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BSI Standards Publication

Information technology — Big data reference architecture

Part 5: Standards roadmap

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National foreword

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Part 5: Standards roadmap

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Foreword

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For an explanation on 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 the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/IEC JTC 1, *Information technology*.

A list of all parts in the ISO/IEC 20547-series can be found on the ISO website.

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Introduction

There is broad agreement among commercial, academic, and government leaders about the remarkable potential of big data to spark innovation, fuel commerce, and drive progress. big data is the common term used to describe the deluge of data in today's networked, digitized, sensor-laden, and information-driven world. The availability of vast data resources carries the potential to answer questions previously out of reach, including the following:

— How can a potential pandemic reliably be detected early enough to intervene?

— Can new materials with advanced properties be predicted before these materials have ever been synthesized?

— How can the current advantage of the attacker over the defender in guarding against cyber-security threats be reversed?

There is also broad agreement on the ability of big data to overwhelm traditional approaches. The growth rates for data volumes, speeds, and complexity are outpacing scientific and technological advances in data analytics, management, transport, and data user spheres.

Despite widespread agreement on the inherent opportunities and current limitations of big data, a lack of consensus on some important, fundamental questions continues to confuse potential users and stymie progress. These questions include the following:

— What attributes define big data solutions?

— How is big data different from traditional data environments and related applications?

— What are the essential characteristics of big data environments?

— How do these environments integrate with currently deployed architectures?

— What standards are in place to support big data and how does big data affect existing standards?

— What are the central scientific, technological, and standardization challenges that need to be addressed to accelerate the deployment of robust big data solutions?

This document is focused on providing at least some portion of the answers to the last two questions.

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TECHNICAL REPORT **ISO/IEC TR 20547-5:2018(E)**

Information technology — Big data reference architecture —

Part 5: Standards roadmap

1 Scope

This document describes big data relevant standards, both in existence and under development, along with priorities for future big data standards development based on gap analysis.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 20546:—[1)], *Information technology — Big data — Definition and vocabulary*

3 Terms, definitions and abbreviations

For the purposes of this document, the terms and definitions given in ISO/IEC 20546 and the following apply.

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

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

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

3.1 Terms defined elsewhere

3.1.1
big data
extensive datasets — primarily in the characteristics of volume, variety, velocity, and/or variability — that require a scalable architecture for efficient storage, manipulation, and analysis

[SOURCE: ISO/IEC 20546:—[1)]]

3.2 Terms defined in this document

3.2.1
standard implementer
component that enables the provision of services based on the standards

Note 1 to entry: For example, a developer who need to comply with SQL commands would be an implementer of that standard.

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