Global Materials Management and Logistics Key Performance Indicators

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MANAGER INBOUND TRANSPORT DEVELOPMENT

VOLVO CARS
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Introduction

To avoid each automotive company creating its own Logistics Performance Indicators (LKPI), Odette’s Logistics Functional Committee identified the need to have common Logistics KPIs. A Project group was formed for this purpose in July 2004;

*Mission:*

To define and promote common indicators and common understanding between the Trading Parties for Parts supply in line with the Global MMOG/LE recommendation to increase performance and decrease cost in the Supply Chain.

*Mission complete August 2005*
In June 2005, a joint global AIAG/Odette team was formed to create a global document.

<table>
<thead>
<tr>
<th><strong>Odette</strong></th>
<th><strong>AIAG</strong></th>
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<tbody>
<tr>
<td>Basi Lopez</td>
<td>Morris Brown</td>
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<tr>
<td>Damien Derlot</td>
<td>David Gonsalvez</td>
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<td>David Fernandez</td>
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<td>Gerhard Paulinz</td>
<td>Chuck Koehn</td>
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<td>Jacky Cousin</td>
<td>Sheila Manning</td>
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<td>Jan De Wit</td>
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<td>Jeff Turner</td>
<td>Steve Paul</td>
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<td>Francisco Reseco</td>
<td>Tim Piniatoglou</td>
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<td>Oscar Fredell</td>
<td>Todd Pronge</td>
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<td>Paul Johnson</td>
<td>Darrell Schwartz</td>
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<td>Philippe Mandelier</td>
<td>Jennifer Yankee</td>
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<td>Sebastian Kirchert</td>
<td>Bosch</td>
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<td>Sergio Simoes</td>
<td>PSA Peugeot Citroën</td>
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<td>Thierry Koscielniak</td>
<td>GALIA</td>
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<tr>
<td>Valerie Gautsch</td>
<td>Nissan Europe</td>
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</table>
Why standard KPIs?

- Using this recommendation, a company can fulfill internal objectives while using indicators common to the industry that are better understood by Suppliers and Customers.
- The objective of the recommendation is not to standardize Supplier delivery performance systems within the industry but to harmonize the indicators used in Supplier delivery performance systems.

For the suppliers:

- by harmonizing measurements of logistics performance within the industry

For the customer:

- by facilitating the development or the enhancement of Supplier appraisal systems based on standard indicators

The recommendation is a complement to the Global MMOG/LE.

- Global MMOG/LE supports self-evaluation of a plant’s logistics capability
- MMLKPIs measure the effectiveness of the logistics processes between parties
Example of benefits

Improving the **supplier delivery accuracy** enables to **improve customer delivery accuracy**

Improving the **supplier delivery accuracy** enables to **reduce stock level**

Improving **quality of ASN** enables to **reduce receiving cost**

Improving **quality of labels** enables to **improve inventory accuracy** (mislabelling…)

Improving **respect of packaging specification** enables to **reduce labor over cost** (repackaging…)


Role of the recommendation

The LKPI recommendation defines standard indicators measuring the **effectiveness** of the logistic shipping processes of the Supplier.

*It measures the adherence to the logistics agreement.*
Description of the indicators

The adherence to the Logistics Agreement is measured by 6 indicators

- **LKPI 1** EDI Precision
- **LKPI 2** Delivery Accuracy
- **LKPI 3** Production disruptions
- **LKPI 4** VMI
- **LKPI 5** Material Handling & Identification
- **LKPI 6** Communication & Cooperation

Diagram:
- Supplier Dock
- ASN
- Customer Dock
- Wharehouse
- Prod. Line
- VMI Dock

Legend:
- Green boxes represent indicators.
- Green arrows indicate the flow of information.
- Grey boxes represent components of the logistics system.

Diagram: [Image of a logistics flowchart with indicators and components labeled as described.]
EDI Precision

**Definition:** EDI precision measures the Presence and Accuracy of ASNs

**Presence:**

Two things must function in order to receive EDI messages correctly:
1. The EDI communication must work.
2. The syntax (structure) of the data in the received file must be correct.

```
UNB+UNOA:1+00013000015BEHR2:OD....
' UNH+1+AVIEXP:3:OD '
  MID+823057+030709:0945'
  CDT+:::BX35D'
  SDT+::: BX35D '
  CSG+:::BS8CA+086+086GIBBS'
  DTR+GP~K8 771+GHEMAR~S'
  ARD+30636905+3:PC
```

**Accuracy:**

3. The actual data must be correct compared to the real shipment
Delivery Accuracy

Definition:

- The Delivery Accuracy indicator measures the compliance of the order regarding quantity and time, according to Logistics Agreement and the supply conditions.

- Scope: The indicator can be applied when the call-off is expressed in terms of firm quantity & time slot.

- For each part number, with a quantity, a time slot and the place to deliver agreed between parties, the order is classified
  - as OK if all criteria (quantity, time slot, place to deliver) are OK
  - as not OK if any of those have failed
Production Disruptions

- **Missing part at point of fix**
  - **Line stop**
  - **Incomplete unit at the end of the line**
  - **Incomplete unit caught back before end line**

- **Procurement alert**
  - **Missing part Anticipation**

- **Units on hold in the physical flow**
  - A sequencing modification occurs when the normal unit flow at the entry of the production shop must be changed, retaining some units, in order to avoid a missing part, an incomplete units or a line stop.
  -Expressed in number of units on hold in the production flow.

- **Line stops measured in number of units lost for OEM and in number of men hours (tbc) lost for suppliers**

- **A unit is accounted as an incomplete unit if a part is missing at point of fix when the unit requires the part for assembly.**
  - Expressed in number of units.
Vendor Managed Inventory

Definition

Indicator based on stock alerts. Stock is measured at each stock movement:

3 types of alerts (in order of gravity):

- > Max
- < Min
- zero stock

![Diagram of vendor managed inventory](image)
Material Handling & Identification

Definition:

- The Material handling and identification indicator measures **4 types of specifications**:
  - Packaging specification
  - Labelling specification
  - Delivery document specification
  - Transport specification

- Demerit-points are associated at each non-conformity.
Communication & Cooperation

Definition:
Measures the Supplier performance on the following processes:
- Reception of Customer requirements
- Handling of logistics incidents
- Cooperation with logistics projects

• **Self-sufficiency**: Capacity of a Supplier to understand and apply the logistics processes as defined in the Logistics Agreement

• **Reliability**: Quality of the effectiveness of the action plan

• **Responsiveness**: Conformity with the required time set by counting late response

• **Supplier Problem notification**: Ability to notify problems in advance

• **Availability**: Facility to contact the Supplier’s contact person

• **Flexibility**: Flexibility of the Supplier in case of order changes
## MMLKPI
### Global Materials Management and Logistics Key Performance Indicators

<table>
<thead>
<tr>
<th>N°</th>
<th>Indicator</th>
<th>Main criteria</th>
<th>Sub criteria</th>
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<tbody>
<tr>
<td>1</td>
<td>ASN Performance</td>
<td>Presence/Timeliness</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Accuracy</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Quantity</td>
<td>Actual delivery quantity versus requirement</td>
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<tr>
<td></td>
<td></td>
<td>Timeslot</td>
<td>Actual delivery time versus requirement</td>
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<td></td>
<td></td>
<td>Delivery Point</td>
<td>Actual delivery point versus requirement</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Part number</td>
<td>Actual part number versus requirement</td>
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<tr>
<td>2</td>
<td>Delivery Accuracy</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>Sum of days between Min/Max divided by total time span</td>
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<tr>
<td></td>
<td></td>
<td>Sum (# alert type x grade x weight)/Sum(# alert type x weight) x 100</td>
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<tr>
<td>3</td>
<td>VMI</td>
<td>Packaging</td>
<td>Compliance with packaging design</td>
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<td></td>
<td></td>
<td>Cleanliness/Damaged Packaging/Safety</td>
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<tr>
<td></td>
<td></td>
<td>Labelling</td>
<td>Label not readable</td>
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<td></td>
<td></td>
<td>Mislabelling</td>
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<td></td>
<td>Non-conform label: Missing or incorrect data or logo</td>
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<td></td>
<td></td>
<td>Delivery documents</td>
<td>Accuracy of data (Purchase Part number) on Delivery Note</td>
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<td></td>
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<td></td>
<td>Quantity delivered &lt; &gt; Quantity on Delivery Note or ASN</td>
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<td></td>
<td></td>
<td>Parts delivered without Delivery Notes</td>
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<td></td>
<td>Compliance with specified Delivery Note template</td>
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<td>Specific delivery documents missing (customs, control report)</td>
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<td>Unloading/Loading</td>
<td>Compliance with loading/unloading specification</td>
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<td>Compliance with safety specifications</td>
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<td>4</td>
<td>Material Handling and Identification</td>
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<td></td>
<td>Production Schedule Modifications</td>
<td>Number of Production schedule modifications</td>
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<td>Units on hold on the physical flow</td>
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<td></td>
<td>Incomplete Units at point of fix</td>
<td>Incomplete unit at the end of line</td>
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<td>Incomplete unit held back before end of line</td>
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<td>Lines stop</td>
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<td>5</td>
<td>Production Disruption</td>
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<td></td>
<td></td>
<td>Self Sufficiency</td>
<td>Does Supplier understand Customer needs, manage business?</td>
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<td></td>
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<td>Reliability</td>
<td>Is concern a repeat concern?</td>
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<td>Responsiveness</td>
<td>Is response to request to Customer demand or response to concern late/overdue</td>
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<td>Availability</td>
<td>Is Supplier contact/contact person readily available?</td>
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<td>Problem Notification</td>
<td>Does the Supplier understand Customer need?</td>
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<td>Flexibility</td>
<td>Is the Supplier flexible to Customer needs and ordering demands?</td>
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Achievements/Next Steps

- Global MMLKPI recommendation Agreed
- Logistics Functional Committee validation November 2006
- ODETTTE board validation December 2006
- Publication by year end 2006
- Common training kit for Global MMOG/LE and MMLKPI
- KPI project on Logistics Service Provider performance started
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