Approach Toward Seamless Information Transfer of Restricted Substances Through Whole Global Supply Chain

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JAMP: Joint Article Management Promotion

Formed in September, 2006

Chemicals Producers | **Raw Material Producers** | **Component Manufacturers** | **Final Product Fabricators**

MSDSplus

AIS (Article Information Sheet)

Publicly available (’08.7)

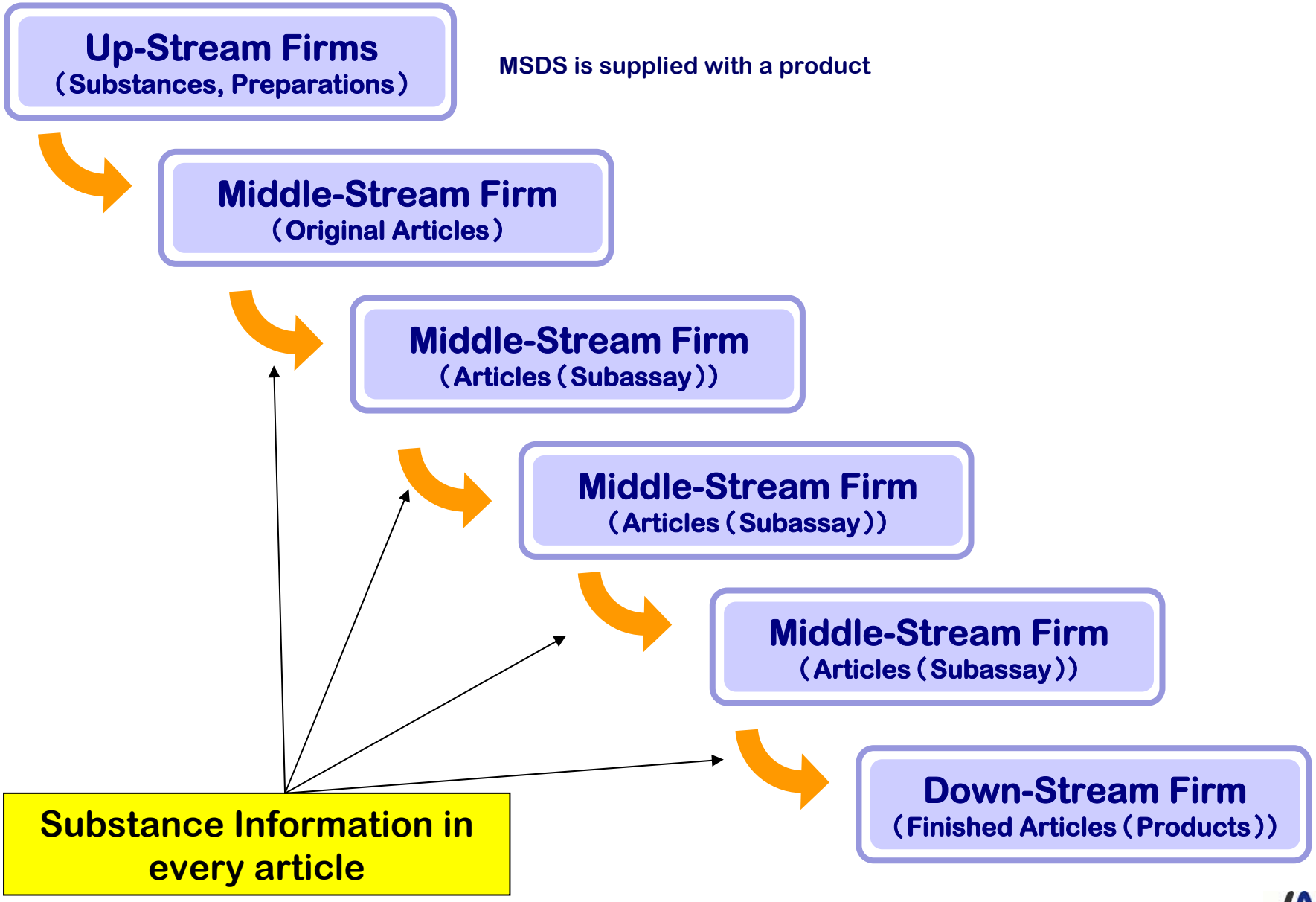
Customer format (e.g. IMDS)

JAMP intelligence information transfer infrastructure

(GP = JAMP Global Portal)

For Seamless Information Transfer through whole Supply Chain

Ideal Information Transfer of Substances



Real Information Transfer of Substances - 1

Up-Stream Firm
(Substances, Preparations)

MSDS is supplied with a product

Middle-Stream Firm
(Original Articles)

Middle-Stream Firm
(Articles (Subassay))

Information is not transferred

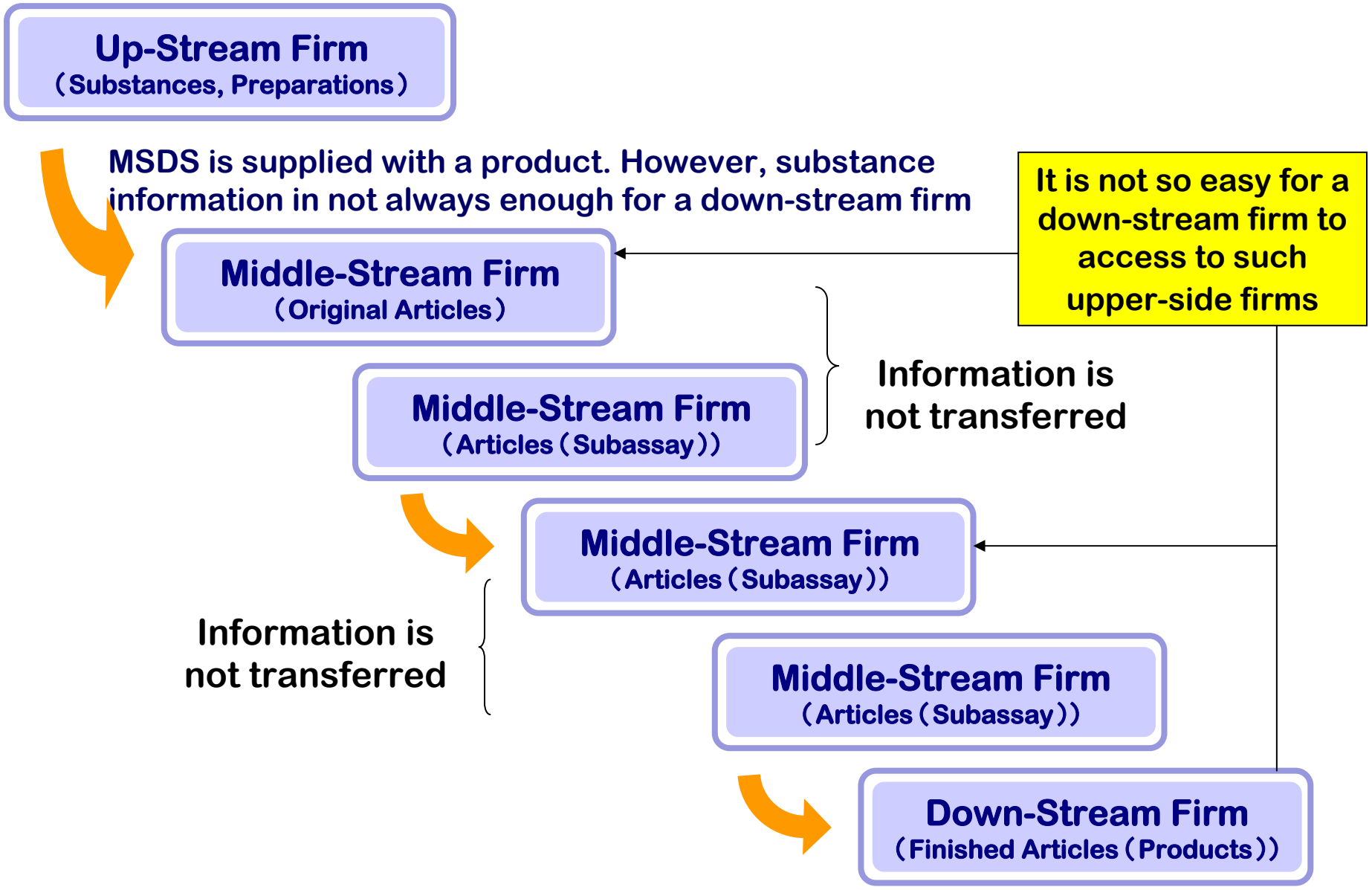
Middle-Stream Firm
(Articles (Subassay))

Information is not transferred

Middle-Stream Firm
(Articles (Subassay))

Down-Stream Firm
(Finished Articles (Products))

Real Information Transfer of Substances - 2



Actual Situation of Information Transfer of Substances through whole Supply Chain

Up-Stream Firms
(Substances, Preparations)

Middle-Stream Firms
(Original Articles)

Middle-Stream Firms
(Articles (Subassay))

Middle-Stream Firms
(Articles (Subassay))

Middle-Stream Firms
(Articles (Subassay))

Down-Stream Firms
(Finished Articles (Products))

Catenation of inquiries

Repeated responses

These reciprocation began with mandatory of EU RoHS.

Concerns

1. Means for information disclosure for substances or preparations contained in an article is not globally consistent.
2. There are many variations to transfer and disclose information on substances contained in an article. However, they are not ones which have been prepared under consideration for whole supply chain.
3. Supply chain is complicated（so many actors along the supply chain）
4. Workload
   - Big company: $ 6M / year
   - Mid Company: $ 2M / year
5. Amount of company numbers to contact directly: 5,000 - 10,000 / company
6. Amount of Information to be transferred: approx. 50,000 - 1,000,000 / year / company

What should JAMP do?

For information transfer of substances in an article through whole supply chain

- The scheme for transferring information of substances which can be used among cross-industries in accordance with the international legislation.

JAMP will propose a cross-industrial scheme to communicate substance information in an article to resolve such problems.

Basic Policy of JAMP

- Self declaration for appropriate management for restricted substances by every member company
- Appropriate transfer of substance information
- Good communication / relationship to jurisdictions and other organization internationally
- No intention to audit or inspect supply chain ---> as premise that every entity in supply chain follows JAMP framework and rules
- Minimum cost burden of member companies

Deliverables of JAMP

1. **Development and promotion of the "JAMP Guidelines for Information Management of Substances in an article"**
   - **"JAMP Guidelines" was jointly prepared with JGPSSI.**
2. Development and promotion of two formats for transfer of substance information
   - ①JAMP MSDSplus（Material Safety Data Sheet Plus）
   - ②JAMP AIS（Article Information Sheet）
3. Under development of IT infrastructure for prompt and appropriate transfer of substance information

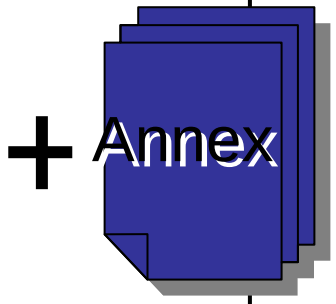
etc...

Outline of JAMP Guideline

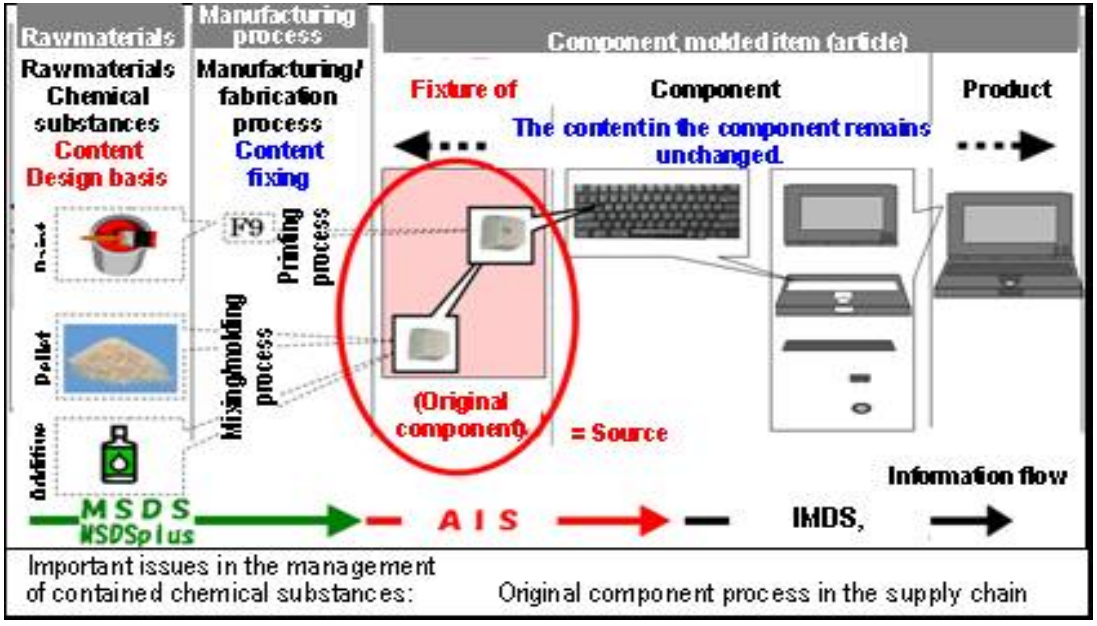
JAMP Guidelines for Information Management of Substances in an Article

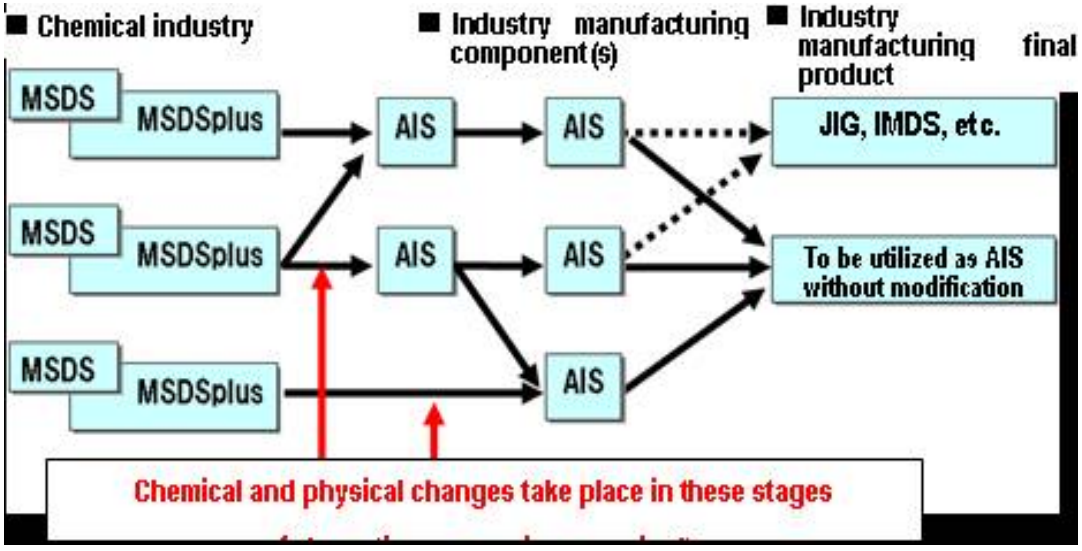
Guidelines

1. Background of the Management of Chemical Substances contained in the products
2. Objective of the JAMP Guidelines
3. Terms and Definitions
4. Concept of JAMP Guidelines
   - 4.1 Position of the JAMP Guidelines
   - 4.2 Principle of the Information Communication
   - 4.3 Principle of the Management of Chemical Substances
5. Basic Framework of the Management of Chemical Substance contained in the products
   - 5.1 Converting Process of Substances/Preparations to Articles
   - 5.2 7 Management Frameworks
   - 5.3 Management frameworks which considers the Management risks and the Identification of Important Management Points
6. Action Items
   - 6.1 List of Action Items
   - 6.2 Action Items of JAMP Guidelines
7. Operational Guides
   - 7.1 Objective of the Self-Declaration
   - 7.2 Responsibility of Self-Declaration
   - 7.3 Contents of Self-Declaration
   - 7.4 Disclosure of the Inspection Records



Why is Transfer of Information, which is not specified on SDS (MSDS), indispensable?





- Another infrastructure other than SDS (MSDS) is indispensable for appropriate information transfer through whole supply chain.

Outline of JAMP MSDSplus

1. Product Information

- Reference number of JAMP MSDSplus
- Information on the product（product name, product # etc.）

2. Issuance Information of JAMP MSDSplus

- Information of the issuing company of MSDSplus
- Contact information
- Data entry and revision date

3. Information of the chemical substances in the products

- Information on targeted chemical substances of laws regarding on the chemical substance management in Japan （3 laws）
- Information on targeted chemical substances of laws and regulations regarding on the chemical substance management in EU （4 laws and regulations）
- Substance name, CAS#, Content % of contained substances

Example for Japanese legislation

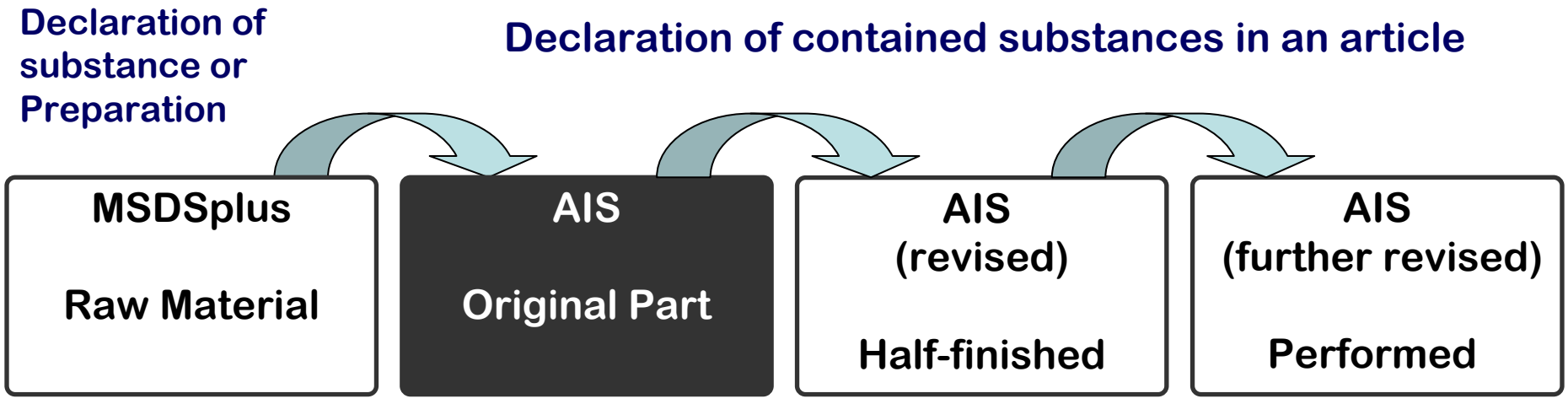
The safety information of chemical substances which are ordered to disclose in the Japanese domestic laws（PRTR law:435 chemical substance of Class 1 & 2 chemical substances）will be disclosed in existing MSDS.

JAMP MSDSplus will target the laws and regulations regarding on the chemical substance management which MSDS does not target.
（ex. poisonous and deleterious substances, production prohibited substances, etc.）

After release of SVHC list, necessary information should be specified for a certain substance in the column.

JAMP MSDSPlus and JAMP AIS

- Another infrastructure other than SDS (MSDS) is indispensable for appropriate information transfer through whole supply chain.
- What happens at the time when an SVHC is contained in an article?
  - Polymerization, Chemical change, Decomposition, Combination, Vaporization



Outline of JAMP AIS

JAMP AIS provides substance information in an article which is specified by REACH.

- An upper middle-stream firm to a lower middle-stream firm
- A middle-stream firm to down-stream a firm

1. Information on AIS

- Reference # of AIS, Data entry and revision data etc.

2. Manufacturer's information

- Manufacturer's name and contact information, Name of person responsible for AIS etc.

3. Article information

- Information of the targeted articles (parts name, parts # etc.)

4. Information of composition substances

- Information of parts (composition information, material information, weight etc.)
- Information of the reporting substances of the targeted laws and regulations (substance name, CAS#, content % (wt%) etc.)

5. Other information

- Information on content density (wt%) of specific substances (automatically prepared by software tool)
- Information which should be transferred (automatically prepared by software tool)
- reference information, restriction information etc.

JAMP AIS and JIG

- JIG has been developed prior to JAMP AIS.
- JIG is currently used more than JAMP AIS in downstream of electronics industries, especially.
- A tool to enable data exchange between JAMP AIS and JIG is under planning for the development.

JAMP Information Transfer Infrastructure (Global Portal)

What is JAMP Information Transmission Infrastructure?

JAMP aims to build the comprehensive chemical substance information infrastructure which can transfer the chemical substance information from Upper stream companies to Down stream companies to cope with the chemical regulations like REACH. JAMP aims at business efficiency improvement by the operation process unification beyond the frame between each companies.

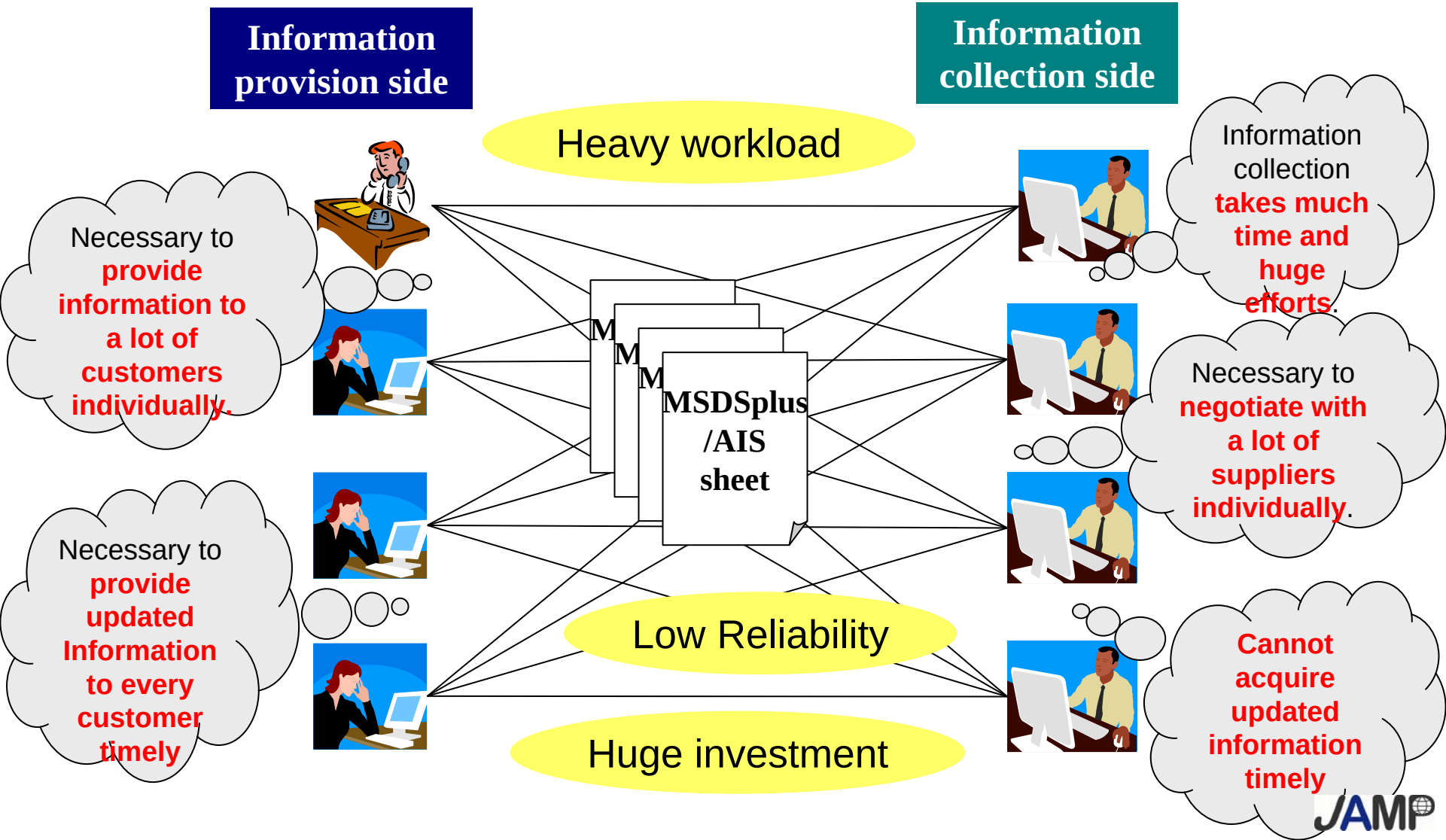
Management Guideline
⇨ Road Traffic Act

AIS/MSDSplus
⇨ Car

Information transfer infrastructure
⇨ Road (High-way)

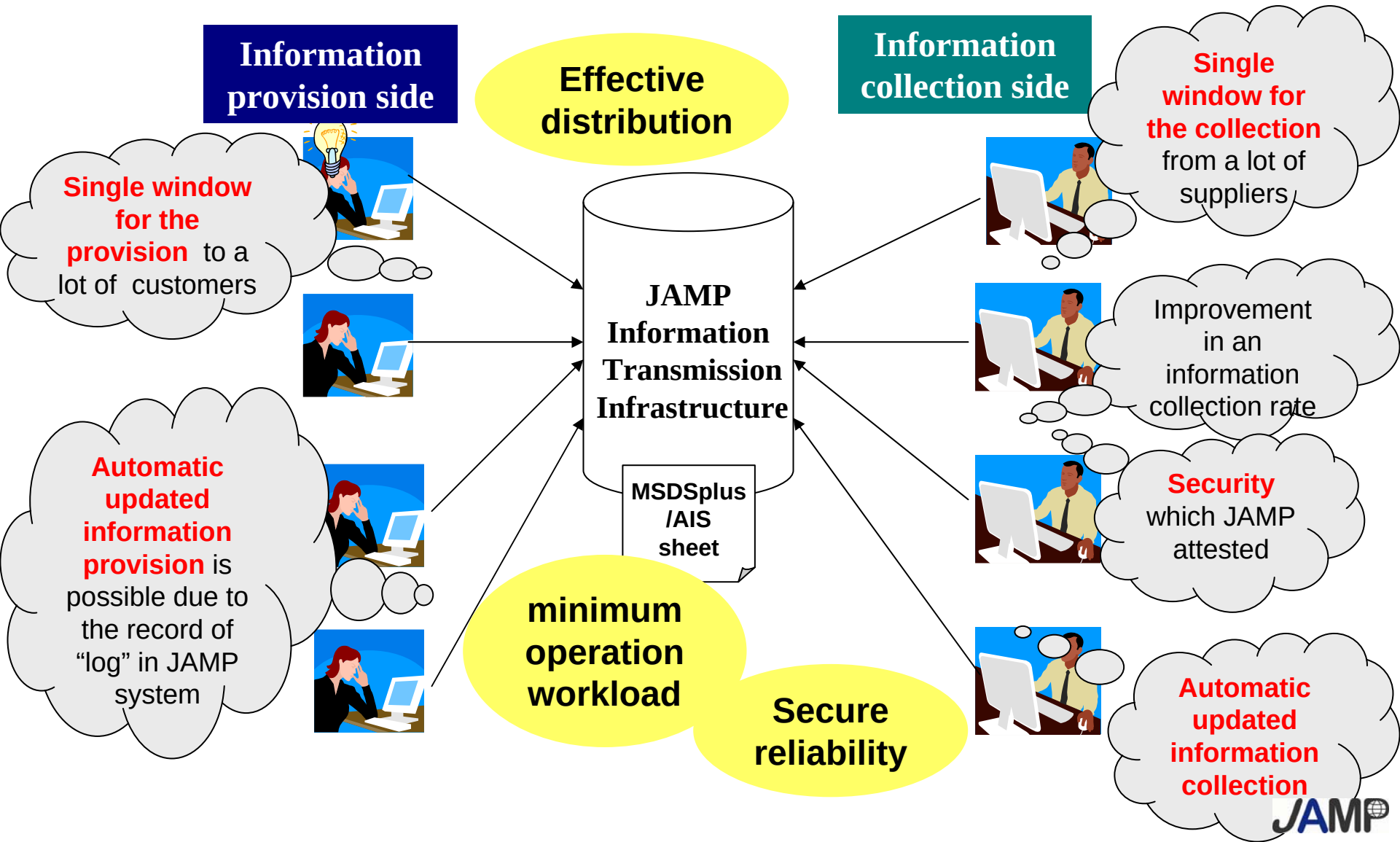
Problems of current information exchange scheme

There is no Information Transfer Infrastructure so far,…….



Necessity of new Information Infrastructure

If an consolidated Information Transfer Infrastructure will be built……..



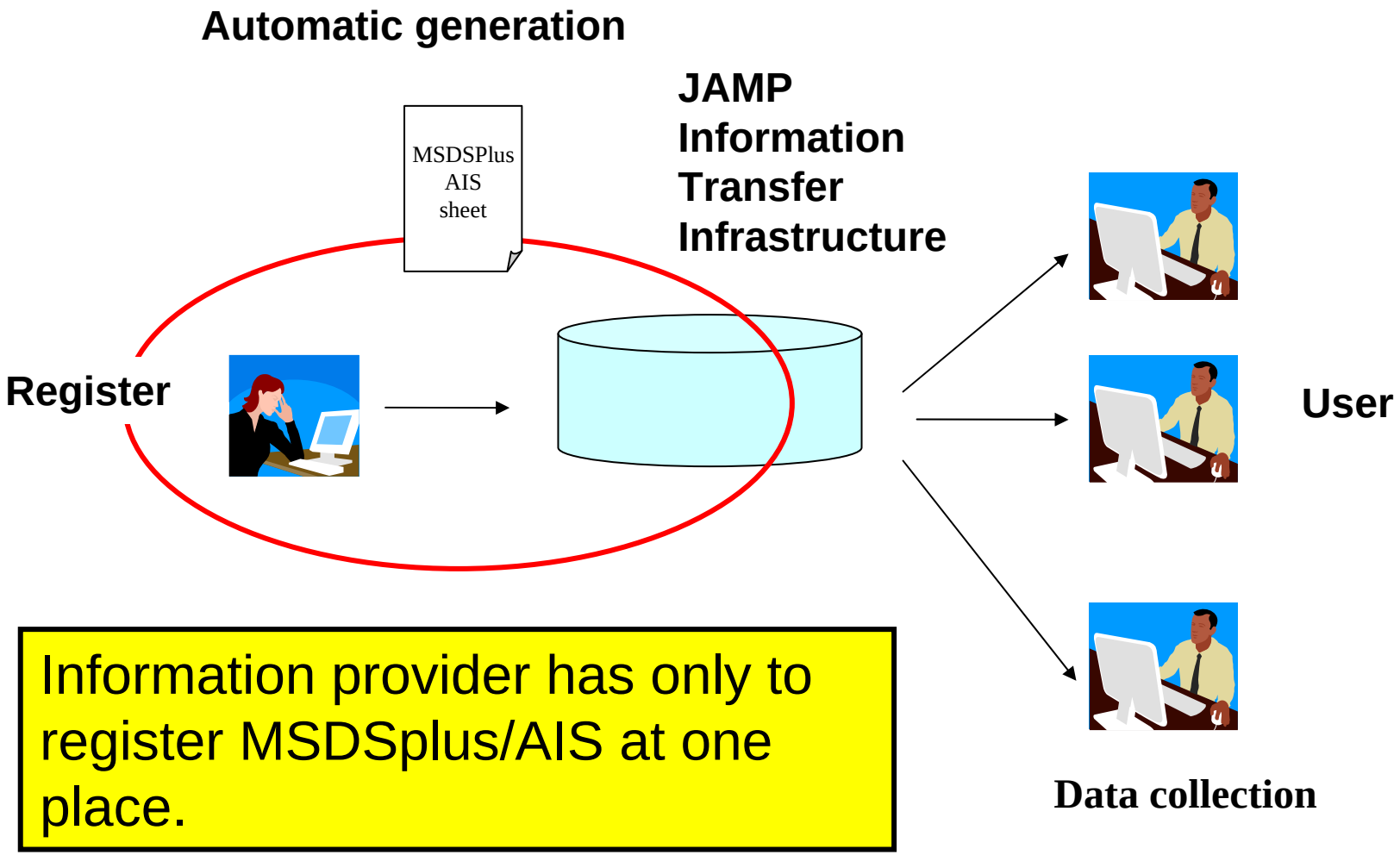
Purpose of JAMP Information Transfer Infrastructure

Transfer chemical substance information contained in an article without breaking them off in all supply chain.

Basically, the transfer must be done toward the down stream companies from the upper stream companies.

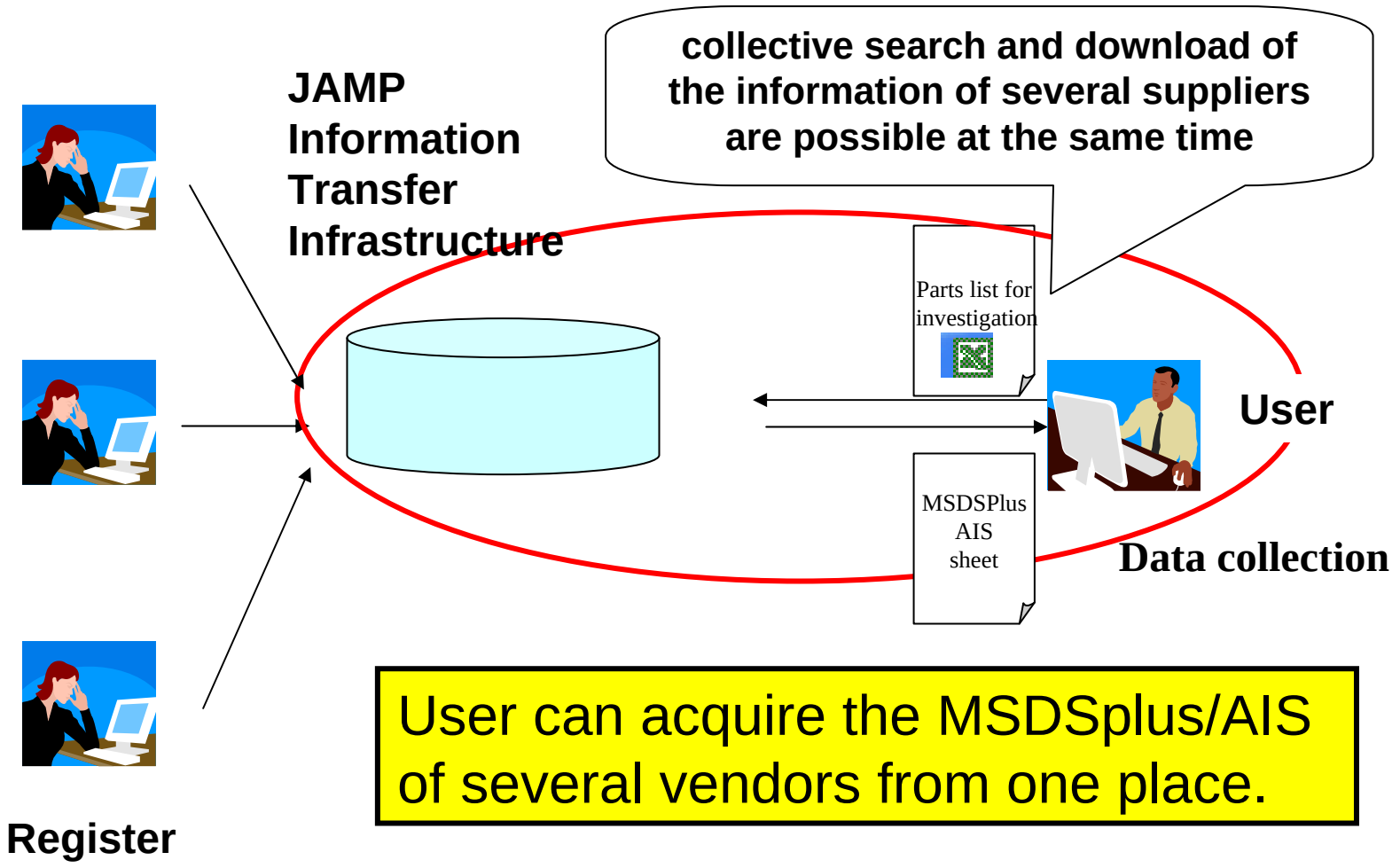
- ✓ Reduce information transfer workload through supply chain
- ✓ Provide common place of information exchange easily
- ✓ Manage the latest information

Benefit for the information provider



Information provider has only to register MSDSplus/AIS at one place.

Benefit for the information user



User can acquire the MSDSplus/AIS of several vendors from one place.

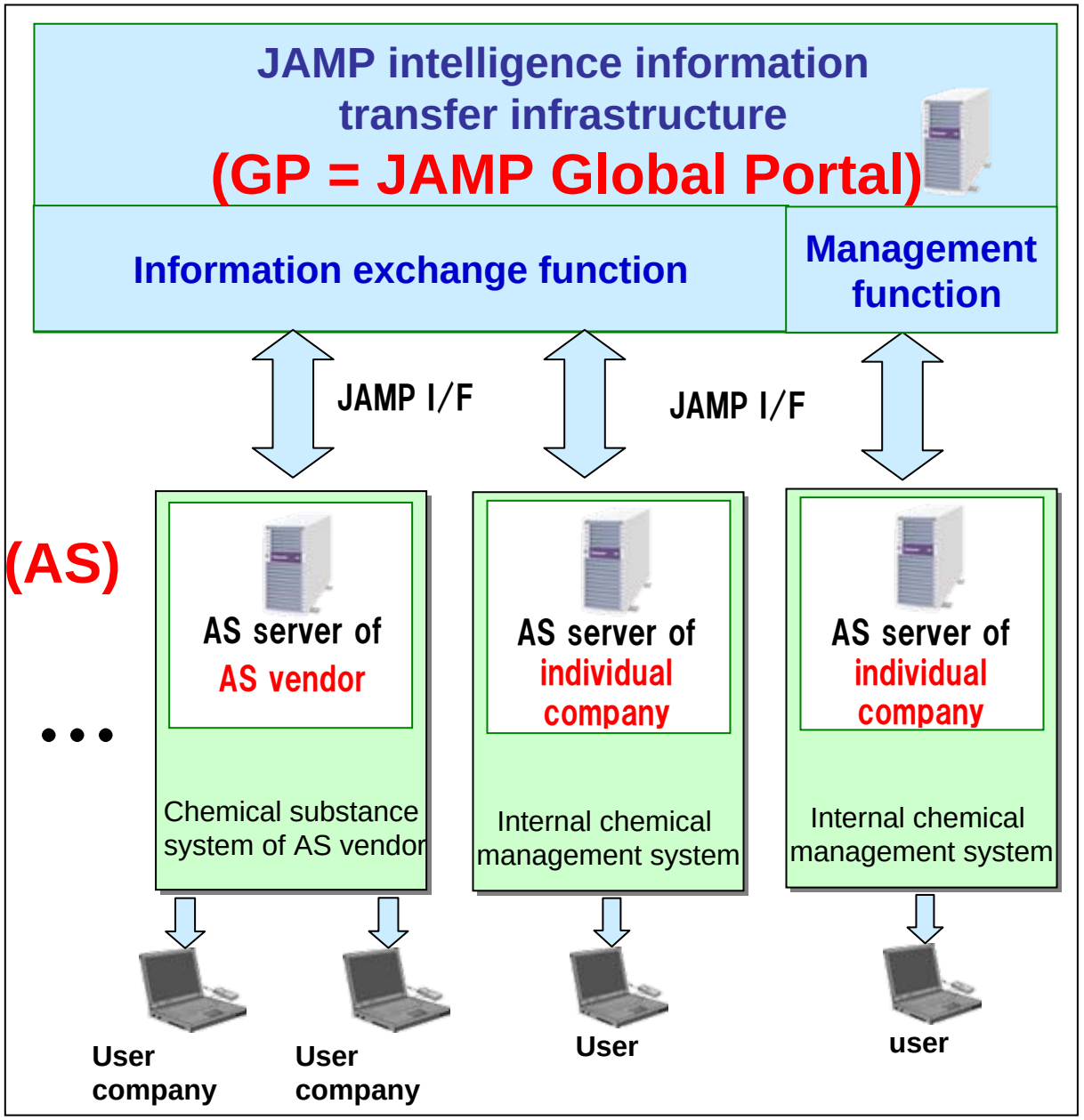
Basic operation of data exchange

Demand and acquire of MSDSplus/AIS through AS servers by using the following functions,

1. Registration of MSDSplus/AIS (Release)
   - **Register sheets ,add “GP sheet ID” and control them as filing list**
2. Search MSDSplus/AIS (Look)
   - **Search registered MSDSplus/AIS by “ company ID + Product ID”**
3. Acquire MSDSplus/AIS (Get)
   - Acquire certified MSDSplus/AIS and record the exchanged log
4. Demands MSDSplus/AIS (Want)
   - Demand the non-registered MSDSplus/AIS
5. Notification of change MSDSplus/AIS (Changed)
   - Notify the change information to users

Function of Global Portal (GP) and Application Service (AS)

Outline of the JAMP "Information Transfer Infrastructure" (GP/AS)



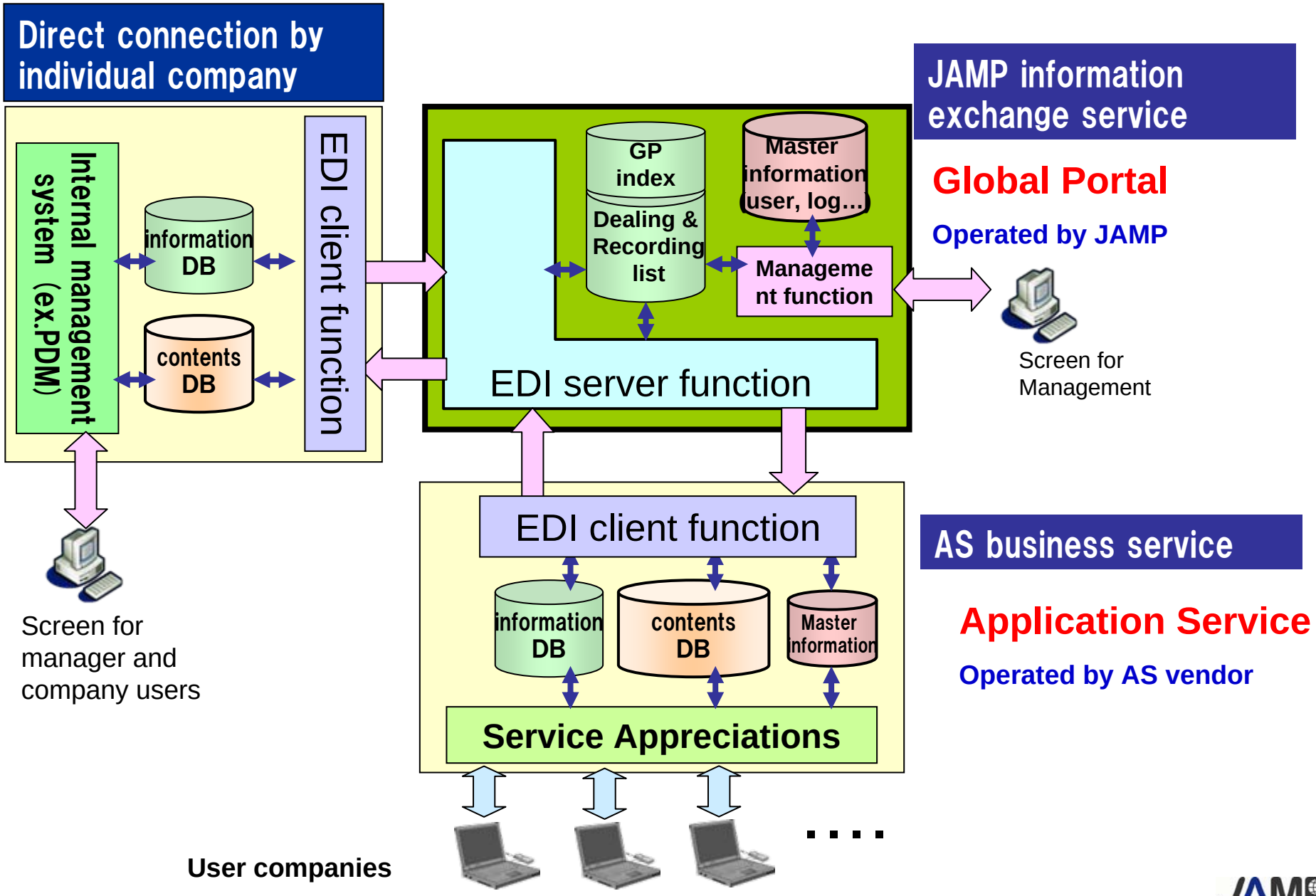
GP (Global Portal):

- The main function of GP is "information exchange" managed unitarily like a switchboard.
- Minimum function

AS (Application Service)

- AS is an "user interface".
- AS has "database" functions to store MSDSplus/AIS files which a screen function user operates directly.
- It can support the different demands of users of every type of companies.
- There are two types of AS,
  1. AS of several service vendors
  2. AS in individual company

Interface of Global Portal (GP) / Application Service (AS)



Main functions of Global Portal (GP)

1. Management function

- Register user company, Management of ID
- Certification and its data management
- Issue and control of JAMP sheet ID for MSDSplus/AIS
- Access log control
- Data management for “charging”

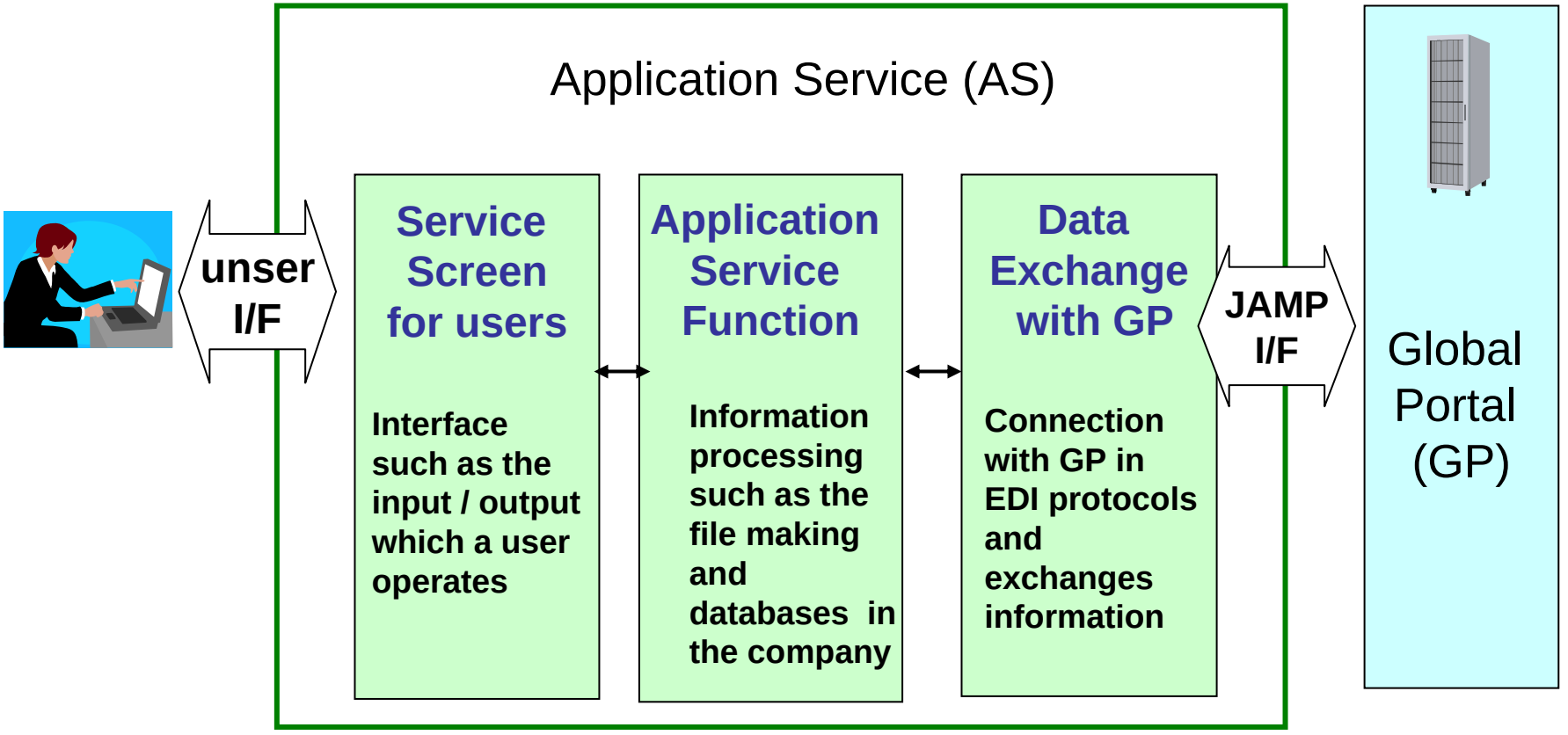
2. Data exchange function

- EDI communication interface
- Index control of registered sheets (files)
- Management of information exchange processing list
- User information management (open to specified user or open to public user for each sheet)
- Register, search, acquire, require, change, eliminate of data
- Store & maintenance of access record, version control of data
- etc

Main roles of Application Service (AS)

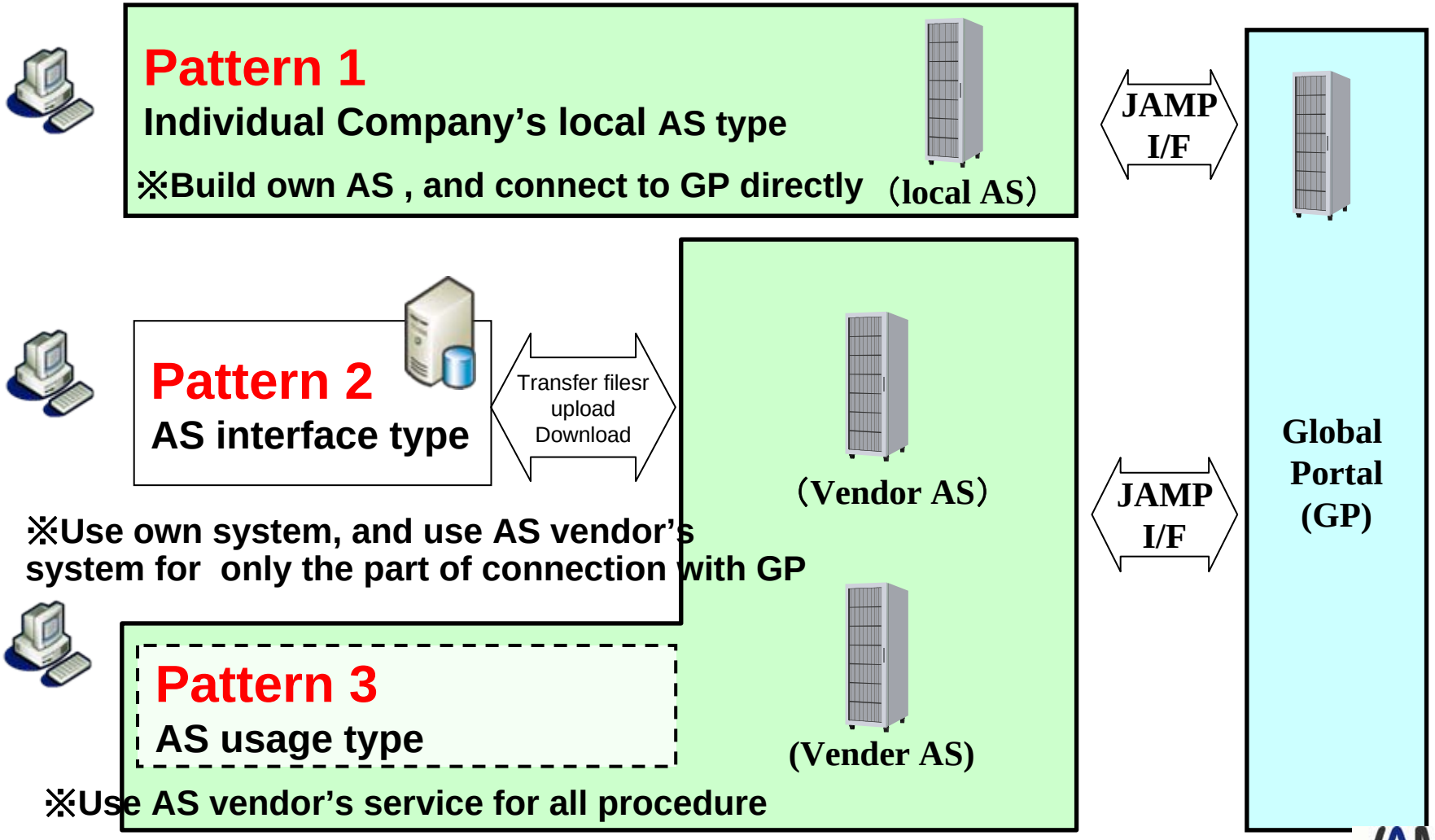
There are <u>three roles</u> in an AS function.

Various functions are to be added in consideration with conditions such as the contents of the existing data of each company or harmonization with the existing internal operation system.

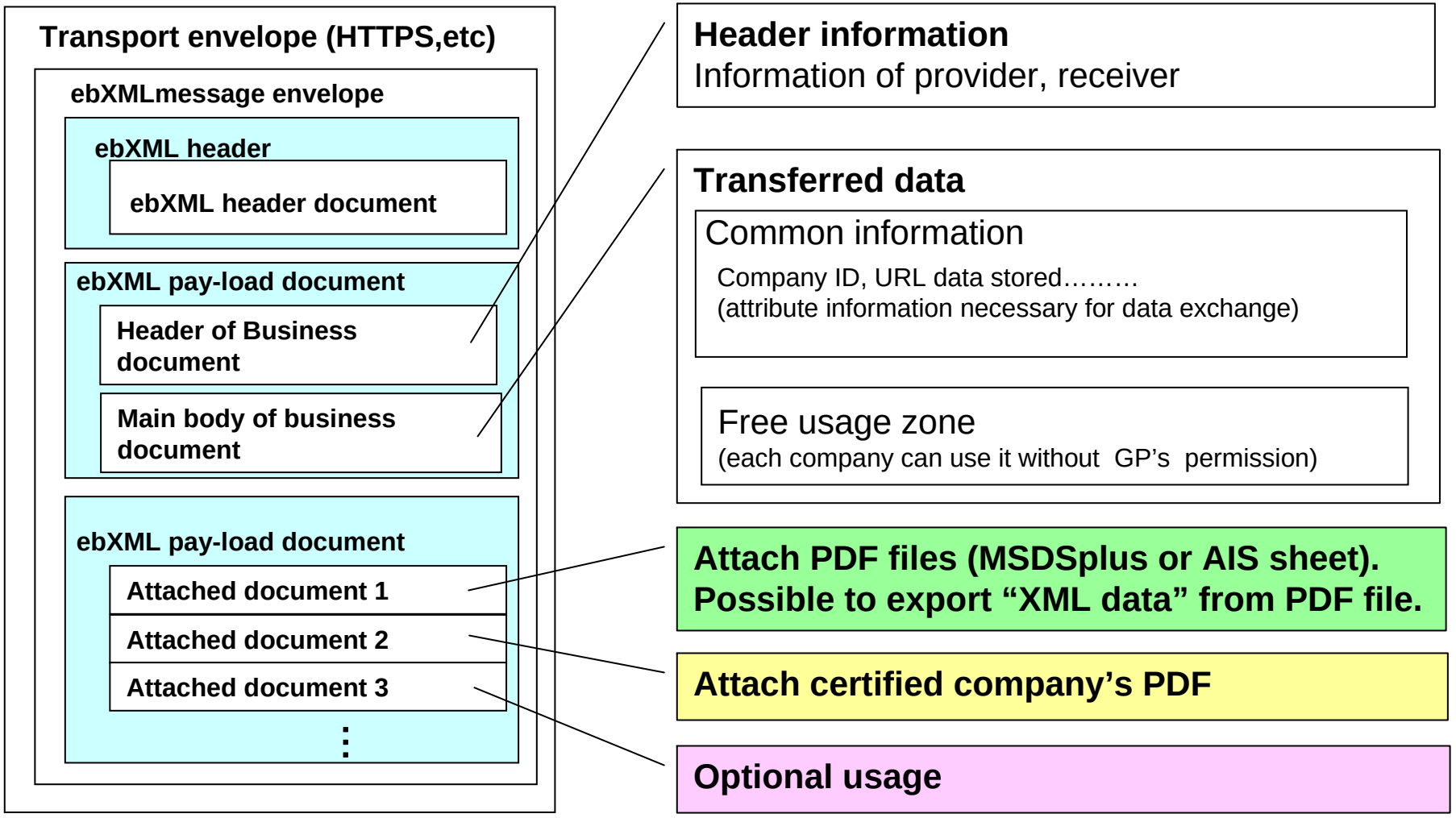


How to use AS?

Depending on the situation of the company, there is three kinds of usage pattern of AS.



Data structure plan for the transfer of MSDSplus/AIS



Message from JAMP

- Consideration toward release of REACH SVHC candidate list
  - It may be difficult for JAMP to prepare all the framework for REACH compliance in time.
  - Each company executes tasks for REACH compliance, even though heavy workloads are still necessary for them.
  - However, improvement of JAMP framework to reduce workloads is expected by many companies, even though, no matter how long it takes.
- We will prepare well-sophisticated framework.
  - For the purpose, we desire to build good relationship up to global organizations.
  - Because we seldom know your expectation what we should do for REACH compliance.
- We at JAMP would like to communicate with global people continually. We will inform you our activities with timely manner.

Membership of JAMP

235 Affiliates & 10 Associations (as of May 20th, 2008)

IHI Corporation
IRIE SYSTEM Co., Inc.
ADVANTEST CORPORATION
Asahi Kasei Corporation
Asahi Kasei EMD Corporation
Asahi Glass Co., Ltd.
ADEKA CORPORATION
Adobe Systems Incorporated
Advanced Peripherals Technologies, Inc.
ALPS ELECTRIC CO., LTD.
Environmental Resources Management Japan Ltd.
E&E Solutions Inc.
Expert for Management Solution Japan Co., Ltd.
EDS Japan LLC.
IBIDEN CO., LTD.
eBASE CO., LTD
Inabata & Co., Ltd.
SMK Co., Ltd.
SGS Japan Inc.
FDK CORPORATION
NEC Soft, Ltd.
NTT Communications Corporation
NTT DATA Corporation
LG Electronics Inc.
ELNA CO., LTD
Vinyl Environmental Council
Oki Electric Industry Co., Ltd.
OKUNO CHEMICAL INDUSTRIES CO., LTD
Onamba Co.,Ltd.
OMRON Corporation
ORIENTAL MOTOR Co., Ltd.
Olympus Corporation
Kao COPORATION.
Chemicals Evaluation and Research Institute, Japan.
CASIO COMPUTER CO.,LTD
Kaneka Corporation
Glass Fiber Association
Kawasaki Microelectronics, Inc.
ENVIRONMENTAL CONTROL CENTER CO.,LTD.
Environmental Information Communications Co., Ltd.
KIMOTO CO., LTD.
CATEYE Co.,Ltd.
Canon Inc.
KYOCERA Corporation
KYOCERA MITA CORPORATION
Kyoto Denkiki Co., Ltd.
KYOWA HAKKO Co., Ltd.
Kyokuto Electric Co., Ltd.
Kubota Corporation
KURARAY CO., LTD
Kurita Analysis Services Co., Ltd.
GLORY LTD.
Kenwood Corporation
COSMOS CORPORATION
COSEL CO., LTD.
KONICA MINOLTA HOLDINGS, INC.
SATO CORPORATION
Saint-Gobain K.K.
SAMSUNG ELECTRONICS CO., LTD
Sunhayato Corp.
SANYO Electric Co., Ltd.
JFE MINERAL COMPANY, LTD
CITIZEN WATCH CO.,LTD.
Citizen Holdings Co., Ltd.
SHIMADZU CORPORATION
SHIMANO, INC.
Shachihata Inc.
Sharp Corporation
JAPAN ENERGY CORPORATION
BSEF Japan
SWCC SHOWA HOLDINGS CO.,LTD.
Showa Denko K.K
SHIN-NAKAMURA CHEMICAL CO.,LTD
STAR MICRONICS CO., LTD.
Sumika Bayer Urethane Co., Ltd.
Sumika Chemical Analysis Service, Ltd.
Sumitomo Chemical Co., Ltd
Sumitomo 3M Limited
Sumitomo Electric Industries, Ltd.
Seiko Instruments Inc.
SEIKO EPSON COPORATION
GENARAL TECHNOLOGY Co., Ltd.
Sony Corporation
Sony Ericsson Mobile Communications Japan, Inc.
DIKYO CHEMICAL CO., LTD.
Daikin Industries, Ltd.
DAINIPPON INK AND CHEMICALS, INCORPORATED
Dai Nippon Printing Co., Ltd.
DAINIPPON SCREEN MFG. CO., LTD.
DAIHACHI CHEMICAL INDUSTRY CO., LTD.
TAIYO, LTD.
TAIYO YUDEN Co., Ltd.
Dow Chemical Japan Ltd.
TATSUNO Corporation
Tabuchi Electric Co., Ltd.
TAMURA Corporation
Chienet LLP
TDK Corporation
TEIJIN LIMITED
TEIJIN CHEMICALS LTD.
DISCO Corporation
DIMS Institute of Medical Science, Inc.
Det Norske Veritas AS
TÜV SÜD Japan Ltd.
DENKI KAGAKU KOGYO KABUSHIKI KAISHA
DENSAN CO., LTD
JEITA EC Center
TOEI CORPORATION
Tokyo Electron Limited
TOKYO ELECTRON AT LIMITED
Tokyo Electron Kyushu Limited

Membership of JAMP

Tokyo Electron TS Limited
Tokyo Electron Tohoku Limited
TOKYO OHKA KOGYO CO., LTD.
TOSHIBA Corporation
TOHIBA TEC CORPORATION
TOSOH CORPORATION
TOHOKU RICOH CO., LTD.
TORAY INDUSTRIES, INC.
TOKUSHU DENSO CO., LTD
TODA KOGYO CORP.
TOPPAN PRINTING CO., LTD.
Tomiyama Pure Chemical Industries, Ltd
Du Pont Kabushiki Kaisha
Toyota Tsusho Corporation
TOPCON CORPORATION
Naitoh Environmental Science Co., Ltd.
Nagase & Co., Ltd.
EIZO NANAO CORPORATION
NIKON CORPORATION
NICHICON CORPORATION
NICCA CHEMICAL CO., LTD.
NICHIBAN CO., LTD.
NITTO DENKO COPORATION
Oracle Corporation Japan
NGK INSULATORS, LTD.
NIPPON CHEMICAL INDUSTRIAL Co., LTD.
The Japan Gas Association
Nihon Environmental Services Co., Ltd.
Japan Chemical Database Ltd.
Nippon Chemi-Con Corporation
Japan Aviation Electronics Industry, Limited
Japan Automobile Manufacturers Association, Inc.
ZEON CORPORATION
The Japan Iron and Steel Federation
NEC Corporation
The Japan Electrical Manufacturers' Association
NEC Factory Engineering, Ltd.

JEOL Ltd.
Nihon Parkerizing Co., Ltd
Victor Company of Japan, Limited
JAPAN QUALITY ASSURANCE ORGANIZATION
The Japan Plastics Industry Federation
Japan Radio Co., Ltd.
Nippon Yusoki CO., LTD
Nihon Unisys, Ltd.
PIONEER CORPORATION
Powdertech Corporation
Hasama Ricoh Inc.
Panasonic Electronic Devices Co., Ltd.
Panasonic Communications Co., Ltd.
Panasonic Mobile Communications Co., Ltd.
Hitachi-Omron Terminal Solutions, Corp.
Hitachi Chemical Company, Ltd.
Hitachi Communication Technologies, Ltd.
Hitachi, Ltd.
Hitachi Cable, Ltd.
Hitachi Media Electronics Co., Ltd.
Bureau VeritasJapan Co., Ltd
HIROSE ELECTRIC CO., LTD
Fujikura Ltd.
Fujikura Kasei Co., Ltd.
Fuji Xerox Co., Ltd.
FUJITSU LIMITED
FUJITSU NAGANO SYSTEMS ENGINEERING LIMITED
Fuji Electric Holdings Co., Ltd
FUJINON CORPORATION
FUJIFILM Corporation
FUNAI ELECTRIC CO., LTD.
BROTHER INDUSTRIES, LTD.
HORIBA, Ltd.
Furukawa Electric Co., Ltd
Protiviti Japan Co., Ltd.
Microsoft Corporation
The JAPAN REFRIGERATION AND AIR CONDITIONING INDUSTRY ASSOSIATION

MARKEM Corporation
Matsushita Electric Industrial Co., Ltd.
Matsushita Electric Works, Ltd.
Matsushita Battery Industrial Co.,Ltd.
Mizuho Information & Research Institute, Inc.
Mitsui Chemicals, Inc.
Mitsubishi Chemical Corporation
MITSUBISHI GAS CHEMICAL COMPANY, INC.
MITSUBISHI HEAVY INDUSTRIES,LTD.
Mitsubishi Electric Corporation
MITSUBISHI RAYON CO., LTD.
MITSUMI ELECTRIC CO., LTD.
MIMAKI ENGINEERING CO., LTD.
Murata Machinery, Ltd.
Murata Manufacturing Company, Ltd.
YAZAKI CORPORATION
YASKAWA Electric Corporation
Yamashita Electric Co., Ltd
Yamatake Corporation
YANMAR Co., Ltd.
YUSHIRO CHEMICAL INDUSTRY CO.,LTD.
UNIMATEC CO., LTD.
The Yokohama Rubber Company, Limited
Lion Corporation
RIKEN TECHNOS CORP.
Ricoh Co., Ltd.
RICOH OPTICAL INDUSTRIES CO., LTD.
Ricoh Printing Systems, Ltd.
RISO KAGAKU CORPORATION
LINTEC Corporation
ROKI TECHNO CO., LTD
ROHM CO., LTD.
Roland DG Corporation
TKK Corporation
Wacom Co., Ltd.

Up-stream	45	Middle-stream	82	Down-stream	62	Others	56

Thank you for your Cooperation!!