GS1 Japan

The Global Language of Business

Publication of Source Marking Guideline for Raw Materials

1) Background on Writing the Guidelines

GS1 Standards are widely used in the supply chain between processed food manufacturers, wholesalers and retailers in Japan, and most traded products sold to consumers are marked EAN/UPC or/and ITF symbol encoded GTIN that is broadly used for receiving and shipping operations, merchandise control and traceability, etc. These GTINs are also used for standard EDI and product databases. On the other hand, the use of GS1 standards has not spread among raw material manufacturers and processed food manufacturers in the upstream of the supply chain, and many traded raw materials do not even have identification numbers nor barcodes. Therefore, visual observation or manual management is common.

However, in recent years, there have been cases in which some processed food manufacturers request raw material manufactures to mark barcode on the raw materials they receive for efficient receiving and shipping operations, inventory management and traceability development. Since GS1 Standards have not been widely used, and raw material manufacturers receive various requests from processed food manufacturers to mark barcodes in different items/formats (which character set to use, the number of digits, etc.). For this reason, there have been issues, such as the need to mark different barcodes (encoding different information items/formats) according to clients even for the same raw materials. There were concerns that if more

Fig. 1 State of GS1 Standards Use in Japan

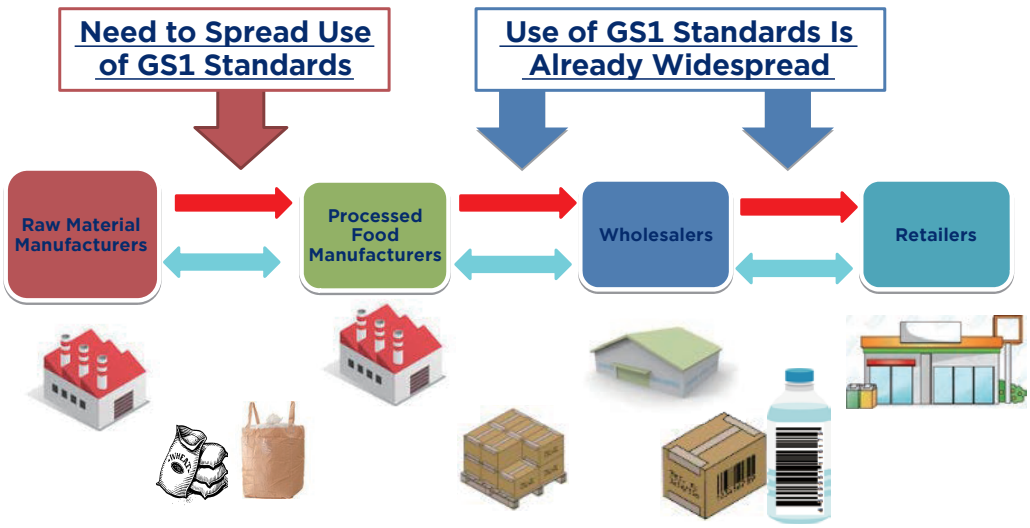


Fig. 2 standard data format (Application Identifiers) on barcodes

Products with Unit Prices	Variable measure items
GTIN: AI (01) Production Date: AI (11) Best-Before Date: AI (15) or Expiration Date: AI (17) Batch or Lot Number: AI (10)	GTIN: AI (01) Weight/Dimensions: AI (3nnn) Production Date: AI (11) Best-Before Date: AI (15) or Expiration Date: AI (17) Batch or Lot Number: AI (10)

processed food manufacturers demand different barcodes on the products shipped to them, the burden on raw material manufacturers dealing with the situation would grow, or the burden would be so great that the manufacturers would not be able to respond.
Given the circumstances, GS1 Japan summarized on the current situation and challenges of the upstream supply chain and developed this guideline with contributions from raw material manufacturers, processed food manufacturers, solution providers and experts.

2) Outline of the Guideline

The guideline establishes principles to identify raw materials traded among raw material manufacturers and processed food manufacturers, and describes how they should be marked in barcodes including technical details and points to be noted. The Guideline is developed to achieve the following:

a) Widespread identification of raw materials using GTIN and AIs
b) Increased source marking on raw materials by raw material manufacturers
c) Shift from manual management to management by a system (systematization) using barcodes

3) Benefits of the Guideline

The benefits of using the guideline are mainly as follows:

a) Increase in the rate at which raw material manufacturers marking barcodes (source marking) on raw materials

The guideline has described standard data format on barcode for raw materials. This makes it possible for raw material/material manufacturers to "eliminate the need to change codes or to show different items for different clients," enabling them to "deliver products under a standard format." If more raw materials are source marked as described in the guidelines, processed food manufacturers can leverage these standard barcodes for more efficient operations and/or keeping records.

b) Highly precise receiving and shipping operations

By standardizing data format (Application Identifiers) on barcodes for raw materials, the percentage of source marking by raw material manufacturers is expected to increase. By using barcodes in receiving and shipping operations, work done through visual observation can be transitioned to work using barcodes.
A barcode enables information to be scanned quickly and accurately by a machine and processed by a computer, and

Fig. 3 Shift to Receiving and Shipping Operations Using Barcodes

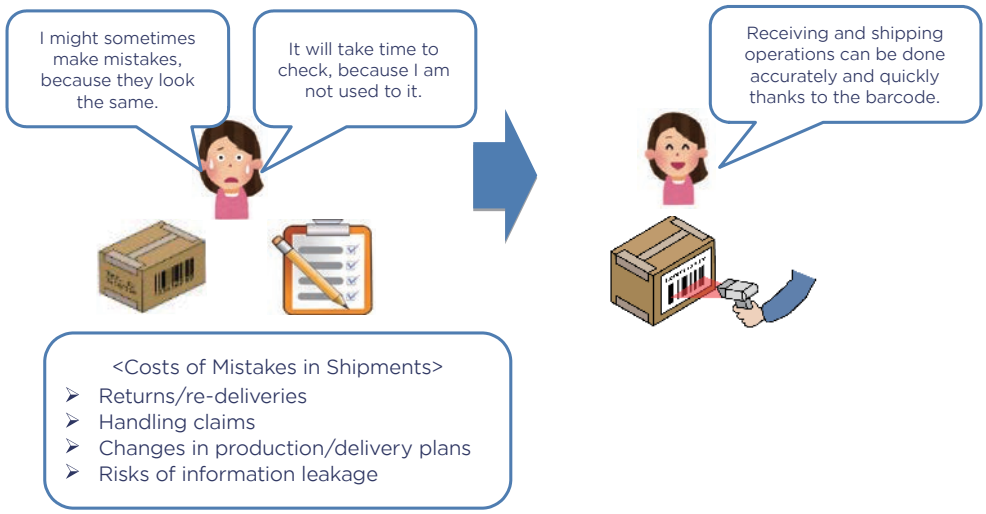
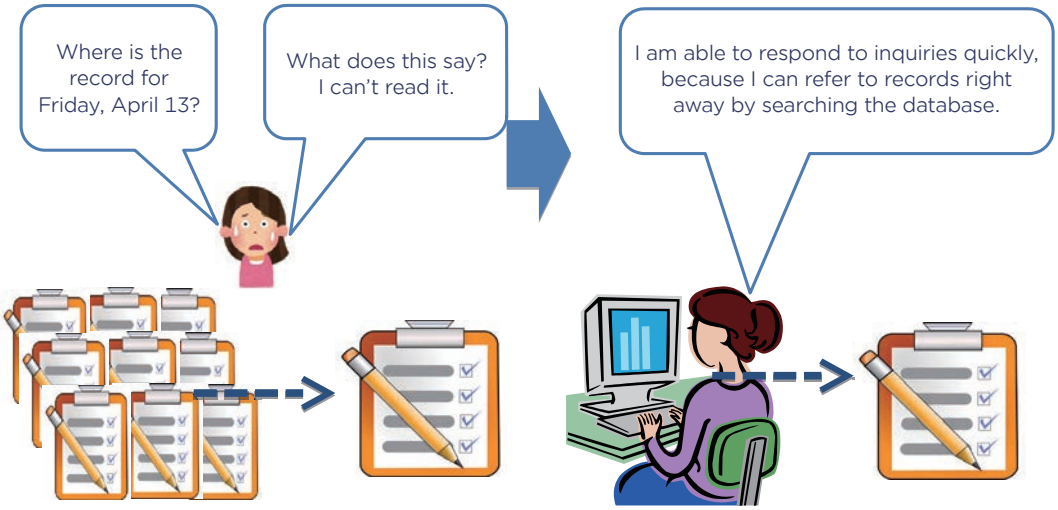


Fig. 4 Shift to Data Input Using Barcodes

Fig. 5 Transferring Receiving and Shipping Records to a Database



is expected to have the following effects:

- Prevent mistakes in receiving and shipping, due to mistakes in checking through visual observation or misunderstandings
- Eliminate inconsistencies in working hours/quality depending on workers
- Reduce the trouble of checking products and reduce the burden on workers
- Save time and reduce labor costs through systematization

c) Less work/improved accuracy for inputting data

To ensure traceability, there is a need to record/save information on when (arrival dates), from/to where (places), what (product names) and how many (numbers) raw materials were received/shipped. This recording/saving process can be done by hand, but by automatically retrieving data from barcodes into the system, the recording/saving can be done more quickly with more accuracy.

d) Speedy handling of inquiries

When there is an inquiry from a consumer or if an emergency occurs, there is a need to refer to the receiving and shipping records of the raw materials. The records can be saved on paper, but when data from barcodes are transferred to a database to be saved and managed, it can be handled quickly while maintaining trust.

GS1 Japan, while working to spread the use of the guidelines, also plans to promote the use of standard EDI and product databases in cooperation with the industry, aiming to further streamline the supply chain among raw material manufacturers and processed food manufacturers.

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