Study Group on the Improvement of Product Traceability

Interim Report

April 2003

Ministry of Economy, Trade and Industry, Japan

Contents

1.0 Background

1.1 Past Efforts on Product Traceability

Various attempts have been made in the past to improve product traceability using automatic identification technology. Such efforts range from product life cycle control, automation of transaction and settlement management, improved logistic efficiency, and rationalization of manufacturing production control.

However, conventional product traceability methods have been primarily limited to one-dimensional linear bar codes having minimal data capacity. Such methods have worked well for the retail markers price-file look-up applications in point of sale (POS).

Product traceability needs historically have been addressed by industry through the labeling and management of different bar codes in the manufacturing, transportation, and distribution stages according to the unique policies of the manufacturer, the unique policies of the transporter, and the unique policies of the customers.

The following are examples of some relatively detailed traceability efforts.

1.1.1 Food

In certain local governments livestock identification numbers are conveyed to consumers using slips. Production information can be obtained from databases connected to the Internet from the control numbers on the slips

Increasingly, production centers and companies allow consumers to access production and manufacturing information from the Internet, even for vegetables, fruits, and processed foods,

The government is also promoting traceability efforts to ensure food safety and quality.

1.1.2 Recycling

A registry of air-conditioners, televisions, refrigerators and washing machines are maintained according the Electric Application Recycling Law. When home appliance store collects these home appliances for disposal consumers are provided written documentation (called a “manifesto”) issued by the Home Appliance Recycling Coupon Center. Using the reference number on this document as the key to the Home Appliance Recycling Coupon Center database, consumers can provide proof that they properly disposed of the appliance.

1.1.3 Parcel delivery service

When shipping with many parcel delivery services consumers are provided a copy of their shipping document (waybill). This document has a pre-printed tracking number provided in both bar code and human-readable form giving the shipper the tracking number and giving the carrier the ability to use the bar code to automate the recording of the parcel’s journey. Whether from the waybill or from a label that has been generated at parcel pickup having the same tracking number, the bar code tracking number is read at pick-up, into the origin city-station, out of the origin city-station, into the sortation hub, out of the sortation hub, into the destination city-station, onto the delivery truck, and at delivery to the consignee. The efficient recording of this tracking information back to a central database permits the consumer to track their shipment on the Internet.

2.0 New Trends in Product Traceability

In recent years, product traceability has been undergoing massive changes, leading to radical changes in consumer convenience and industrial operations. Changes are in two directions: changes in needs and changes in technologies used.

2.1 Changes in needs

Needs related to product traceability are emerging in the form of trends to seek increasingly detailed traceability information from two directions: increased social needs for "safety" (in a broad sense of the term), and economic needs driven by stronger corporate competitive strength through "efficiency".

Though these needs are not necessarily obvious yet, the following are some examples reviewed by this committee.

2.1.1 Changes in social needs

The consumer needs (or believes that they need) to have access to production center, manufacturing, and distribution records of products purchased, primarily for meat, fruits, and vegetables. Needs exist to reinforce risk management related to the prompt investigation into causes of food accidents, recovery from those accidents, etc. Furthermore, needs exist to systematize management of expiry dates of foods, currently done by looking at printed expiry dates.

To prevent illegal dumping, needs exist in recycling efforts to promote environmental protection through the registration and management of information on component materials used in the manufacture of products. This permits the identification and recovery of these materials during recycling.

For automobile safety, needs exist to document and manage the record of original equipment and subsequent service situations of repaired or replaced parts. Such needs exist both for product recalls of vehicles as well as service records for used ones.

In health care, needs exist to enhance patient safety by the accurate management of medication to prevent medication errors. Such errors can be introduced by misidentification of the patient, misidentification of the medication, improper identification of an expiry date or the inability to understand a faulty product's lot/batch number.

To maintain law and order needs exist for theft prevention in bookstores, jewelry shops, other retail stores, and elsewhere.

Needs exist for brand protection to prevent the circulation of counterfeit products such as bags, clothing, and other expensive brand name products.

2.1.2 Changes in needs seeking efficiency

Needs exist to improve efficiency and cost reduction in areas such as inspections and inventory control, and to accurately track stock quantities of products dispersed in shipping, storage, and stores.

Needs exist to implement customer-oriented marketing by detailed management of products owned by consumers and products sold. Needs exist to distinguish corporate strategies by marketing.

Needs exist to efficiently track the transportation of goods as well as improve logistic operations such as automatic sorting at shipment routing.

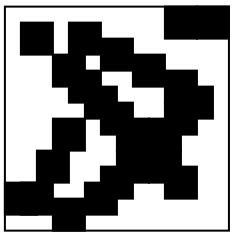
In manufacturing, needs exist to provide component traceability, and to track product movement and utilization between trading partners, for ensuring efficient manufacturing management.

2.2 Changes in technologies used

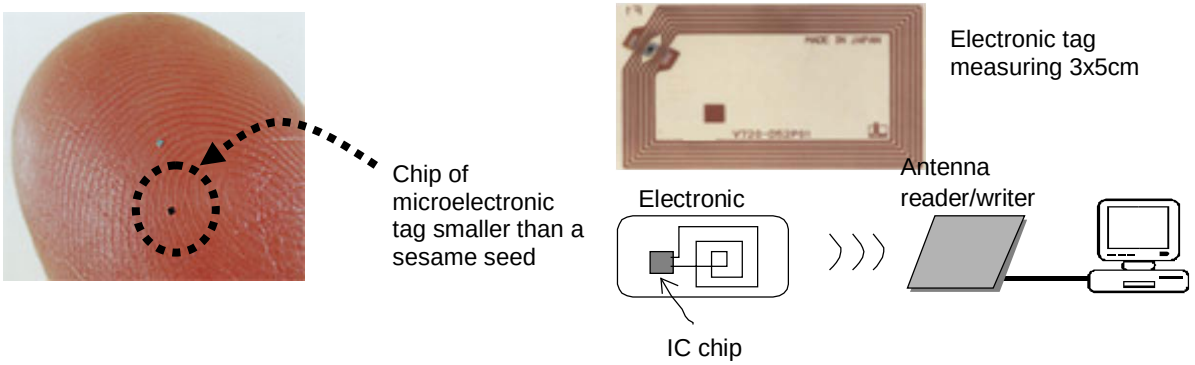
With the rapid progress of information technology in recent years, product information technologies, that have spread be manifested by one-dimensional linear bar codes are now rapidly progressing and diversifying to RF tags (integrated circuit chips with antennas allowing data to be read from and written to by wireless techniques) and two-dimensional symbols.

Example of one-dimensional linear bar code

Example of two-dimensional symbol



Example of RF tag



First, these technologies are permitting a significant increase in the amount of information that can be stored in the specific medium. For instance, while a linear bar code symbol can accommodate a dozen or so characters (JAN encodes 13 digits), two-dimensional symbols can accommodate up to 4000 alphanumerical characters. Depending upon the technology employed, RF tags can store a simple license plate, similar to JAN, or can have the capacity to store information equal to that of a two-dimensional symbol, or can have the capacity to store significantly more information that any two-dimensional symbol introduced to date.

Secondly, optically readable media such as linear and two-dimensional symbols are considerably less expensive than electronic, RF tags. The utility of RF tags may be found in the management of

manufacturing records with their reusing. RF tags may have cost from several thousand yen to over ten thousand yen, so use of this technology for products without considering reuse has been unthinkable. However technological progress in recent years has helped reduce their costs to several hundred yen depending upon whether they are read-only or read-write tags and the amount of on-board memory available. Recent technological development makes tags prices in the range of several ten yen per RF tag, and it has been suggested that prices in the range of several yen will not be impossible for a read-only tag.

Thirdly, particularly RF tags, unlike one-dimensional and two-dimensional symbols, allow for the easy writing of new information onto the tag through the production process, such as required information on how a product or parts was manufactured and on which date. Further, the RF tag can be incorporated into the product during the manufacturing, for use in downstream processes. Unlike one-dimensional and two-dimensional symbols, it also permits the reading of product information remotely that is not within line-of-sight, as well as the collective reading of the information from several tags, thus sharply reducing reading costs and time.

Finally, it is possible to enhance product traceability through the use of linear symbols, two-dimensional symbols, and read-only RF tags using today's technology. The rapid growth of networking, such as the Internet, permits remote database access to acquire information on products at higher speeds and lower costs than a few short years ago. If traceability environments can be created using linear bar code symbols, these databases enable an easy shift to use newer technologies such as RF tags.

2.3 Tasks that need to be undertaken

The use of new technologies for social needs for safety and economic needs for efficiency as described in Clause 2.2, above, will bring considerable benefit to the consumer, manufacturers, and transports people through the realization of a reliable and affordable environment. However this requires several tasks to be undertaken, beforehand.

The first task is, as mentioned earlier, is the development of standardized product traceability across industry boundaries of agriculture, transportation, manufacturing, distribution, and across the areas governed by the various ministries such as Ministry of Agriculture, Forestry, and Fisheries, Ministry of Land, Infrastructure, and Transportation, and Ministry of Economy, Trade, and Industry.

Important tasks here include standardizing the coding system (data structure) to allow mutual reading of data regardless of the technology employed. Additionally, there must exist established rules on the handling of personal information. If basic consensus is not achieved on these important issues amongst all involved parties, the risk of undesirable consequences in the future is high.

Second, specifically for RF tags, their costs have yet to come down sufficiently for them to be used in low product value, low margin situations, e.g., grocery retailers. Consequently, to facilitate the use of inexpensive tags, the minimum requisite standardization is indispensable. This will also be crucial for minimizing investments for the economy during the current long-continuing recession and for reducing overall costs.

For these reasons, this Study Group on Improvement of Product Traceability was launched crossing industry and ministerial boundaries, without being constrained by conventional traditions, to unite for a common purpose. Related industries gathered to discuss important topics. Through the cooperation of participating members, consensus was achieved in a certain areas, and the details are outlined in this interim report.

This interim report is divided into Establishment of Rules and Environment for Improving Product Traceability (Clause 3.0) and Resolving Social Tasks Common to Traceability (Clause 4.0). Clause 3 is further divided into Common efforts (Clause 3.1) and Efforts which should be shared as much as possible (Clause 3.2),

While the former are items that the study group believes must be standardized in order to achieve the goals indicated above, the latter are items for which efforts to share them where possible are important for achieving the goals.

2.4 Definition of “Product Traceablity”

Based on the above need to achieve consensus under cross-industry and ministerial solidarity, “product traceability” in this report shall broadly taken to be as follows.

Product traceability is the tracking and management of products using information technology. It is the establishment of a system which links and provides information such as product details, information on location, information on transaction with each product when they are required. Strictly speaking, it consists of various levels from the following three perspectives.

2.4.1 Frequency of referring to information

To what extent must the information be “real time”? Some environments may require that the production and distribution records be continuously updated 24/7/365. Other environments may need to have information available only when requested (“on demand”). Yet other environments may have informational requirements only at certain times, such as at the time of purchase.

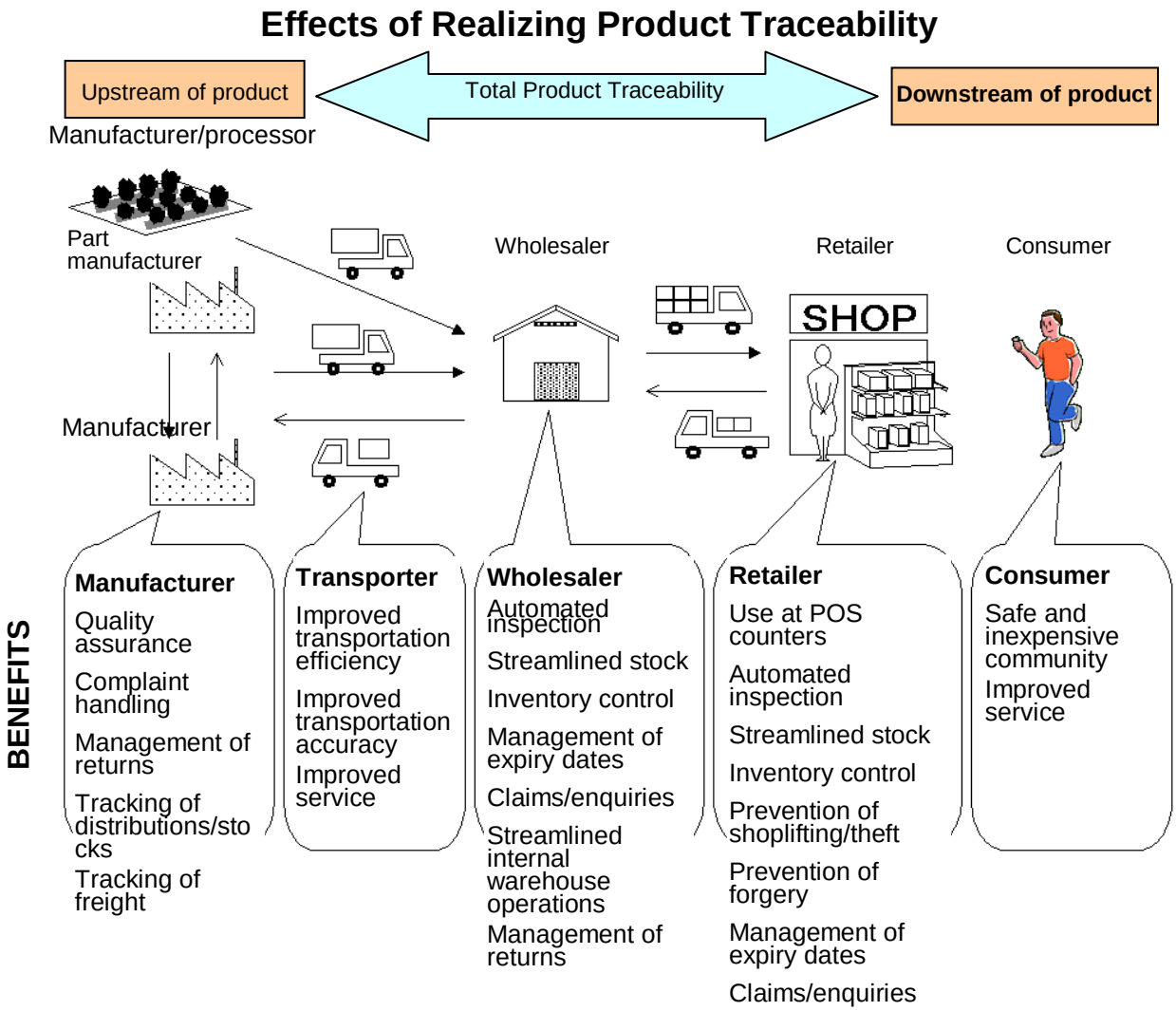
2.4.2 The amount of information used

How much information is enough? Certain applications need information on the complete product life cycle process from production, to distribution and records on use. There are others who need to use only production records, those who need to use only distribution records, and those who need to use only manufacturer information required by the consumer.

2.4.3 The detail of the information required for traceability

Certain applications may require traceability for each item (serialization), others that require traceability by lot number, and those that require traceability by product code or type.

In a narrow sense of the word, "product traceability" is the "constant verification of records on the whole product life cycle process of each product". Here, these three perspectives are reviewed as a whole, with each perspective interpreted as broadly as possible.



3.0 Establishment of rules and environment for improving product traceability

3.1 Common efforts

3.1.1 Basic view

New technologies such as two-dimensional symbols and electronic tags are increasingly being put to practical application in various areas. However, the fact that basic coding structures (data structures) have yet to be standardized is a major obstacle in popularizing electronic tags, etc.

In attempts to implement product traceability using electronic tags and two-dimensional symbols, such efforts will bring little benefit if not done uniformly with others. All companies, whether in the upstream or downstream process, need to undertake product traceability jointly; not just by one company alone, but by all companies in the industry uniformly. However, since many companies adopt a “wait-and-see” attitude such cooperation may be difficult.

Since interest in RF tags and other new technologies are definitely growing stronger in each area, it is hoped that at least the definition and directions that need to be standardized will be agreed upon while bearing in mind the need to ensure flexibility in a dynamic business environment. It is further hoped that studies and practical applications in all directions will be accelerated.

Thus in this interim report, studies were carried out in accordance with the following three rules.

3.1.1.1 First, from the viewpoint of uniting for a common purpose across industry boundaries: review efforts that need to be standardized across industries to enable sharing by distributors and consumers who handle different types of products (Cross-Industrial interoperablity).

3.1.1.2 Based on efforts to develop manufacturing bases and distribution channels abroad, as well as systems for both exports and imports, the goal shall be for internationally viable solution instead of a system limited to domestic use (Internationality).

3.1.1.3 The use of established product coding schemes should be used where possible (compatiblity).

So what are the efforts that need to be standardized? Considering the fact that the needs of industries concerned with product traceability are still somewhat vague and undefined, the historic needs of industries and companies regarding actual product records such as production history and transaction history should be treated with respect. National government should make the efforts to enable standardization of those expected to provide specific benefits. On the other hand, no matter how product records may differ according to the purpose of use, if upstream manufacturers use a completely different coding structure for identifying products, those in the downstream such as distributors and consumers will not be able to identify products. For this reason, it is believed in this interim paper that it is important to, at the minimum, ensure business interfaces of coding systems for identifying products.

Such efforts help to ensure technological neutrality, because various technological proposals are being considered for individual product traceability processes beyond identification information. One such, non-data structure issue is whether the traceability information should be recorded on the RF tag or whether the RF tag should simply be a license plate to access the information via a communications network. This interim paper suggests that we must resolve the data issue first, before we decide on whether the data is resident in the media or resident on the network.

3.1.2 Standardization of codes for cross-industry product identification

In the standardization of coding structures for product identification, it is essential to ensure not only the business interface and internationalization, but also compatibility with existing product codes. In particular, in order to ensure business interface while maintaining compatibility with existing coding structures, it is necessary to:

3.1.2.1 Establish a mechanism capable of unique identification of company identification numbers using the issuing agency codes that enable identification of the organizations (JAN, CII, DUNS, etc.)

3.1.2.2 Disclose the nature and details of information written on codes other than corporate codes and product record information, or establish rules common to industry. For this reason, the following were proposed as rules of codes that should be shared across industry to improve traceability. At the same time, ISO standards will be promoted.

Standards on product identification codes

Issuing Agency Code (IAC)	**Company Identification Number (CIN)**	**Item Code**	**Serial number**
JAN, CII, DUNS assigned by IAC Registration Authority See Note 1	Company number assigned by IAC organization See Note 2	Product code assigned by company identified in CIN	Serial number assigned by company identified in CIN

Note 1 – **The data length of the respective codes is not fixed except by the rules of the IAC Registration Authority, and common identifiers are inserted as required. Identifiers used are those standardized as ISO15418[1] already broadly used internationally**

Note 2 - **Issuing Agency Codes are already standardized in ISO15459[2]**

To the extent possible the same products should have the same product code within the same industry. If the coding structure is limited to in-house use (a closed system), this coding structure need not be followed. If the coding structure is to be used between trading partners (open system) this coding structure should be used.

3.1.3 Establishment of environment by government

To facilitate the use of RF tags for improving traceability on an international scale, it is necessary for the government to establish common regulations. For example, the government needs to promote more flexible use of radio wave bands based on the trends of international applications.

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1 With ISO15418, generally identifiers (identify code numbers indicating contents and meanings of data) such as AI(Application Identifiers) and DI(Data Identifiers) are set down as standards. AI is an identification code number indicating data type and format. It is added to the head of data fields such as date of manufacture, shelf-life date, medicinal effects deadline, order number, packaging number, shipment destination code, etc. indicated by the CODE-128 barcode set down by EAN International. It is mainly used in distribution. In respect to this, DI(Data Identifiers) are identifiers indicating the the contents and meanings of data set down by the FACT (Federation of Automated Coding Technologies) in the U.S. They are generally called FACT data identifiers, and are mainly used in the steel, automobile, electronics manufacturing industry.

2 With ISO/IEC JTC1 SC31, number issuing organization codes assigned to number issuing organizations have already been standardized as IAC codes (ISO/IEC15459). For details, refer to Attachment 2.

3.2 Efforts which should be shared as much as possible

3.2.1 Recommended efforts by each industry

Since product record information can differ according to the purpose of product traceability, company, and industry, the management of this information should emphasize the importance of company and industry initiatives. However, if traceability goals and purposes are the same within an industry, it is desirable for the management method and product record information (including item code and serial number data structure of the product identification code system) to be the same.

Consequently, this study group proposed:

3.2.1.1 Create a venue for discussing efforts on traceability per industry

3.2.1.2 Construct reference models which can indicate management methods on product record information, including the contents of product record information, and the preservation period for product records

3.2.2 The fields expected to discuss efforts on traceablity per industry

- Horizontal review from distribution and logistics perspectives
    - Distribution/logistics
- Review based on uniqueness by individual area
    - Enhancing efficiency of product management and product development
        - Books/magazines
        - Apparel
        - Higher priced brand name goods
        - Daily sundries
    - Reliability and safety in general consumables
        - Beef
        - Fresh foods other than beef
        - Processed foods
        - Medical equipment and supplies
        - Cosmetics/medicated cosmetics
        - Pharmaceuticals
    - Quality assurance/recycle and reuse in durable goods
        - Automobiles

- Home appliances
- Steel
- Construction materials/homes/housing facilities

In addition, the establishment of venues to discuss efforts on traceability by the AIDC(automatic identification and data capture) industry, who supply RF tags and two-dimensional symbols, will also assist in improving product traceability across all industries.

3.2.3 Cross-Industrial standardization of document formats on "reference models on management methods of product record information" in industry

It is beneficial for reference model formats in each industry to use the same template in the construction of "reference models on management methods of product record information". For this reason, the study group proposes to standardize the template of the reference model, and to acquire ISO certification for this template. The following are formats of the reference model.

- Format of "Reference models on management methods of product record information
  - Subject/scope (application environment): Establish the applicable business, scope, and application environment for implementing management of product record information.
  - Dictionary (terminology): Define the terms used in the subject/scope.
  - Grammar: Establish specifications for the database of product record information and rules on use.
  - Operating regulations: Establish regulations on operations within the subject and scope defined and procedures for maintaining and managing the database.

For details, refer to Attachment 4 "Reference Materials" in Japan.

Note 1 – Standardization of terms and definitions in the description of reference models

- Where possible, terms considered common to all reference models on product traceability should be standardized, such as manufacturer, and date of manufacture.
- It is also beneficial to standardize the procedures to update product record information, and syntax such as UML when describing the management methods of product record information.

Note 2 – Internationalization of reference models

- It is desirable to review and replace, inefficient trade practices and transaction rules that are not suitable for the 21st Century so that the reference model can be shared internationally.

Note 3 – Disclosure of standard specifications in information system procurement

- In the development of reference model formats, also consider availability of the definition of standard specifications during systems procurement.

3.2.4 Construction of cross-industrial database for reference models on management methods of product record information

Considering future developments, information on efforts to enhance traceability should be shared between different industries, as much as possible. The reference models that serve as precedence will be constructed by each industry, but it is essential to enable them to be referenced cross-industry so that all industries can proceed with leading efforts simultaneously.

Consequently, reference models constructed in each industry should be accumulated in one cross-industry database, and mechanisms for mutual referencing established.

3.2.5 Provision of information on technologies which can be used for product traceability

For technologies that can be used for product traceability, various proposals are being made in addition to the multiple RF tags being standardized by ISO. Despite the ever-increasing speed of technological progress, precise information is not always conveyed accurately to the user.

There is therefore a need to collect this information centrally and to provide the information to users permitting them to make informed decisions.

4.0 Resolving social tasks common to traceability

4.1 Protection of personal information

Product record information may at times disclose the name of the producer as well as production history. At times, the record of use by individual consumers may be recorded and used for recycling, reuse, and quality assurance. Consequently, there is a need to specify what information is private to the individual and how the corresponding information should be handled in reviewing the methods of using stored information.

4.1.1 Definition of personal information

According to the Personal Information Protection Bill, “personal information” means any information which could identify existing individuals. However, attention should be paid to information that does not identify individuals, such as:

- Company information, production site and type of product
- Consumer preferences and tastes, record of purchases, record of home appliance purchases and disposals.

When this information is disclosed and used together with information that identifies individuals, they should then be treated as personal information.

4.1.2 Handling of personal information

4.1.2.1 Businesses handling personal information

Whoever uses product record information that can identify personals such as producers and users are subject to the legal obligations of “Businesses handling personal information”. However, users who only browse product record information databases and whose databases contain a small amount of personal information are not subject to legal obligations.

4.1.2.2 Obligations of businesses handling personal information

Those in this category can use the personal information in any way, with the consent of the individual whose information is being used. However, in reality, since consent may not be obtained from all the individuals whose information is being used, attention must be paid to the following points.

- When personal information is acquired, the individual concerned must be notified of the purpose of use (if acquired directly from the individual, purpose of use must be conveyed to the individual personally).
- The personal information possessed must be verified to be accurate and current.
- Personal information must not be disclosed to a third party without the individual's consent. If individual has been previously noticed the issues defined by the Bill, for example, that requests from individuals to not provide such information shall be honored, a new consent form is not required.
- The required procedures for disclosure of personal information possessed must be disclosed, and disclosure, discontinuation, or revision of the information should be implemented if requested by the individual,
- Security measures must be established, and appropriate supervision of employees and subcontractors must be implemented.

4.1.2.3 Attachment of personal information to products

Businesses handling personal information have the responsibility to devise measures to maintain the privacy of personal information. For this reason, when recording information that can identify individuals such as RF tags and two-dimensional symbols, there is a need to control security measures beforehand to prevent unexpected third parties from reading and copying the information.

For RF tags to be accepted by the market with confidence, the attachment of personal information to such tags should be done after further technological development. Consequently, there is no obstacles that the information which can not specify the individual could be attached to RF tags.

4.2 Ensuring reliability of product record information (tasks which need continued review)

In distribution and logistics, an important task in determining economic viability of the use of RF tags is the accuracy of the data.

4.3 Establishment of infrastructures for sharing product information in distribution

For traceability to be effective, international standards like the JAN/EAN codes must be further spread in distribution. This should also contribute to the optimization of the whole distribution system (supply chain management).

4.3.1 Spread and thorough use of standard business protocols (codes, transmission data format, communication protocol)

In distribution, many companies use their own codes and formats for electronic data interchange (EDI), which means that standard business protocols (various codes, transmission data format, communication protocol) such as the world standard JAN/EAN code have yet to be incorporated. In times when information technologies are rapidly evolving and EDI between companies is increasing,

companies need to show more enthusiasm in further use of standards and realistic measures to spread the standards are required.

4.3.2 Development of standard business process model

The first and foremost reason for the delay in the use of JAN/EAN codes for EDI is attributed to the inconsistency of work processes amongst business partners. The elimination and rationalization of overlapping or redundant processes taking into consideration the business characteristics of individual companies, and development of standard business process models on multiple patterns according to the mode of transaction implemented would therefore be advantageous to the spread and thorough use of standard business protocols. This would also eliminate redundancies in our community, leading to overall optimization.

4.3.3 Construction of common platform of product information

Based on 4.3.1 and 4.3.2, above, the construction of EDI systems (product information common platform) applying the Internet (using the international standard language XML) should contribute to the spread of systems and standard business protocols within which anyone, including small and medium sized companies can participate easily.

In addition, when considering the timing for shifting the host computer of the company to one that is open so that the usefulness of EDI using the Internet can be enjoyed, it should be the direction that to implement EDI conforming to the product information common platform between most companies will be as soon as possible.

5.0 Future Directions

This interim report summarizes the first steps to be taken to improve product traceability. These results shall be linked to the efforts in the second stage, and appealed to related ministries including incorporation in the next term e-Japan strategies.

This study group shall continue its discussions to fulfill the following functions.

First, as a study group, convey the results of the interim report promptly to related industries, suggest that they commence specific operations in each industry, and clarify scenarios including work schedules in each industry.

Secondly, once efforts in each industry become specific, variances may occur between different industries regarding the proposals made by the study group for efforts and “efforts which should be standardized as much as possible”.

For this reason, the study group should work to discover and coordinate tasks required for maintaining and ensuring convenience between industries.

Thirdly, to promote standardization of coding structures and information sharing activities between different industries, there exists a need to establish organizations to coordinate the overall activities of industries to maintain and manage the standards prescribed and efforts to be shared. Specifically, the roles expected within the range of activities proposed in this interim report are:

- Management of the Issuing Agency Codes domestically
- Management of the format for reference models on the management methods of product record information
- Construction and management of a cross-industry database for the reference models

For this, the study group shall continue discussions on the ideals of organizations coordinating the entire economy.

Fourthly, many tasks exist for the improvement of product traceability including the “tasks which need continued review” outlined in this interim report. The following are some examples of such tasks.

- Mechanisms to ensure reliability of information based on purpose and characteristics by industry
- Review of areas which can contribute to improvement of traceability of products through use of governmental procurement and government management operations
- Propose specific examples of benefits achieved by improved traceability
- Review measures to improve traceability using new techniques, such as the use of RF tags,

Ideas should continue to be accumulated from an extensive range of parties related, with the goal to organize and resolve tasks.

To embody the proposals made in this interim report and appropriately support the activities in each industry as the second stage, the study group shall encourage industries, incorporate these goals in the “Guidelines on Cooperation in Use of Computers” which the government is planning to establish under the “Law on Promotion of Information Processing”, and promote these efforts to link them as legal activities to specific practices.

Annex A - Specific Examples using Standards

A-1. JAN/EAN Codes

Issuing agency code (IAC)	Corporate code (CIN)	Item code	Check digit	Product Serial number
49	12345	67890	C	12345***

JAN Code

(Note) If the number issuing organization code is 0 to 9, it signifies EAN code (JAN code).

(Note) The manufacturer code of JAN code is 4912345 (7 digits) and 451234567 (9 digits).

A-2. Fresh Produce JAN Codes

Issuing agency code (IAC)	Corporate code (CIN)	Item code	Check digit	Product Serial number
49	22	1245678	C	12345***

Fresh produce flag

JAN Code

B-1. JIPDEC/ECPC Codes

Issuing agency code (IAC)	Corporate code (CIN)	Item code	Product Serial number
LA	123456	789000***	12345***
	JIPDEC Standard Corporate Code	Manufacturer's Product Code	Serial number assigned by manufacturer

C-1. DUNS Codes

Issuing agency code (IAC)	Corporate code (CIN)	Item code	Product Serial number
UN	123456789	789000***	12345***

DUNS Number

D-1. JIPDEC License Plate

Issuing agency code (IAC)	Corporate code (CIN)	Package/Container Serial number
LA	123456	12345***
	JIPDEC Standard Corporate Code	Package/Container serial number - shipper assigned

D-2. JAN License Plate

Issuing agency code (IAC)	Corporate code (CIN)	Package/Container Serial number	Check Digit
0	49 123456	12345***	C
IAC is in the position of what was formerly known as Package Type	DCC Assigned Company Prefix	Package/Container serial number - shipper assigned	

Annex B – IAC

With international cargo identification codes in distribution “license plate number”, efforts are made to allow existing number issuing organizations to be used in the same coding system using Issuing Agency Codes. Issuing Agency Code organizations register with the international Registration Authority, Nederlands Normalisatie-instituut to obtain an Issuing Agency Code.

Example of IAC

Name of Corporate Code, etc. (Number issuing organization)	**Code Indicated**
EAN code (EAN International) (JAN code [Distribution System Development Center])	0 to 9
D-U-N-S Number (Dun & Bradstreet)	UN
CII Standard Corporate Code (JIPDEC/ECPC)	LA

Refer to the following homepage for details: http://www.nen.nl/nl/pro/line/ISOIEC15459_and_EN1572_register.html

Roster of members of Study Group on Improvement of Product Traceability

(Alphabetical Order – March 13, 2003)

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Hayakawa, Tetsushi	House Foods Corp.
Ishii, Shinichi	Nomura Research Institute, Ltd.
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Ohkubo, Hidenori	Japan Institute of Logistics Systems
Ono, Hitoshi	Toppan Printing Co., Ltd.
Ono, Kozo	The Distribution Systems Research Institute (DCC)
Sakai, Toshiyuki	Paltac Co., Ltd.
Satake, Takashi	Onward Kashiyama Co., Ltd.
Segawa, Kurazo	Toyota Motor Corp.
Shibata, Akira	Denso Wave Incorporated
Suzuki, Hiroyuki	Askul Corporation

Takahashi, Shigetoshi	Toshiba Corporation
Tamanyu, Hiromasa	Planet Inc.
Togu, Kunihiko	Ryoshoku Ltd.
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