
**Industrial automation systems
and integration — Standardized
procedures for production systems
engineering —**

Part 4:

**Key performance indicators (KPIs) in
production planning processes**

*Systèmes d'automatisation industrielle et intégration — Procédures
normalisées pour l'ingénierie des systèmes de production —*

*Partie 4: Indicateurs de performance clé dans les processus de
planification de la production*

ISO 18828-4:2018

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Foreword

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Introduction

Ever-growing demands, such as increasing product and process complexity (recognizable by the high number of versions, short product lifecycles and greater time and cost pressures), define the key challenges faced by modern manufacturers. As a result, companies resort to ever-more sophisticated tools for managing complexity and improving transparency. Performance management systems provide aggregated quantitative depictions of the current situation via key performance indicators (KPIs), thereby creating the basis for improvement and decision-making processes. Consequently, the aim of using KPIs is to consistently analyse current production processes in order to control and manage them after start of production (SOP). In this way, KPIs provide a base of information for understanding and improving manufacturing performance.

NOTE 1 See for example ISO 22400.

Beyond the uniform set of core key indicators, many companies already successfully utilize performance management based on a self-defined, comprehensive range of measurable values. In this process, a target-oriented, company-specific interpretation of key indicators is often performed.

Considering the product development process in greater detail and taking into account the planning tasks before SOP, it is recognizable that the definition and establishment of standardized key indicators focuses on the phase after SOP. [Figure 1](#) details the key tasks in this area based on the product lifecycle.

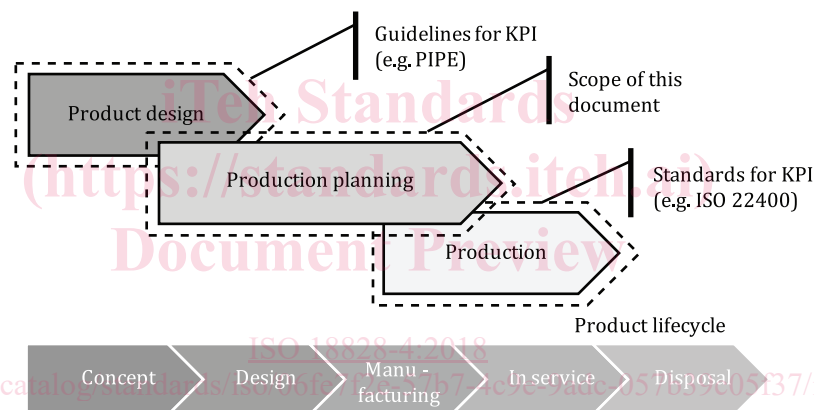


Figure 1 — Quantitative depiction of use of key performance indicators in product lifecycle

The range of process management indicators available in the production planning phase is quite small, as indirect planning tasks have rarely been recorded or managed up to this point. Consequently, there is no standardized set of basic key planning indicators before SOP.

The lack of adequate control parameters necessitates the development of a framework to monitor and improve production planning processes. Key indicators described in this document concern performance tracking of planning processes for engineering production systems.

NOTE 2 This is based on the planning disciplines and stage of development of the planning process in accordance with ISO 18828-2.

The KPIs for production planning generally help to advance the process of standardizing the quality of production process monitoring. The key indicators are abstracted in such a way that they can be consistently applied, according to their definition, in the various planning areas and, if properly adapted, in other areas as well. The key indicators by themselves cannot be used to measure process performance. They can only be set in relation to, and used for, the purposes of continuous comparison with process improvement if thresholds are defined and applied. Definition of the relevant thresholds therefore depends on the particular company. Regarding the production planning processes, it is necessary to pay more attention to the system boundaries of the analysis in order to ensure proper performance management. Key indicators often have a general trend, in terms of optimization taking place in general, or even a theoretical optimum existing. However, they require in particular an

examination in relation to the company specifically and an application-based interpretation carried out previous to their utilization.

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