Measurement of service level

Please be aware that this document may contain hyperlinks to reference pages /document. These pages / documents will not automatically attach if you choose to print the main document.
# Table of Contents

Measurement of service level ................................................................. 3  
  Service Level – Purpose, types of target measures and assumptions .......... 4  
  Definitions – Priority target measures .................................................. 4  
  Definitions – Combined target measures ............................................... 6  
Invoicing ........................................................................................................ 8  
  Invoicing ................................................................................................. 8  
  Use of EDI in the retail trade .................................................................... 8  
Measurement of service level ................................................................... 10  
  Service Level – Purpose, types of target measures and assumptions .......... 11  
  Definitions – Priority target measures .................................................... 11  
  Definitions – Combined target measures ............................................... 13
Measurement of service level

Good service level in the entire value chain is today a prerequisite for rational and competitive product flow, which in turn assumes that the performance can be measured and followed up. Measurement and evaluation of service levels are crucial to prioritize and implement measures aimed at continuous improvements.

The parties are free to agree whether to measure the degree of service. If the parties agree to establish an agreement, STAND recommends that STAND’s definitions be used.

Areas affected by, and subject to guidelines from STAND are:

- Intentions for measurement of service level
- Target measures and the conditions that apply to these
- Definitions of different types of target measures, with examples
  - Priority target measures
  - Combined target measures
Service Level – Purpose, types of target measures and assumptions

Intentions for measurement of service level
Measurement of service levels is a topic that most players are concerned with and are an important element in the relationships between supplier and customer.

The parties are free to agree whether to measure the degree of service. If the parties agree to establish an agreement, STAND recommends that STAND’s definitions be used.

A challenge in relation to the exchange and evaluation of service level data has been that the trading partners often use different definitions and conditions for measurement and follow-up. The recommendation contains suggestions for target measures and common definitions for measuring service levels. The purpose is to establish a common platform as a basis for measurement, communication and mutual evaluation of performance.

Joint exchanges of measurement results, based on the proposed definitions, could contribute to improved service levels and contribute to increased understanding of the parties’ views on customer and delivery services.

Target measures are based on DLFs (Dagligvaruleverantörers Förbund) and DULOGs (Dagligvaruhandelns Utvecklings- och Logistikgrupp ) common definitions, established in Sweden in 1998. With this as a base as well as experience from companies with international relations, the prioritized definitions build upon the need for common understanding, measurement and evaluation of cross-border service.

With continuous follow-up, development and trends can be monitored over time. This will probably be more interesting than single results. Greater trend deviations are when warning signals and improvement programs should be implemented to reduce the likelihood that a similar situation will arise in the future.

Target measures

The recommendation describes 6 different target measures, of which STAND recommends that 3 of these are prioritized, as these can be quickly implemented in today’s systems. Other target measures are composed of different combinations of priority targets.

Selection of target measures is done by the parties themselves and described in bilateral agreements.

Priority target measures:
- Correct quantity
- Correct time
- Correct administration

Combined target measures:
- Delivery of Order – Availability
- Complete orders at the right time
- The perfect order

The target measures can be used by both the customer and the supplier for follow-up of each other’s performance.

Prerequisites for target measures and definitions

Measure
In the measurements, the unit of measurement is described as “sales unit”. It is recommended that Stock Keeping Unit (SKU) is used as a sales unit. Stock Keeping Unit (SKU) is established in most systems and is the base for transactions; ex. ordering, delivery, billing etc. to the store.

Consumer Units (CU) as a unit of measurement, however, should be the vision and goal of the future, as the Consumer Unit (CU) is the unit of measurement that is uniform and shared throughout the value chain.

Agreement on measurement of service level
Which target measures to use and what definitions should apply should be anchored in a bilateral agreement. The agreement can regulate conditions such as:

- Accrual
- Lead times
- Assortment
- Time frame
- How the exchange of measurement results should take place
- Where and when the measurement should take place for the measurement points associated with the priority target measure “Correct time”
- Duration of measurements. In choosing definitions, the parties must agree on the degree of service to be calculated over time or in relation to a contracted number of orders

Definitions – Priority target measures

STAND Settlement
The target measures are based on three important dimensions in the term “service level”:

- Quantity – availability
- Time – reliability
- Administration – security

The priority targets measures should be followed and evaluated continuously with focus on level, trends and development.

**Target measures Correct quantity – availability**

The target measure “Correct quantity” measures availability as precision in quantity delivered.

**Definition:**

\[
\text{Number of delivered sales Units} \quad \text{Quantity of ordered sales Units} = \text{Availability}
\]

The quantity ordered is the amount that the customer initially ordered. Not delivered quantity represents deviations in delivery.

**Target measure At the right time – reliability**

The target measure “At the right time” measure reliability as precision in delivery time.

The target measure is used to measure compliance with time limits defined in the agreement between the parties. The target measure can be used along several dimensions in the value chain. Examples may be if orders are sent at the right time, if order confirmations are sent at the right time, if delivery is picked up at the right time, if Despatch Advice is sent at the right time, etc.

**Definition (with example order):**

\[
\text{Number of late or early delivery orders} \quad \text{Total quantity of orders} = \text{Reliability}
\]

Delayed or premature is determined by whether exchange / delivery is within the agreed time frame. At Incoterms Ex Works delivery terms, the assessment of the supplier’s reliability is on the supplier’s ramp. The delivery is received when the order / delivery etc., is acknowledged for.

**Target measures Correct Administration – Security**

The target measure “Proper Administration” measures security as compliance between what is ordered in the order and what has been delivered and has been invoiced, that is, the correct product without errors and with the correct documentation.

**Definition:**

\[
\text{Quantity of orders without credit / debit notes} \quad \text{Total quantity of orders} = \text{SAFETY}
\]

Correct administration means that Despatch Advice, shipping notes, invoices etc. are complete and error-free in relation to the delivery. Only credit and debit notes affecting physical delivery are included in the measurement. The target measure can also be used to measure the quality of orders from the customer.

Examples of calculation of service level for priority target measures can be found in the document.

Examples of priority target measures

Service level is measured in %

**Target measures Delivery Level Quantity – Availability**

If 100 sales units have been ordered and 98 sales units are delivered at first delivery, the service level is 98%.

**Target measure At the right time – Reliability**

If there are 10 orders placed for delivery at a specific date, the deliveries should have arrived at the specific dates / time slots and 1 of the deliveries arrive before or after the agreed date / time slot, the service level is 90%.

**Target measures Correct Administration – Security**

Example 1:

Out of 10 orders, 1 invoice has a price error. An invoice for another order contains items reported to the vendor with errors on arrival. The delivery on the third order is missing Despatch Advice. These 3 errors generate 3 credit notes / deviations and service level is 70%.

Example 2:

Out of 10 orders, 1 of the orders on the invoice has a price error on a product and another item on the same invoice has an error / defect reported to the supplier. If the errors can be corrected on a single credit note, the service level is 90%.
Definitions – Combined target measures

The priority target measures can be combined in different ways, to create Combined target measures.

STAND has defined 3 examples:

**Target measure Delivery Order – Availability**

The target measure “Delivery Order” gives the proportion of the orders that are properly delivered.

Definition:

<table>
<thead>
<tr>
<th>Quantity of complete orders delivered</th>
<th>= Level of Order Delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of orders ordered</td>
<td></td>
</tr>
</tbody>
</table>

A complete delivery order contains all ordered sales units, in the correct quantity

Availability will primarily be measured as the priority target measure “Proper Quantity – Availability”, but to calculate the combined measurements below, it is a prerequisite that “Delivery Order – Availability” is calculated.

**Complete orders at the right time – Availability & Reliability**

The target measure describes both accessibility and reliability in the interaction.

The target measure is composed of the target measures:

- Delivery of Order – Availability
- At the right time – Reliability.

Definition:

<table>
<thead>
<tr>
<th>Availability expressed per order</th>
<th>= Complete orders at the right time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantity of late or early delivery orders</td>
<td></td>
</tr>
<tr>
<td>Total quantity of orders</td>
<td></td>
</tr>
</tbody>
</table>

Only one error per. order is counted

The measurement of “Complete Orders at the Right Time” shall be done at the place of arrival. At Incoterms Ex Works delivery terms, this is the supplier’s ramp

**The perfect order**

This is the most demanding target measure and measures all types of deviations regarding complete orders.

The target measure is composed of three previously defined target measures:

- Delivery of Order – Availability
- At the right time – reliability
- Correct administration – Security

Definition:

<table>
<thead>
<tr>
<th>Quantity of complete orders delivered</th>
<th>= The perfect order</th>
</tr>
</thead>
<tbody>
<tr>
<td>late or early delivery orders</td>
<td></td>
</tr>
<tr>
<td>Orders with missing or incorrect documents</td>
<td></td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
<td>Total quantity of orders</td>
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Only one error per. order is counted

If both the supplier and the customer’s obligations are considered in the target measure, the target measure represents the performance that the parties create in common.

Examples of calculation of service level for combined target measures can be found in the document

Examples of combined target measures
Service level is measured in %

**Target measures Delivery Order – Availability**

Example 1:
If 10 orders are missing 1 sales unit in one order at the time of delivery, service level is 90%.

Example 2:
If there among 10 orders is missing 1 sales unit in one order and 50 in another order at delivery time, service level is 80%.

**Complete orders at the right time – Availability & Reliability**

Example 1:
If one of 10 orders ordered is missing 6 sales units in one order and another order is delayed, the Complete Order service level is 80%.

Example 2:
If there are 10 orders, 2 orders are out of time, and one of the orders that are not in time is also incomplete, the service level of complete order is 80%.

**The perfect order**

Example 1:
If there among 10 orders are missing one sales unit on one order. Another order is delivered too late. The third order has generated a credit note, the service level is 70%.

Example 2:
If there among 10 orders is missing 1 sales unit in one order and the same order is delivered prematurely. Another order of products has errors and has generated a credit note, the service level is 80%.
Invoicing

The sub process describes the requirements, recommendations and guidelines STAND has, which may be relevant for settlement for deliveries to a customer, regardless of the method of distribution.

The process is based on the fact that all documentation is exchanged by EDI.

This sub process consists of the following activities:

- Send invoice
- Receive invoice and send invoice receipt
- Receive invoice receipt

Areas affected by, and subject to guidelines from STAND are:

- How EDI is used in the retail trade in general and in the invoicing process in particular
- Requirements and content of EDI messages for
  - Invoice
  - Invoice receipt
- EDI exchange agreement
- Generic description of settlement process

Use of EDI in the retail trade

EDI – Electronic Data Interchange – Used in the retail trade industry to trade commercial documents like EDI order, EDI order receipt, EDI order confirmation, EDI Despatch Advice, EDI invoice and EDI invoice receipt.

EDI is available in various forms, from fully automated solutions where the entire process is carried out by both customer and supplier computers, for web solutions based on manual routines for information exchange.

EDI is used for all forms of distribution.

Overview of EDI messages and in which processes they are used

<table>
<thead>
<tr>
<th>PURCHASE</th>
<th>DELIVERY</th>
<th>SETTLEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Send Order</td>
<td>5. Receive and process Order Confirmation</td>
<td>9. Receive Invoice and send Invoice Receipt</td>
</tr>
<tr>
<td>2. Receive orders and send Order Receipt</td>
<td>4. Manage Order and order confirmation</td>
<td>8. Send Invoice</td>
</tr>
</tbody>
</table>

Which EDI messages to use vary with the form of distribution.

An overview of this, along with deadlines for when the messages are to be sent, are described in [EDI messages, distribution form and deadlines](#).

Before using EDI, it is necessary to clarify which messages are to be used, message formats, methods of exchange, electronic message addresses, etc. This is done in the [EDI Exchange agreement](#).

This also specifies other bilateral issues related to the exchange of EDI messages.

How to get started with EDI is described in [Implement EDI in the retail trade](#).

In order to use EDI, trading transactions must be translated into an EDI format. The following formats are available:

- Message description EANCOM for order, order receipt, order confirmation, Despatch Advice, invoice, invoice receipt
- Message description XML for order, order receipt, order confirmation, Despatch Advice, invoice, invoice receipt

Revisions of the EDI formats, is documented in [Change log current version vs. past versions](#).
Send and receive invoice and invoice receipt

Send invoice

Based on the products and quantity delivered, as well as other terms of sale and delivery, the supplier produces an invoice and sends it to the customer/invoice recipient.

Invoice must be sent by EDI unless otherwise agreed bilaterally.

One invoice shall only include delivery from one Despatch Advice.

At delivery terms Ex Works, one invoice will only deal with products delivered from one warehouse.

If credit note is sent, one credit note should only refer to one invoice.

Invoice must be continuously numbered, state the place of delivery, the invoice date and the name and address of the supplier and buyer. The invoice shall provide information about the product's name, quantity and price, as well as tax and fees.

Receive invoice and send invoice receipt

If the supplier desires/needs it, it can be agreed bilaterally that the customer will send an invoice receipt to the supplier as confirmation that the customer has received an invoice.

Invoice receipt shall be sent by EDI unless otherwise agreed bilaterally.

The invoice receipt is available in two versions; simple and advanced invoice receipt. Difference is the degree of detail on content. Which version used must be bilaterally agreed.

The following content may be included:

- Code that shows how the customer has processed an invoice
  - Received and controlled
  - Received but not checked
  - Not accepted
- Error code, which shows what is wrong if the customer has entered the code = Not accepted:
  - Incorrect invoice amount in relation to invoice documentation
  - Invoice received earlier
  - GLN error in the buyer's address field
  - No EDI agreement between the parties

One invoice receipt must cover only one invoice.

Invoice receipt can also be sent upon receipt of a credit note. Same rules as for invoice apply.

Receive invoice receipt

How the invoice receipt is used by the vendor in their internal systems is not covered by the STAND Guidelines.
Measurement of service level

Good service level in the entire value chain is today a prerequisite for rational and competitive product flow, which in turn assumes that the performance can be measured and followed up.

Measurement and evaluation of service levels are crucial to prioritize and implement measures aimed at continuous improvements.

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Definitions – Priority target measures
The target measures are based on three important dimensions in the term “service level”:

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**Target measures Correct quantity – availability**

The target measure “Correct quantity” measures availability as precision in quantity delivered.

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**Definition (with example order):**

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**Target measures Correct Administration – Security**

The target measure “Proper Administration” measures security as compliance between what is ordered in the order and what has been delivered and has been invoiced, that is, the correct product without errors and with the correct documentation.

**Definition:**

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Examples of calculation of service level for priority target measures can be found in the document.
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The priority target measures can be combined in different ways, to create Combined target measures.

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**Complete orders at the right time – Availability & Reliability**

The target measure describes both accessibility and reliability in the interaction.

The target measure is composed of the target measures:

- Delivery of Order – Availability
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This is the most demanding target measure and measures all types of deviations regarding complete orders.

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- At the right time – reliability
- Correct administration – Security

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Examples of combined target measures
Service level is measured in %

**Target measures Delivery Order - Availability**

Example 1:
If 10 orders are missing 1 sales unit in one order at the time of delivery, service level is 90%.

Example 2:
If there among 10 orders is missing 1 sales unit in one order and 50 in another order at delivery time, service level is 80%.

**Complete orders at the right time - Availability & Reliability**

Example 1:
If one of 10 orders ordered is missing 6 sales units in one order and another order is delayed, the Complete Order service level is 80%.

Example 2:
If there are 10 orders, 2 orders are out of time, and one of the orders that are not in time is also incomplete, the service level of complete order is 80%.

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Example 1:
If there among 10 orders are missing one sales unit on one order. Another order is delivered too late. The third order has generated a credit note, the service level is 70%.

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