances in 1993, with the exception of uses for specific purposes. These exceptions have been reviewed in response to the RoHS Directive.

- PVC

Four substances of which total elimination is a priority issue

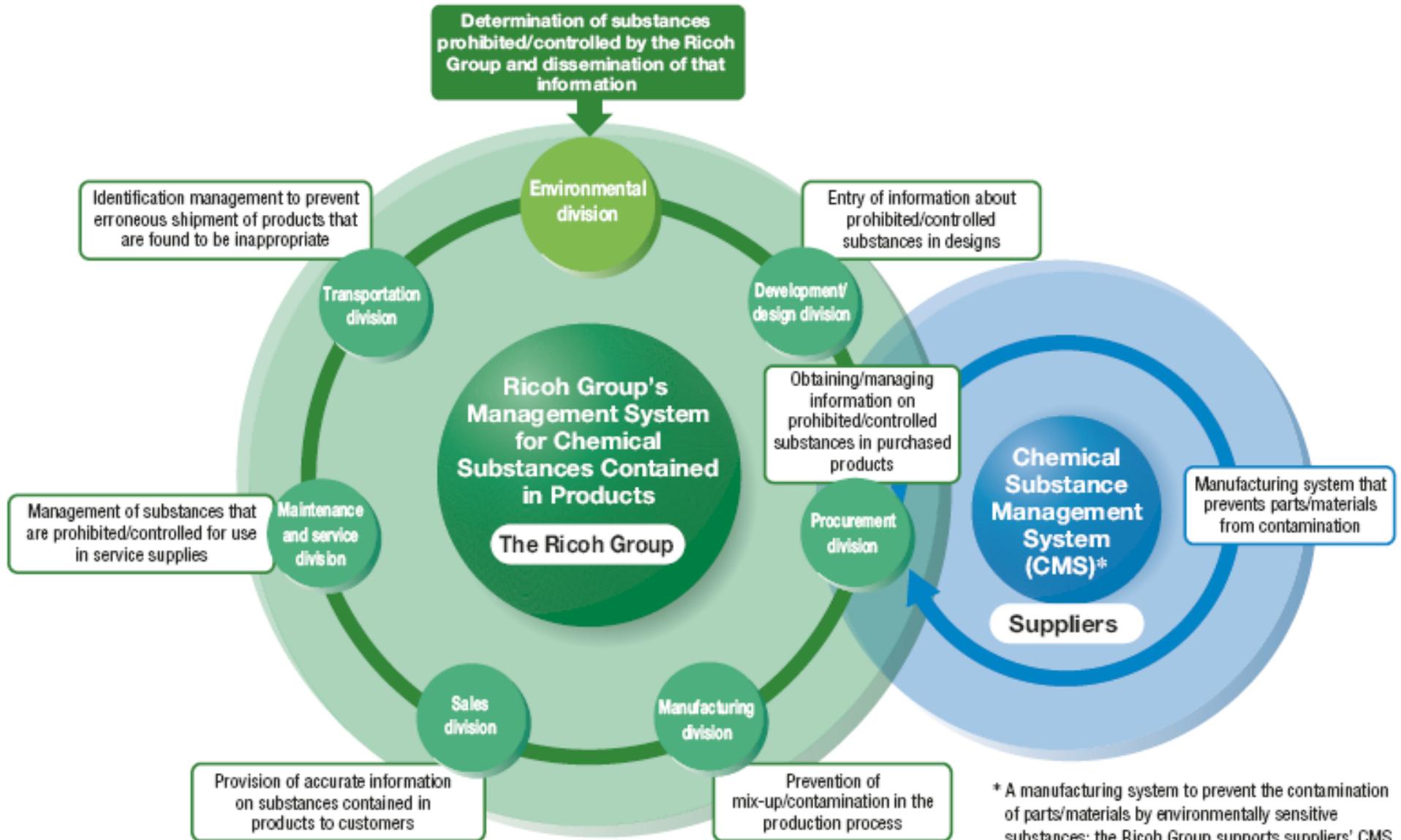
Substances regulated by the European RoHS Directive (six substance groups)

- Lead and its compounds
- Hexavalent chromium and its compounds
- Cadmium and its compounds
- Mercury and its compounds
- PBB
- PBDE

- TBTO
- TBT/TPT

RoHS Directive





* A manufacturing system to prevent the contamination of parts/materials by environmentally sensitive substances; the Ricoh Group supports suppliers' CMS by providing relevant information and verifies their CMS.

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1. Development of **company-wide management data base** with capability of network communication and retrieval for **regulations, standards, etc.**

1-1. Environmental regulations, standards, environmental labels, etc.

- (1) Environmental regulations including chemical substances
- (2) International standards (ISO, IEC, etc.)
- (3) National standards, Industry standards,
- (4) Environmental labels
- (5) Others

2. Development of **company-wide management data base** with capability of network communication and retrieval including **supply chain**

2-1 Chemical substances contained in **products**

- (1) Kinds of material consist of parts, part weight, chemical substances contained in parts
- (2) Preparation of company-wide procurement guideline for suppliers
- (3) Supporting educational program with manpower assistance for suppliers
- (4) Periodical monitoring and auditing scheme for suppliers

2-2 Chemical substances handled in **company-wide manufacturing sites, etc.**

- (1) Company-wide **in-out balance** of chemical substances
 - Volume/weight of procurement, used, transferred and discharged
 - Focusing on factories and laboratories
- (2) Educational program and maintenance scheme

3. Preparation for coming EU **REACH** regulation

(Indicative items which seem to be necessary including supply chain in general)

- 3-1 Company-wide survey for **products exported to EU**
- 3-2 Survey of chemical substances **contained in products** and their **intended release**
 - physicochemical information, - volume exported to EU, - purpose of use,
 - hazardous or not, - classification of EU hazardous nature
- 3-3 Names of chemical substances, classification of existing or new, company-wide **volume imported to EU**, purpose of use, etc.
- 3-4 Participation in **SIEF** (Substance Information Exchange Forum)
- 3-5 Selection of **only representative** and **third party representative if necessary**
- 3-6 Others

4. Promotion of substitution of **less hazardous** chemical substances

6. Research and development of material containing **non-hazardous substances**

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Note: Explanation after this pages is based upon a spot face to face hearing with RoHS enforcement authorities in Netherlands, Germany and United Kingdom conducted in November 2006. **Please do not consider that these information are still valid and final.**

Germany

Responsible areas

Basic approach of RoHS market surveillance

Handling of “RoHS Enforcement Guidance issued May 2006”

Manpower resource for surveillance of RoHS

Steps for market surveillance

Format for certification of conformance and submission due date

Consideration for “due diligence” by enforcement authority

Precision measurement agency

Power of custom office

Inspectorate of Ministry of Housing, Spatial Planning and the Environment (VROM) – Inspectorate South Unit

Netherlands

Responsible areas

Basic approach of RoHS market surveillance

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National Weights & Measures Laboratory [NWML]

United Kingdom

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Consideration for “due diligence” by enforcement authority

Agent for precision measurement

Power of custom office

Others

Thank you very much for your attention.