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FUNCTIONAL ARCHITECTURE OF INDUSTRIAL INTERNET SYSTEM FOR INDUSTRIAL AUTOMATION APPLICATIONS

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INTRODUCTION

For traditional plants, each piece of equipment is isolated, and the production data of equipment is collected manually, while the efficiency of manual statistics is also very low. With the continuous development of industrial automation, digitalization, and intelligent technologies, the intelligent and connected plant combined with "end-edge-cloud" collaboration extends the scope of the original plant and builds close ties between people and production equipment via data. In this way, it realizes the whole process with real-time interconnection between users, equipment and products, achieving zero distance between them, with transparent visibility of the whole process. In addition, the in-depth application of artificial intelligence and big data technologies in the industrial field contributes a large number of algorithms for intelligent optimization and decision-making, thus providing critical solutions for upgrading toward intelligent industrial systems.

FUNCTIONAL ARCHITECTURE OF INDUSTRIAL INTERNET SYSTEM FOR INDUSTRIAL AUTOMATION APPLICATIONS

1 Scope

This document defines the functional architecture and functional model of the industrial internet system for industrial applications. It presents the models, structures, activities, and interaction contents between layers of the end, edge, and cloud: infrastructure as a service (IaaS), platform as a service (PaaS), and software as service (SaaS), respectively.

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.

IEC 62264-1:2013, *Enterprise-control system integration – Part 1: Models and terminology*

IEC 62264-2:2013, *Enterprise-control system integration – Part 2: Object and attributes for enterprise-control system integration*

IEC 62264-3:2016, *Enterprise-control system integration – Part 3: Activity models of manufacturing operations management*