QUALITY INDICATORS

APRIL 2021
OPERATIONAL PURCHASING DIRECTION

PURPOSE

This document describes the main quality indicators needed to monitor supplier performance and customer satisfaction.

DOMAINE D'APPLICATION

This document applies within the Group to the Purchasing functions in charge of supplier relations.

1. Principles

The indicators described in this document enable the different Purchasing areas (Raw Materials, Industrial Purchasing) to monitor :

- **compliance with the requirements of the products purchased**
- **customer supply disruptions**
- **delivery performance**

The way of establishing these indicators is flexible according to the fields and the products or services provided. This list is not exhaustive; domains may use other relevant indicators as long as they allow for equivalent monitoring. The information used to establish these indicators may come from Michelin or its suppliers.

2. Monitoring compliance with the requirements of the products purchased

This indicator measures the intrinsic quality of products and services (compliance with specifications, delays, packaging defects, ...). The quality of products and services is assessed according to the non-conformities recorded.

2.1 Raw materials

We measure **the Business Quality Indicator**, which assesses the level of product performance over a given period. It can be applied to :
- one or more products delivered by a supplier
- one or more supplier manufacturing sites.

$$IQB = \frac{N}{N + \sum criticality} x100$$

N = number of receptions (it is possible to have several receptions for the same supplier batch)

Criticality = seriousness X business impact.

Criticality levels are communicated to the supplier with each claim file.

Rating				
of seriousness		**of business impact**		
Receipt reported	1	Non-compliance found during inspection of delivery or receipt		3
Partial refusal or partial non-compliance of receipt	3			
Total refusal or total non-compliance of receipt	10	Non-compliance found during implementation or usage		10

For all non-conformities of product error typology, the criticity will be obligatorily positioned at 100, regardless of the decision or detection location of the issuing plant.

2.2 Excluding raw materials
- Recurrent purchases (as per catalogue)

$$IQL \text{ en } \% = \frac{Number\ of\ conform\ deliveries\ X\ 100}{Total\ number\ of\ deliveries\ delivered}$$

- Non-recurrent purchases

Purchases are structured according to the business. In order to measure the supplier's performance, a business assessment is carried out, in which indicators of lead times (initial lead time / updated lead time / completed lead time) and **conformity** to requirements (expression of non conformities, quality complaints, evaluation by internal customers, etc.) appear.

3. Monitoring of delivery performance

The monitoring of delivery performance is carried out by monitoring non-conformities in terms of deadlines and non-conformities in terms of **quantities**. **The Quality Delivery Indicator** evaluates the performance of the delivery for a given period :

$$IQD = \frac{N - n_i}{N} x100$$

N = total number of deliveries during the evaluation period in question.

ni = number of deliveries outside the contractual period and quantity.

- **For raw materials :**
  - Acceptable delivery windows, as defined by Michelin, will be taken into account.
  - For **Raw Materials managed in VMOI** (Vendor Managed Owned Inventory), the delivery performance will depend on the respect by the supplier of the minimum/maximum thresholds in the piloting of its stock level.

We thus measure the **PSL** (Projected Stock Level) beyond the fixed period and we note the number of days over a given period during which the PSL is between the minimum and maximum.

This indicator is the **Supply Plan Accuracy (SPA).**

The ratio is then calculated **SPA** = $\dfrac{\text{Number of days between min. and max.}}{\text{Total number of days}}$