TECHNICAL REPORT

ISO/TR 22400-10

First edition
2018-10

Automation systems and integration — Key performance indicators (KPIs) for manufacturing operations management —

Part 10: Operational sequence description of data acquisition

Systèmes d'automatisation et intégration — Indicateurs de la performance clé pour le management des opérations de fabrication —

Partie 10: Description de l'acquisition des données relatives aux séquences opérationnelles

Reference number
ISO/TR 22400-10:2018(E)

© ISO 2018



COPYRIGHT PROTECTED DOCUMENT

© ISO 2018

All rights reserved. Unless otherwise specified, or required in the context of its implementation, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Fax: +41 22 749 09 47
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

© ISO 2018 – All rights reserved

Contents

Page

Foreword ..... **iv**
Introduction ..... **v**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **1**
4 KPI calculation examples **2**
4.1 Example setup 2
4.2 KPIs for work unit 2
4.3 KPIs for production orders and production order sequences 7
4.4 KPIs for worker 15
Annex A (informative) **Example: Work unit data recording for KPI calculation** **19**

© ISO 2018 – All rights reserved

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 184, *Automation systems and integration*, Subcommittee SC 5, *Interoperability, integration, and architectures for enterprise systems and automation applications*.

A list of all parts in the ISO 22400 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

© ISO 2018 – All rights reserved

Introduction

This document describes the procedure for the determination of key performance indicators (KPIs) by means of examples. The KPIs that are used are given in ISO 22400-2.

© ISO 2018 – All rights reserved

Automation systems and integration — Key performance indicators (KPIs) for manufacturing operations management —

Part 10: Operational sequence description of data acquisition

1 Scope

This document contains descriptions for the practical use for applying formulae as specified in ISO 22400-2 for key performance indicators for production control and monitoring. This document is intended to be applied in conjunction with the content of ISO 22400-2.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 22400-2:2014, *Automation systems and integration — Key performance indicators (KPIs) for manufacturing operations management — Part 2: Definitions and descriptions*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 22400-2 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
planned shut down time
PSDT
time in which the work unit is planned to be out of operation

Note 1 to entry: Corresponds to “no production” as defined in ISO 22400-2.

3.2
planned down time
PDOT
time, included in the planned operation time, in which the work unit is planned for no operations within the operation time period

Note 1 to entry: ISO 22400-2:2014, Figure 3, gives a detailed overview of the used time lines for work units as used for the ISO 22400 series.

3.3
work unit log
data recording of work unit events along with their time stamps

© ISO 2018 – All rights reserved