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IEEE Guide for Taxonomy for Intelligent Process Automation Product Features and Functionality

IEEE-SA Board of Governors

Developed by the
Corporate Advisory Group

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Abstract: Utilizing terminology as established in IEEE Std 2755-2017, defined and classified in this guide are approximately 150 features and functions across five core areas of technology capability in the family of new technology products collectively referred to as Intelligent Process Automation. This guide is published to create clarity for individuals involved with Software-Based Intelligent Process Automation products so that industry participants may rely on a product manufacturer's functionality claims and understand the underlying technological methods used to produce those functions and how one might approach evaluating the relative sophistication and importance of each function or feature. This guide represents the consensus of a diverse panel of industry participants.

Keywords: AI, artificial intelligence, autonomic, business process automation, business process management, cognitive computing, digital labor, digital workforce, digital process automation, IEEE 2755.1™, intelligent process automation, machine learning, narrow AI, process choreography, process orchestration, robotic desktop automation, RPA, robotic process automation

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Introduction

This introduction is not part of IEEE Std 2755.1-2019, IEEE Guide for Taxonomy for Intelligent Process Automation Product Features and Functionality.

Over the last three years, many new Software-Based Intelligent Process Automation products have been introduced in the market. The relative newness of these products and their capabilities continue to confuse interested parties.

This guide embraces all products in this field and defines features and functionality in their core architecture and the following five categories of feature sets:

a) Architecture: Core design fundamentals of the underlying technologies

b) Configuration, Build, Test: Environment provided to create production automation

c) Orchestration: Sequencer of automation inputs, actions, and outputs

d) Management: Production management console or command center

e) Execution: Production run-time capabilities

f) Intelligence: Presence and uses of predictive and prescriptive analytic data models (see below)

Significant consideration was given to the following four defined communities of interest that may find this guide useful:

1) The Business: The part of the enterprise consuming, configuring business logic, and utilizing the products

2) Procurement: Those evaluating products for purchase

3) Information Technology (IT): The IT function of the consuming enterprise

4) Audit: The internal or external function assessing process control and compliance

Each function or feature has been defined, its importance described, how it should be evaluated, which community of interest would likely care the most about a specific feature or function, and finally, which community of interest would be most capable of performing the evaluation.

This guide is intended to establish a structured and consistent reference resource to enable an objective set of criteria for evaluating the capabilities of a wide variety of products in the Intelligent Process Automation family. Further, this guide is intended to improve the ability of consuming enterprises in assessing and selecting products that best meet their needs.

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IEEE Guide for Taxonomy for Intelligent Process Automation Product Features and Functionality

1. Overview

1.1 General

This guide is provided to facilitate a comprehensive and objective evaluation of Intelligent Process Automation products. The variety and complexity of these product varies greatly. There are at least four communities of interest that either have an interest in the features and functionality or are most capable of assessing the feature and functions. Throughout the development of this guide, it became increasingly clear that the community of interest that might care most about a specific feature may be different than the community of interest best able to evaluate that feature. This guide provides a recommendation for which community of interest is best able to assess functionality and which community would likely be most interested in the result of that evaluation.

1.2 Scope

This guide defines and classifies a Software-based Intelligent Process Automation product's capabilities and features in six major categories along with its underlying technology for the interested community.

1.3 Purpose

This guide creates clarity for all who are involved with Software-Based Intelligent Process Automation products so that industry participants may rely on a product manufacturer's functionality claims and understand the underlying technological methods used to produce those functions. This guide represents the consensus of a diverse panel of industry participants.

2. Feature set description and definitions

2.1 General

A wide-ranging variety of available Intelligent Process Automation products were included in the analysis to identify a consistent taxonomy for the broad categories of design and functionality present in all or most products. The following six categories are discussed in 2.1.1 through 2.1.6.