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Information technology — Artificial intelligence — Process management framework for big data analytics

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

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This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 42, *Artificial intelligence*.

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 and www.iec.ch/national-committees.

Introduction

This document provides a process management framework for using big data analytics (BDA) across most functions of an organization. The quantum of data, the collection, storage, utilization, technology, the speed of data generation, structure and variety of data cannot be handled by the conventional data handling methods and frameworks.

This document provides a BDA process reference model (BDA PRM) and then provides process assessment model (BDA PAM). The BDA PAM are composed of two dimensions: process dimension that includes processes based on a set of PRMs including the BDA PRM and capability dimension based on process measurement framework (PMF).

This document defines a PRM and PAM as part of the framework for big data analytics, in accordance with the requirements of ISO/IEC 33004:2015 and ISO/IEC 33020:2019, for use in performing a conformity assessment in accordance with the requirements of ISO/IEC 33002:2015.

Primary audiences of this document are implementers of BDA in organizations as well as BDA capability assessors. This document provides five process categories such as organization stakeholder, competency development, data management, analytics development, and technology integration.

This framework can be used for:

- managing the processes that are considered to be best practices;
- enabling risk determination and process improvements of the incumbent organization.

Value delivered through automation, either prediction, or decision-making support or both using BDA is valuable to organizations. Implementing, improving, and assessing BDA processes based on this document expect benefits such as:

- competitive advantages;
- better decision-making;
- improve customer experiences;
- sales improvement;
- responsiveness to opportunities and threats;
- mistakes and errors reduction;
- cost reduction.

[Clause 5](#) provides an overview of PRM and [Clause 6](#) details out the specific processes under each process categories for the PRM. [Clause 7](#) provides an overview of the PAM and [Clause 8](#) provides details of process attributes and process performance indicators and [Clause 9](#) provides process capability indicators.

Information technology — Artificial intelligence — Process management framework for big data analytics

1 Scope

This document provides a framework for developing processes to effectively leverage big data analytics across the organization irrespective of the industries or sectors.

This document specifies process management for big data analytics with its various process categories taken into account along with their interconnectivities. These process categories are organization stakeholder processes, competency development processes, data management processes, analytics development processes and technology integration processes. This document describes processes to acquire, describe, store and process data at an organization level which provides big data analytics services.

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/IEC 33001:2015, *Information technology — Process assessment — Concepts and terminology*

ISO/IEC 33003:2015, *Information technology — Process assessment — Requirements for process measurement frameworks*