Validoo Item Operations Manual

Version: 3.1pA

Contents

1 Log of changes

Version	Changes made	Date
F	Ingress in chapter 2 is updated and bullet 5 in chapter 2. Version of xml schemas is changed to be in align with version 2.8.	2014-11-28
3.1pA	Changes due to major release.	2016-02-04

2 Introduction

2.1 Validoo Item Operations Manual

Validoo Item Operations Manual describes how to interact with Validoo Item. The document should be read by system developers, when setting up communication with Validoo Item.

2.2 GDSN Operations Manual

The GDSN Operations Manual describes how to interact inside GDSN. Therefore some of the principles are not applicable when a user interacts with Validoo Item, because the interaction is outside GDSN.

All system developers must read the GDSN Operations Manual, with the exception of a few sections, that are not applicable. The table below specifies what chapters of the GDSN Operations Manual that should be taken into consideration, or are not applicable, when setting up direct communication with Validoo Item.

Table 1. Reading instructions for GDSN Operations Manual.

Chapter	Status	Comment
1	Take into consideration	
2.1, 2.2	Take into consideration	Validoo Item manages all communication to and from the GDSN for Validoo Item users. For communication with a data recipient that is not connected to Validoo Item, please contact GS1 Sweden for more information.
3	Not applicable	
4	Take into consideration	
5	Take into consideration	Validoo Item manages all communication to and from GDSN. It is not mandatory to use AS2 with Validoo Item when the communication is outside the GDSN.
6	Take into consideration	
7	Not applicable	
8	Not applicable	
9	Not applicable	

Chapter	Status	Comment
10	Not applicable	

3 Description of publication and subscription process

The Global Registry, Data recipient, Validoo Item and the Data source communicates by sending and receiving messages when publishing and subscribing to a Catalogue Item Notification message (CIN). The process is summarized in ***Fig 1*** and described in detail below. The messages are described in section 5.

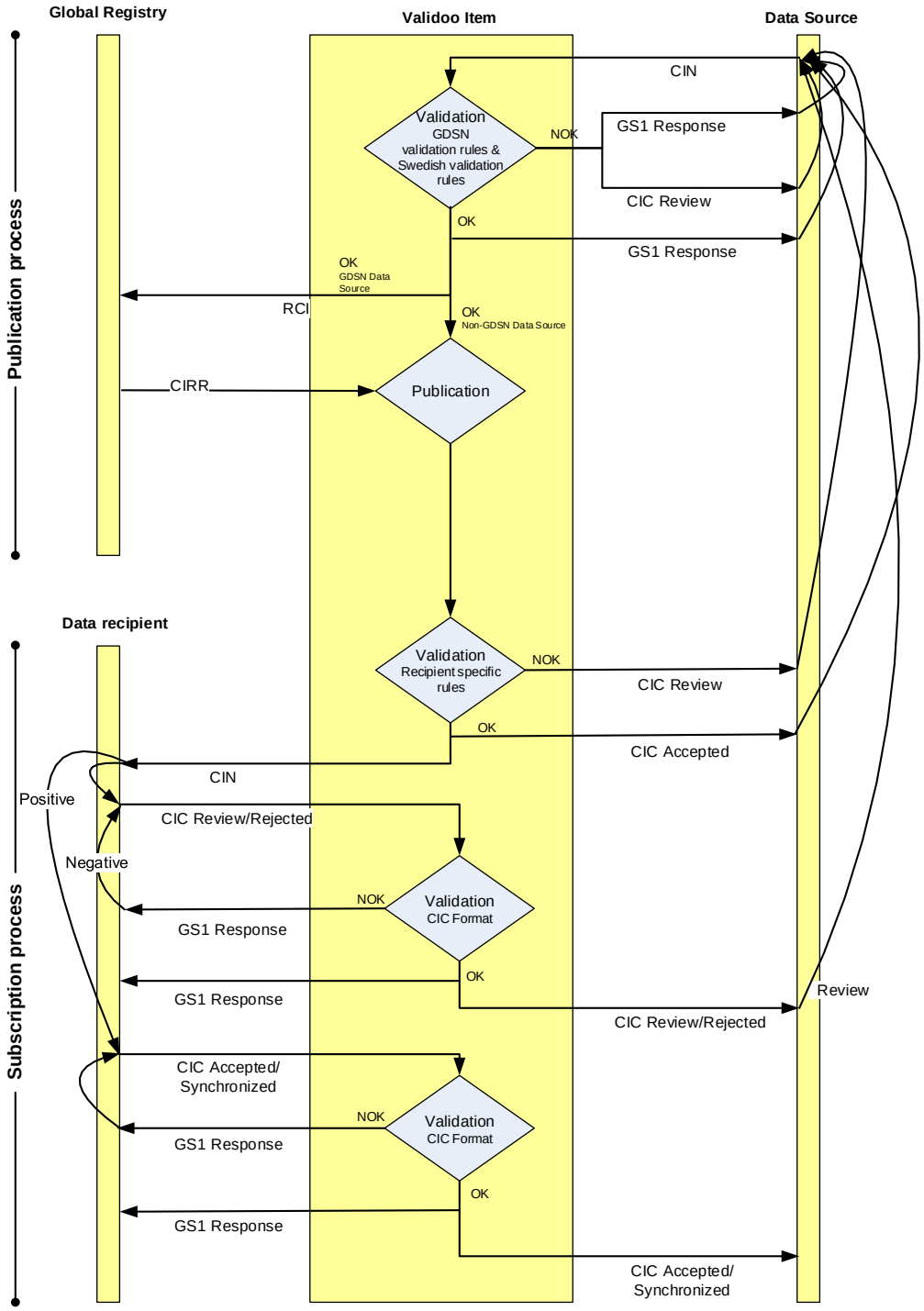

Fig 1. *Summary of communication between Global registry, Data recipient, Validoo Item and the Data source. Process preconditions.*

Before the process can start, the following initial conditions, [IC], must be fulfilled:

- [IC1] The data source has a new or changed trade item.
- [IC2] The data source considers the trade item data to be correct.
- [IC3] The data recipient has a subscription that matches the trade item data from the data source.

3.1 Process start

The data source chooses data recipient(s) (one or more) for the trade item data. The process starts when the data source decides to publish trade item data to the data recipient(s).

3.2 Rules

Validoo Item Validates a CIN with a set of three different rules.

- GDSN rules
    - A set of rules that the GDSN network has decided to implement. All data pools run the GDSN rules that are applicable to their target market and scope.
- Validoo rules (Swedish rules)
    - A set of rules that Validoo and the community in Sweden has decided to implement.
- Recipient specific rules
    - Different recipients allow different measurements for a trade item and the rules will prevent a recipient from receiving something that is too big or too heavy. The following measurements are validated in the set of recipient rules and the values can vary from recipient to recipient:
        - Pallet height
        - Weight on 1/1 pallet
        - Weight on 1/2 pallet
        - Weight on 1/3 pallet
        - Weight on 1 /4 pallet
        - Weight on non-consumer units
        - Weight on consumer units
    - All recipients doesn't have this functionality added and each supplier need to talk to their recipients about what specific measurements they allow.

3.3 Process implementation

1 The data source creates a Catalogue Item Notification (CIN) with the trade item data and chooses data recipient(s). The data source can later choose to reuse the data to create a new CIN and send it to the same or a new data recipient.

2 The data source sends the CIN to Validoo Item.

3 Validoo Item validates the CIN according to the GDSN Validation rules and Validoo rules. Validoo Item sends validation reports back to the data source. The validation reports shows if the validation of the CIN according to the GDSN Validation rules is not approved (NOK) or approved

(OK) or if the Validoo Item validation rules are either OK or NOK. The validation report also specifies which errors that has been found in the CIN.

a) **Validation NOK on a GDSN rule** – Validoo Item sends the validation report GS1 Response with ResponseStatusCode as “Rejected” to the data source. The data source corrects the CIN and repeats the process from step 1.

b) **Validation NOK on a Validoo rule** – Validoo Item specifies the errors in the validation report Catalogue Item Confirmation (CIC), and sends the CIC with the status “Review” to the data source. The data source corrects the CIN and repeats the process from step 1.

c) **Validation OK on GDSN rules and Swedish rules** - Validoo Item sends the validation report GS1 Response with ResponseStatusCode as “Accepted” to the data source. Validoo Item sends a RCI (Registry Catalogue Item) to the Global Registry. When the RCI is registered the Global Registry replies with a CIRR (Catalogue Item Registration Response).

4 Validoo Item stores the CIN and move to publication process.

5 Validoo Item validates the CIN according to recipient specific rules, if the data recipient has specific rules. This step is repeated for every data recipient that has a subscription that matches the trade item information from the data source. The validation can be either not approved (NOK) or approved (OK). If the data recipient does not have specific rules the CIN is not validated according to recipient specific rules and the process continuous from step 6.

a) **Validation NOK** – Validoo Item specifies the errors, and which data recipient that is not accepted the CIN, in the validation report CIC. Validoo Item sends the CIC with the status “Review” to the data source. The data source corrects the CIN and repeats the process from step 1.

b) **Validation OK** – Validoo Item sends the validation report CIC with the status “Accepted” to the data source on behalf of the data recipient.

6 Validoo Item sends the CIN to the data recipient(s) who have a subscription that matches the trade item data from the data source. The data recipient can send a confirmation (CIC) to the data source as verification that the data recipient has received the CIN, and as a feedback on the CIN. Note that this CIC is not mandatory. The following steps are repeated for every data recipient that sends a CIC.

7 The data recipient reviews the CIN and sends feedback in a CIC to the data source via Validoo Item. The CIC shows if the feedback is negative (status “Review” or “Rejected”) or positive (status “Accepted” or “Synchronized”).

a) **Negative confirmation** – The data recipient sends a CIC with the status “Review” or “Rejected” to Validoo Item. Validoo Item validates the format of the CIC and sends a validation report to the data recipient. The validation report shows if the validation of the format of the CIC is not approved (NOK) or approved (OK).

i) Validation NOK - Validoo Item sends the validation report GS1 Response with ResponseStatusCode as “Rejected to the data with recipient. The data recipient corrects the CIC format and repeats the process from step 7a.

ii) Validation OK - Validoo Item sends the validation report GS1 Response with ResponseStatusCode as “Accepted” to the data recipient. Validoo Item forwards the CIC to the data source. The data source corrects the CIN and repeats the process from step1.

If the status was “Rejected” and the format validation was OK, Validoo Item will block future attempts to send CIN messages from the data source for that trade item hierarchy to that data

recipient. A data recipient can release the blocking by sending a new CIC message with status Review, Accept or Synchronized.

b) **Positive confirmation** - The data recipient sends a CIC with the status “Accepted” or “Synchronized” to Validoo Item. Validoo Item validates the format of the CIC and sends a validation report to the data recipient. The validation report shows if the validation of the format of the CIC is not approved (NOK) or approved (OK). The CIC is mandatory to send.

   i) Validation NOK - Validoo Item sends the validation report GS1 Response with ResponseStatusCode as “Rejected” to the data recipient. The data recipient corrects the CIC format and repeats the process from step 7b.

   ii) Validation OK - Validoo Item sends the validation report GS1 Response with ResponseStatusCode as “Accepted” to the data recipient. Validoo Item forwards the CIC to the data source.

3.4 Publication to recipient

A trade item information can be sent either public or private.

Address public information – The trade item must be sent to the Validoo Item Community GLN as Data recipient (T3809), on all items in the trade item hierarchy. Validoo Item will then treat this hierarchy as public and available to all recipients that have a valid subscription.

Validoo community GLN PreProd: 7300029999921

Validoo community GLN Production: 7300029999938

Address private information – Populate the attribute Data recipient (T3809). This will allow the trade item information to be private to the addressed data recipient. Only the addressed recipient can access and receive the trade item information until it is available on the shelf.

3.5 Access to a trade item

When the trade item is public all recipients with a valid subscription can access and request a copy of the trade item. The trade item hierarchy will be public when the following conditions are met:

1 If the date and time in Consumer availability date time (T2227) has been passed on a consumer unit within the trade item hierarchy. If this date and time is different for different data recipients then the earliest date and time specified is used.

2 If Consumer availability date time (T2227) is not specified in the trade item information, then First ship date time (T3742) is used. When First ship date time (T3742) is passed the trade item hierarchy is public. If this date and time is different for different data recipients then the earliest date and time specified is used.

3 If Consumer availability date time (T2227) or First ship date time (T3742) is not specified in the trade item information, then Start availability date time (T4727) is used. When Start availability date time (T4727) is passed the trade item hierarchy is public. If this date and time is different for different data recipients then the earliest date and time specified is used.

A public trade item can’t go back to private if it hasn’t been discontinued first. To reuse the GTIN, the following steps need to be passed:

1 Send discontinued date time (T4015) on the trade item.

2 Pass the populated discontinued date time (T4015).

3 Reuse the GTIN.

3.6 Deleting or changing a published Catalogue Item, Catalogue Item Hierachial Withdrawal

GDSN release 3.1 introduced the Catalogue Item Hierarchical Withdrawal (CIHW) message which can be used to withdraw a published hierarchy to correct an issue with the hierarchical links but also can be used by the Data Source or Data Pool to inform their respective Data Recipient that a given Catalogue Item is being withdrawn from publication to a trading partner.

Note: In the previous releases, the same function was performed by sending the Catalogue Item Notification message, with command DELETE. A Catalogue Item Notification message, with command DELETE is no longer possible to send in version 3.1 of trade item information.

1 The CIHW message can only be sent on highest level of the published hierarchy.

2 The trade item being deleted via a CIHW must have been previously registered.

3 The only valid document command for the CIHW document is DELETE.

4 To correct a hierarchy for incorrect links, the hierarchy must be deleted using the CIHW message with a reason code of HIERARCHY_LINK_CORRECTION and then re-added with correct links.

5 To stop the publication of a hierarchy to data recipient, a Catalogue Item Hierarchical Withdrawal message and a hierarchy deletion reason code of PUBLICATION_ WITHDRAWAL is sent to the recipient data pool and on to the data recipient.

   i. To withdraw a public trade item information, Validoo community GLN is addressed as data recipient in the CIHW message.

   ii. To withdraw a private hierarchy, the recipient GLN is addressed as data recipient in the CIHW message.

The following reason codes are accepted in a CIHW message:

- **PUBLICATION_WITHDRAWAL**
  - The hierarchy is withdrawn from publication to a recipient. The hierarchy might still be available to other recipients.
- **HIERARCHY_LINK_CORRECTION**
  - The hierarchy is deleted. The hierarchy is wrong, and a new hierarchy will be added. The new hierarchy is added with a CIN and document command as ADD.

HIERARCHY_LINK_CORRECTION	Hierarchy link correction	Hierarchy is being deleted for a correction to hierarchy links.
PUBLICATION_WITHDRAWAL	Publication Withdrawal	Hierarchy is being withdrawn from publication to a trading partner.

3.7 Confirmations

3.7.1 CIC

A Catalogue Item Confirmation (CIC) can be sent from the data recipient to the data source as verification that the data recipient has received the CIN, and as a feedback on the CIN. The CIC is not

mandatory, but it is recommended that the data recipient sends CICs. The feedback can be positive (status “Accepted” or “Synchronized”) or negative (status “Review” or “Rejected”):

- **Accepted** – The CIN follows the data recipient’s specific rules, but no business decision has been made on the data.
- **Review** - The data recipient has opinions on the trade item and requests that the data source changes or corrects the trade item characteristics.
- **Rejected** - The data recipient is not interested in this trade item information and does not want to receive any more CIN for it.
- **Synchronized** – item information is approved by the data recipient and is integrated into the data recipient’s internal systems.

When to expect a CIC message:

- For every sent CIN, one data recipient can send several CIC messages, each with different or the same status.
- The CIC can be positive from one data recipient but negative from another.
- The data recipient can choose to send only positive or only negative CIC messages.
- The data recipient can choose to not send CIC messages, thus this is not mandatory.
- If no specific data recipient is chosen, a CIC can be sent from any data recipient that subscribes on the trade item data.
- The CIC messages can be sent at any time, even a long time, after the CIN was sent.

3.7.2 GS1 Response

GS1 Response indicates the processing success of transactional unit of work. It is not a transaction or a command or a document, but an indicator of the acceptance of a processed transaction.

ResponseStatusCodes:

- REJECTED, is used to indicate back to the sender of the original (requesting) message various errors that might occur while processing the message at the recipient side.
- ACCEPTED, is used to indicate that the message was accepted by the recipient side.
- MODIFIED, this code value is not sent by Validoo Item and will not be treated if received inbound.
- NO_ACTION, this code value is not sent by Validoo Item and will not be treated if received inbound.

3.8 Process end

The process ends with the following terminal conditions [TC1]:

- [TC1] The data recipient has processed the CIN.

4 Description of subscription process

The data recipient can create subscriptions for trade item information from their own environment depending on if the data recipient wants to receive trade item information from specific

- Target market (T3783) and one or more of the following are mandatory:
  - Information provider of trade item, GLN (T1124)
  - Classification category code (T0280)
  - Trade item identification, GTIN (T0154)

The subscription process is summarized in ***Fig 2*** and described in detail below. The messages are described in the section 5 Messages.

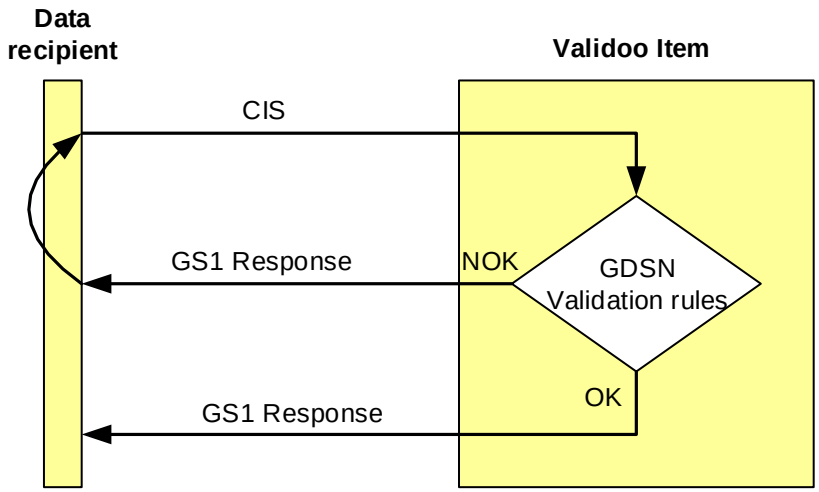

Fig 2. *Summary of the communication between data recipient and Validoo Item for the subscription process.*

4.1 Process preconditions

Before the process can start, the following initial conditions, [IC], must be fulfilled:

- [IC1] The data recipient have a business need to create a new subscription or delete, change or correct an existing subscription.

4.2 Process start

The process starts when the data recipient chooses which type of criteria to apply to the subscription, and decides to register a subscription to Validoo Item.

4.3 Process implementation

1 The data recipient creates a Catalogue Item Subscription (CIS).

2 The data recipient sends the CIS to Validoo Item.

3 Validoo Item validates the CIS according to the GDSN Validation rules.

4 Validoo Item sends a validation report to the data recipient. The validation report shows if the validation of the CIS according to the GDSN Validation rules is not approved (NOK) or approved (OK). The validation report also specifies the errors if the CIS is not approved.

a) Validation NOK – Validoo Item sends the validation report GS1 Response to the data recipient. The data recipient corrects the CIS and repeats the process from step 1.

b) Validation OK - Validoo Item sends the validation report GS1 Response to the data recipient.

5 Validoo Item stores the CIS by updating its subscription engine.

4.4 Process end

The process ends with the following terminal conditions [TC1]:

- [TC1] Validoo Item has stored or changed the subscription according to the received subscription messages.

5 Messages

This section describes the messages sent between the Data recipient, Validoo Item and the Data source when validating a Catalogue Item Notification message (CIN). All schemas for the messages are available at GS1 Sweden's website.

5.1 Standard Business Document Header (SBDH)

SBDH is used as an enveloping mechanism for all XML based exchanges. For more information, see the GDSN Operations Manual.

5.2 Catalogue Item Notification (CIN).

A CIN is a carrier message that carries information about one trade item hierarchy. The content owners at the different levels (Message, Transaction and Document command), plus the Information provider and Data recipient in a CIN message is specified in the example below.

5.3 GS1 Response

The GS1Response message informs about an approved validation and is described in detail in the current business document specification BDS.

5.4 Catalogue Item Confirmation (CIC)

The CIC message from Validoo item is a feedback on the CIN regarding the status according to the common Validoo Item validation rules or retailer specific rules. The status can be either "Review" or "Accept".

5.5 Catalogue Item Subscription (CIS)

The Catalogue Item Subscription is created by the data recipient when he has a business need to subscribe for specific trade item information.

5.6 Catalogue Item Hierarchical Withdrawal (CIHW)

A business message used to transmit trade item information from a data source or a data pool to a data recipient with the Global Data Synchronization Network with regards to a correction that is required to an item hierarchy that has already been synchronized.

6 Summary and examples

Validoo item validates a trade item hierarchy in stages

1 GDSN rules and Validoo rules

2 Recipient specific rules

Step 1 occurs when the trade item information arrives at Validoo item. This means that all the validation rules are common and the trade item hierarchy is validated irrespective of WHO the buyer

is. A validation report is sent for positive (GS1 Response) or negative (GS1 Response) and or (CIC Review). Incoming trade item information and the validation report are associated using the sequence number from the trade item information.

Trade item information is stored following step 2.

If a buyer has a subscription for all or some of a suppliers trade items, then the trade item information is sent to the buyer. If the trade item information is addressed as private to a specific buyer, then the trade item information will be sent to the buyer who have a subscription and are included in the supplier's addresses.

Step 2 occurs when the trade item information leaves Validoo item and is addressed to a specific buyer. This means that one buyer can reject a trade item hierarchy with a validation report (CIC REVIEW) while another can approve the same hierarchy with a validation report (CIC ACCEPT). The GLN of the buyer is used as the recipient GLN. Even if the buyer has recipient specific rules, it is always the buyer's GLN which is used in the term recipient GLN.

6.1.1 Example 1

Supplier A sends trade item information for a trade item hierarchy of three trade items to buyers X, Y and Z.

1. The lowest level is a jar of honey which is a consumer unit.
2. The second level is an outer package containing 10 jars of honey. It is this item which is the orderable unit in the hierarchy.
3. The highest level is a logistic unit with its package type set to pallet. The pallet height for the hierarchy is 1500 mm.

Validoo item has the following recipient specific rules:

- buyer X has recipient specific rules
- buyer Y has recipient specific rules
- Buyer Z does NOT have recipient specific rules.

The supplier chooses to send the trade item hierarchy to his buyers in separate messages (CIN). This means that the hierarchy is sent to Validoo item three times.

Let us assume that the CIN does not contain an indicator for which level is orderable. The trade item hierarchy will be rejected according to GDSN rule 312. Since the supplier has sent three versions of the same trade item hierarchy, he will receive three error messages showing that the hierarchy has been rejected on GDSN rule 312. Validation reports refer to the sequence number in the CIN.

The supplier corrects the message and sends the trade item information to Validoo item again.

Let us now assume that the CIN contains an incorrect packaging type which is not found in the relevant code list. The trade item hierarchy will be rejected according to Validoo rule 730119. Since the supplier has sent three versions of the same trade item hierarchy, he will receive three error messages showing that the base unit has been rejected with error code 730119.

The supplier corrects the message and sends trade item information to Validoo item again.

Since the trade item hierarchy has now passed all GDSN and Validoo rules and buyers X, Y and Z all subscribe to supplier A, three different outbound messages will be created for the respective buyers.

Buyer Z has no recipient specific rules, so the trade item hierarchy will be sent and a CIC ACCEPT sent from Validoo item to the system used by a supplier A.

Buyer Y permits pallet heights of up to 1250 mm. The supplier has agreed in advance with buyer Y that the trade item hierarchy in question may have a pallet height of 1500 mm. Buyer Y has made an exception (so-called dispensation) to his recipient specific rules for this trade item hierarchy. The trade item hierarchy is sent to the buyer Y and a CIC ACCEPT sent from Validoo item to the system used by a supplier A.

Buyer X permits pallet heights of up to 1250 mm. The supplier has spoken in advance to buyer X who has not agreed that the trade item hierarchy in question may have a pallet height of 1500 mm. The trade item information is therefore rejected and a CIC REVIEW sent from Validoo item to the system used by a supplier A.

6.1.2 Example 3

Supplier A sends trade item information for a trade item hierarchy of three trade items to buyers X, Y and Z.

1 The lowest level is a jar of honey which is a consumer unit.

2 The second level is an outer package containing 10 jars of honey. It is this item which is the orderable unit in the hierarchy.

3 The highest level is a logistic unit with its package type set to pallet. The pallet height for the hierarchy is 1500 mm.

Validoo item has the following recipient specific rules:

- Buyer X has recipient specific rules
- Buyer Y has recipient specific rules
- Buyer Z does NOT have recipient specific rules.

The supplier chooses to send the trade item hierarchy to his buyers in a single message (CIN). This means that the hierarchy is sent to Validoo item once.

Let us assume that the CIN does not contain an indicator for which level is orderable. The trade item hierarchy will be rejected according to GDSN rule 312. Since the supplier has sent one version of the trade item hierarchy, he will receive one error message showing that the hierarchy has been rejected on GDSN rule 312. The validation report refers to the sequence number in the CIN.

The supplier corrects the message and sends the trade item information to Validoo item again.

Let us now assume that the CIN contains an incorrect packaging type which is not found in the relevant code list. The trade item hierarchy will be rejected according to Validoo rule 730119. Since the supplier has sent one version of the trade item hierarchy, he will receive one error message showing that the base unit has been rejected with error code 730119. The reference is to the top item's GTIN.

The supplier corrects the message and sends trade item information to Validoo item again.

Buyer Z has no subscription, so a CIC REVIEW with error code 730298 will be sent with the following text: Addressed Data recipient (T3809) with GLN xxxxxxxxxxxxx has no subscription on your item.

Since the trade item hierarchy has now passed all GDSN and Validoo rules and buyers X and Y subscribe to supplier A, two different outbound messages will be created for the respective buyers.

Buyer Y permits pallet heights of up to 1250 mm. The supplier has agreed in advance with buyer Y that the trade item hierarchy in question may have a pallet height of 1500 mm. Buyer Y has made an exception (so-called dispensation) to his recipient specific rules for this trade item hierarchy. The trade

item hierarchy is sent to the buyer Y and a CIC ACCEPT sent from Validoo item to the system used by a supplier A.

Buyer X permits pallet heights of up to 1250 mm. The supplier has spoken in advance to buyer X who has not agreed that the trade item hierarchy in question may have a pallet height of 1500 mm. The trade item information is therefore rejected and a CIC REVIEW sent from Validoo item to the system used by a supplier A.

6.1.3 Example 4

- The difference between addressing trade item information as private or public.
- A supplier who chooses to send his trade item information as public means that all recipients who subscribe to this target market, supplier and classification category will receive the trade item information.
- A supplier who chooses to send his trade item information as private means that only those recipients who are addressed receive the information. This assumes however that the addressed buyer has a subscription to the supplier's products or the actual trade item.

7 Code lists

Code lists can be downloaded in an XML structure through http://www.gs1.se/sv/GS1-i-praktiken/kodlistor-3.1/. Validoo recommend that the code lists are downloaded automatically one time each day since this will allow the system (solution provider) to always have updated codes and definitions.