



Key Performance Indicators for LSPs

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FOREWORD

This document provides common definitions of standardized key performance indicators to measure logistics performance of Carriers & Logistics Service Providers (LSPs).

To avoid each party creating their own Logistics Key Performance Indicators, Odette's Logistics Functional Committee identified the need to develop common KPIs. A Logistics Key Performance Indicators Project Group was formed for this purpose. The group's mission was to define and promote common indicators and a common understanding between the parties in line with the Global Carrier and LSP Evaluation recommendation. The overall objective is to increase performance and decrease costs in the Supply Chain.

This recommendation for Carriers & LSPs complements an already existing recommendation from Odette and AIAG regarding the use of KPIs between Material Suppliers and OEMs (KPI for GMML), published in December 2006.

Each indicator defined in the KPI for GMML recommendation is applicable for LSPs and only sub criteria on Delivery documents ("Parts delivered without Delivery note or ASN" and "Specific delivery documents missing") are applicable for carriers.

Using standard KPIs for logistics performance for all parties will mean a reduction in costs and an increased understanding of responsibilities.

The KPIs defined in this document are complementary to the Global Carrier and LSP Evaluation Tool, and measure the effectiveness of the logistics processes between parties.

Each company may use its own unique performance measurement system; however, the standard indicators specified in this recommendation should form the basis of those performance systems. The parties may require additional KPIs.

An Agreement between the parties should be in place before this recommendation is deployed, as the KPIs should be used to measure the compliance of the Agreement.

The scope of this document covers supply chain management processes between Carriers, LSPs, Material Suppliers and OEMs. The recommendation does not include internal logistics performance at Material Suppliers and OEMs.

Definitions of terms used in this document can be found in the Odette Glossary and Global Carrier & LSP Evaluation Tool.

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Chap 1	General Features

1 GENERAL FEATURES

1.1 Objectives

This recommendation defines standard key performance indicators for Carriers & LSPs. Common indicators will facilitate understanding between business partners, and align with the Global Carrier and LSP Evaluation.

1.2 Goal and Benefits

Using standard indicators for logistics performance will for all parties mean:

- less cost for measurement since focus will be on the most important KPIs identified
- common understanding of the KPIs which means
 - o less cost for developing KPIs
 - o less cost for measuring KPIs
 - o less cost for interpretation of KPIs
- increased understanding of each ones role/responsibility in the supply chain
- less cost due to that improvement areas are more easily identified

The objective of the recommendation is not to standardize performance systems within the industry but to harmonize the indicators used for Carriers & LSPs.

Using this recommendation, a party can fulfil internal objectives while using indicators common to the industry that are better understood by all parties.

1.3 Scope

The following defines the scope of this project.

- In scope:
 - To define and promote common indicators with common understanding between Suppliers, Carriers, LSPs and OEMs with reference to the future Global Carriers & LSPs Evaluation Tool regarding inbound logistics (F3 questions).

Note: The KPIs can be used at any point in the supply chain (e.g. between different carriers, between carriers and LSPs, between tier N and tier N+1)

- Out of scope:
 - Internal logistics performance at Material Suppliers and OEMs.
 - outbound logistics (finished vehicles and spare parts to dealers)

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Chap 1	General Features

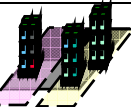
1.4 The role of KPIs for Carriers & LSPs in relation to other global Recommendations

'KPIs for Carriers & LSPs' is the basis for measuring logistics performance in accordance with an Agreement between the parties.

These measurements are complementary to Global Carrier and LSP Evaluation Tool, which supports a party's self-evaluation of its logistics capability. KPIs for Carriers & LSPs measure the effectiveness of the logistics processes between parties. The KPIs are also a complement to the recommendation from Odette and AIAG regarding KPIs between Material Suppliers and OEMs.

A mapping exercise has been undertaken that relates the contents of the KPI for Carriers & LSPs to the Global Carrier and LSP Evaluation.

1.5 Where to measure the KPIs

Where should a company measure KPIs for Carriers & LSPs?								
Location	Process	Activities	Arrival Precision	Pick up discrepancy Alert	Number of incidents	Late delivery Alert	Filling rate	Stock Accuracy
	Collect at suppliers		X	X		X		
	X Dock	Receiving	X		X	X	X	
		Despatch	X	X		X		
	Logistics Centre/HUB	Receiving	X		X	X	X	
		Storage						X
		Despatch	X	X		X		
	Delivery at the customer		X		X	X	X	

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Chap 2	Application Conditions

2 APPLICATION CONDITIONS

2.1 Agreement

An Agreement should be in place before this recommendation is used because the KPI for Carriers & LSPs should be used to measure the compliance of the Agreement. Therefore, the aspects measured by the KPIs for Carriers & LSPs must be defined within the Agreement.

2.2 Communication between the parties

Results of Indicator Measurements

The party responsible for measuring must communicate the results to the other parties.

The frequency and method of communication must be defined for each indicator in the Agreement.

- Recommended frequency: Monthly (except for KPI No. 6)
- Recommended communication method: A Web-based portal application

A detailed examination of the results is required in the following cases:

- Disagreement between parties regarding performance results
- Performance below the target defined in the Agreement
- Complementary actions taken over a given period in order to
 - Identify the causes for the discrepancy and/or
 - Implement continuous improvement action plans.
- Incidents/Non-conformity

In the case of a repetitive or major non-conformity, communication must be escalated between the parties and include the following steps:

- The party having negative impact sends an incident/non-conformity report with description and consequences to the party causing the negative impact as soon as the non-conformity or incident occurs.
- The party causing the negative impact establishes an immediate action plan to resolve the consequences of the incident /non-conformity.
- The party causing the negative impact and possibly the party having the negative impact identify the root cause.
- The party causing the negative impact and possibly the party having the negative impact define an action plan to permanently resolve the problem.
- The party causing the negative impact confirms the effectiveness of the definitive action plan and updates procedures and work instructions.
- The party having the negative impact approves the resolution and closes the incident/non-conformity.

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Chap 2	Application Conditions

All communications must be carried out within the lead-time specified in the Agreement.

In order to communicate incident and non-conformity information effectively, the parties agree upon a standard format for defining problem resolution (e.g. Problem Resolution Report (PRR), 8D, etc.).

Each step can be adapted to individual company requirements.

3 INDICATORS

All described measures the fulfilment of the mutual agreements made between the Material Supplier, OEM and Carrier/LSP, but do not different service levels. For example, if an agreed time slot for arrival is 15 minutes or 2 hours, it will not be reflected in the KPI for arrival precision. These two service levels can have 100% precision although it probably is more difficult to deliver within the shorter time slot if the transport is long distance. It is therefore sometimes difficult to compare the performance of two companies.

The KPIs can also be used between different Carriers/LSPs involved in the supply chain and between 1st tier and 2nd tier Material Suppliers, and between 2nd tier and 3rd tier Material Suppliers and so on.

All KPIs should be broken down, e.g. per Carrier/LSP, OEM, Material Supplier, flow, market, transport mode in order to identify improvement areas.

The general assumption is that a good result in KPIs means an efficient supply chain which reduces the total cost, even if the KPIs as such are not measuring the cost.

The recommendation is that reason codes for deviations are used in alignment with the Agreement. (E.g. status list according to UN recommendation No. 24).

In order to reduce measurement costs it is recommended that IS/IT tools are used.

The following table lists all the indicators and a brief explanation of the criteria and sub-criteria that are described in this document.

No.	Indicator	Main Criteria	Sub Criteria
1	Arrival Precision	Time	Carrier arrives within agreed time window
2	Pick up discrepancy Alert	Alert	Carrier / LSP alerts (addresses pick up discrepancies)
3	No. of incidents	Security	Carrier / LSP handles goods properly
4	Late delivery Alert	Alert	Carrier alerts (addresses late delivery)
5	Filling rate in transport equipment	Efficiency	Transport equipment is efficiently used
6	Stock accuracy	Security	LSP handles goods properly

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Chap 3

Indicators

3.1 Arrival Precision

Purpose:	To secure the receiving/loading process
Definition:	Total No. of shipment arrivals within agreed time windows in relation to total No. of shipment arrivals
Target:	According to agreement
Calculation:	$\frac{\text{Total No. of shipment arrivals within agreed time windows}}{\text{Total No. of shipment arrivals}} \times 100$
Frequency:	Monthly
Reporting date:	Within 2 weeks after closing of reported month
Applicable:	If agreement exists regarding service level
Measurement by:	Consignee, unless otherwise agreed
Link to F3 Question:	1.2.2.1
Comments:	Reason code for deviations should be established in alignment with the Agreement between the parties
Example:	Agreed time window: 11-12 a.m. Wednesday Agreed target: minimum 99,9% No. of shipment arrivals within agreed time window during May: 990 No. of shipment arrivals during May: 1000 Rate: $\frac{990}{1000} \times 100 = 99\%$

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Chap 3	Indicators

3.2 Alert of pick up discrepancy Alert: physical check of booked quantity against actual loaded

Purpose:	To address emergency actions and thereby minimize production disturbances
Definition:	Total No. of alerts (addressed pick up discrepancies) within agreed time in relation to total No. of pick up discrepancies
Target:	According to agreement
Calculation:	$\frac{\text{Total No. of alerts within agreed time}}{\text{Total No. of pick up discrepancies}} \times 100$
Frequency:	Monthly
Reporting date:	Within 2 weeks after closing of reported month
Applicable:	If agreement exists regarding service level
Measurement by:	Customer unless otherwise agreed
Link to F3 Question:	2.3.3.1, 4.1.3.1, 4.1.3.2, 4.3.2.2, 6.2.1.1, 6.3.1.2
Comments:	Reason code for deviations should be established in alignment with the Agreement between the parties
Example:	Total No. of alerts within agreed time: 135 Total No. of pick up discrepancies: 150 Alert of pick up discrepancies: $135/150 = 90,0\%$

3.3 No. of Incidents (e.g. damaged, missing)

Purpose:	To ensure that the goods are properly handled and thereby minimize production disturbances
Definition:	Total No. of orders with anomaly in relation to total No. of orders
Target:	According to agreement

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Indicators

Calculation:	$\frac{\text{Total No. of orders with anomaly}}{\text{Total No. of orders}} \times 100$
Frequency:	Monthly
Reporting date:	Within 2 weeks after closing of reported month
Applicable:	If agreement exists regarding service level
Measurement by:	Customer unless otherwise agreed
Link to F3 Question:	6.2.1.1
Comments:	- Reason code for deviations should be established in alignment with the Agreement between the parties and the following codes are recommended as a base (status codes according to UN recommendation No. 24): - code 87: despatched via wrong route - code 117: missing - code 120 unacceptable condition - code 218: damaged - code 309: packaging opened - Order could be transport order or THU (transport handling unit) passing the X-dock
Example:	For the month of May, the situation is as follows: - 250 incidents incurred - No. of orders: 1000 Normal rating: $\frac{\text{Total No. of orders with anomaly}}{\text{Total No. of orders}} \times 100$ $\frac{250}{1000} \times 100 = 25\%$

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Chap 3

Indicators

3.4 Late delivery Alert

Purpose:	To address emergency actions and thereby minimize production disturbances
Definition:	Total No. of shipment alerts (addressed late deliveries) within agreed time in relation to total No. of late shipment deliveries
Target:	According to agreement
Calculation:	$\frac{\text{Total No. of shipment alerts within agreed time}}{\text{Total No. of late shipment deliveries}} \times 100$
Frequency:	Monthly
Reporting date:	Within 2 weeks after closing of reported month
Applicable:	If agreement exists regarding service level
Measurement by:	Customer unless otherwise agreed
Link to F3 Question:	2.3.3.1, 4.1.3.1, 4.1.3.2, 6.2.1.1, 6.3.1.2
Comments:	Reason code for deviations should be established in alignment with the Agreement between the parties.
Example:	A: count the No. of shipments that arrived late during the month (arrival time > 60' agreed time) = 157 B: Count the No. of alerts (announcements), whatever the reason for the delay (announcement to be sent before agreed time for truck arrival) = 94 Rate: $\frac{B}{A}$ Rate: $\frac{94}{157} \times 100 = 60\%$ Target: 100%

3.5 Filling rate in transport equipment

Purpose:	To measure the efficiency in loading and thereby reduce the cost and environmental impact
Definition:	Total volume (e.g. m ³) loaded on transport equipment in relation to total volume (e.g. m ³) available on transport equipment
Target:	According to agreement
Calculation:	$\frac{\text{Total volume (e.g. m}^3\text{) loaded on transport equipment}}{\text{Total volume (e.g. m}^3\text{) available on transport equipment}} \times 100$
Frequency:	Monthly
Reporting date:	Within 2 weeks after closing of reported month
Applicable:	If agreement exists regarding service level
Measurement by:	As agreed but either Carrier or Customer, unless otherwise agreed
Link to F3 Question:	1.2.2.2
Comments:	Weight restriction has to be considered
Example:	Total m³ loaded on transport equipment during the month of May = 6.000 m³ Total m³ available on transport equipment during the month of May = 8.000 m³ Rate: $\frac{6.000}{8.000} \times 100 = 75\%$ Target: 85%

3.6 Stock Accuracy

Purpose:	To secure proper process for handling units within a Warehouse/Logistic Centre and thereby minimize production disturbances
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Definition: Total stock units discrepancy in inventory (e.g. cells, part number) in relation to total stock units estimated

Target: According to agreement

Calculation:
$$\frac{\text{Total stock units discrepancy in inventory}}{\text{Total stock units estimated}} \times 100$$

Frequency: According to agreement

Reporting date: Within 2 weeks after closing of reported month

Applicable: If agreement exists regarding service level

Measurement by: LSP, unless otherwise agreed

Link to F3 Question: 5.1.1.3, 5.1.1.4, 5.2.4.1

Comments:

- Reason code for deviations should be established in alignment with the Agreement between the parties.
- All discrepancies in units have to be addressed immediately when recognized (missing, found, damaged)
- Both positive and negative discrepancies are measured as positive (absolute value)

Example: Cycle accounting carried out at May 31st.

	Estimated	Actual	Difference
Inventory by Slot			
Cell 1	500	500	0
Cell 2	2000	1600	400
Cell 3	3500	3700	200
Cell n	0	0	0
Total inventory Slot (A)	6000	5800	600
	Estimated	Actual	Difference
Inventory by Part number			
Part number 1	800	800	0
Part number 2	1200	800	400
Part number 3	4000	4200	200
Part number n	0	0	0
Total inventory by part number (B)	6000	5800	600
Total (A+B)	12000	11600	1200 (E)
Rate (E/C)	(C)	(D)	10,0000%

The difference is always a positive quantity

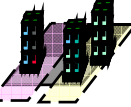
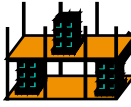
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Chap 4

Use of KPI for Carriers & LSPs - Summary

4 USE OF KPIs for KPI FOR CARRIERS & LSPS – SUMMARY

Table below shows where KPIs are measured.

Where should a company measure KPIs for Carriers & LSPs?								
Location	Process	Activities	Arrival Precision	Pick up discrepancy Alert	Number of incidents	Late delivery Alert	Filling rate	Stock Accuracy
	Collect at suppliers		X	X		X		
	X Dock	Receiving	X		X	X	X	
		Despatch	X	X		X		
	Logistics Centre/HUB	Receiving	X		X	X	X	
		Storage						X
		Despatch	X	X		X		
	Delivery at the customer		X		X	X	X	