ISO 15746-1:2015-04 (E)

Automation systems and integration - Integration of advanced process control and optimization capabilities for manufacturing systems - Part 1: Framework and functional model

Contents

Page

Foreword iv

Introduction v

1 Scope 1

2 Termsanddefinitions 1

3 Abbreviated terms 3

4 Concepts and capabilities 3
4.1 Background concepts 3
4.2 Capabilities of the APC-O system 4

5 Functional architecture of the APC-O system 4

6 Capabilities of modules within the APC-O system 6
6.1 Soft sensor module 6
6.2 APC module 6
6.3 Optimization module 6
6.4 Performance assessment module 6

7 Structure and lifecycle phases of APC-O modules 7
7.1 Generic structure of APC-O modules 7
7.2 Life cycle phases of the soft sensor module 8
7.3 Life cycle phases of the APC module 11
7.4 Life cycle phases of the optimization module 13
7.5 Life cycle phases of the performance assessment module 15

Annex A (informative) Typical example of APC-O system integration 17

Annex B (informative) PLS technique 19

Annex C (informative) Predictive control and steady state optimization 20

Annex D (informative) PID performance assessment 21

Bibliography 22