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Systems and software engineering — Information technology project performance benchmarking framework —

Part 1: Concepts and definitions

*Ingénierie des systèmes et du logiciel — Cadre de conduite de tests de
performance de projet de technologies de l'information —*

Partie 1: Concepts et définitions

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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

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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. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

ISO/IEC 29155-1 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 7, *Software and systems engineering*.

ISO/IEC 29155 consists of the following parts, under the general title *Systems and software engineering — Information technology project performance benchmarking framework*:

— *Part 1: Concepts and definitions*

The following part is under preparation:

— *Part 2: Requirements for benchmarking*

Introduction

This part of ISO/IEC 29155 identifies a framework which consists of activities and components that are necessary to successfully identify, define, select, apply, and improve benchmarking for information technology (IT) project performance. It also provides definitions for IT project performance benchmarking terms.

This part of ISO/IEC 29155 is intended to provide a framework about issues and considerations for data selection and comparison in information technology (IT) project performance benchmarking.

The starting point for this part of ISO/IEC 29155 and the ISO/IEC 29155 series was the concept outlined by the draft ISBSG (International Software Benchmarking Standards Group) benchmarking standard. IT project performance benchmarking is a combination of several different advanced technologies and practices in the area of quantitative analysis and management. Thus the framework introduced in this part of ISO/IEC 29155 can be built on the basis of various standardized key technologies such as:

- project management (e.g. PMBOK Guide and ISO 10006),
- systems and software measurements (e.g. ISO/IEC 15939),
- software life cycle processes (e.g. ISO/IEC 12207),
- systems life cycle processes (e.g. ISO/IEC 15288),
- functional size measurement (e.g. ISO/IEC 14143 series and related methods),
- systems and software quality evaluations (e.g. ISO/IEC 25000 family and ISO/IEC 9126 series).

This part of ISO/IEC 29155 is designed to conform to the concepts within ISO/IEC 12207 (software life cycle processes), ISO/IEC 15288 (systems life cycle processes), the ISO/IEC 14143 series (functional size measurement), the ISO/IEC 15504 series (process assessment), ISO/IEC TR 12182 (categorization of software), or ISO/IEC 14764 (maintenance of software life cycle processes).

IT project performance benchmarking instances are initiated and conducted for various reasons. Among the most common reasons are:

- a) need to improve project management maturity,
- b) need to improve project estimation capability,
- c) need to compare productivity between different project types and technologies,
- d) need to compare project productivity between similar industries,
- e) need to find the most effective targets for IT development process improvement.

Much has been written regarding the trials of establishing an IT project benchmarking framework, and statistics bear witness to the high failure rate of measurement programs. The most probable causes for failure have been disappointment in the benchmarking outcome due to a lack of alignment between the selected measurements and business goals, and the misunderstanding of project level measurements in relation to program and portfolio management levels.

This part of ISO/IEC 29155 is developed as the first of multiple parts which will complete the IT project performance benchmarking framework as is shown in Figure 1. This part of ISO/IEC 29155 is the concept standard; it contains no mandatory requirements. The requirements for the benchmarking process will be

specified subsequent to the standardization of the concepts and definitions. Then, the guidelines for the quality and quantity of different inputs and benchmarking outputs will be drafted, together with the domain-specific control needs.

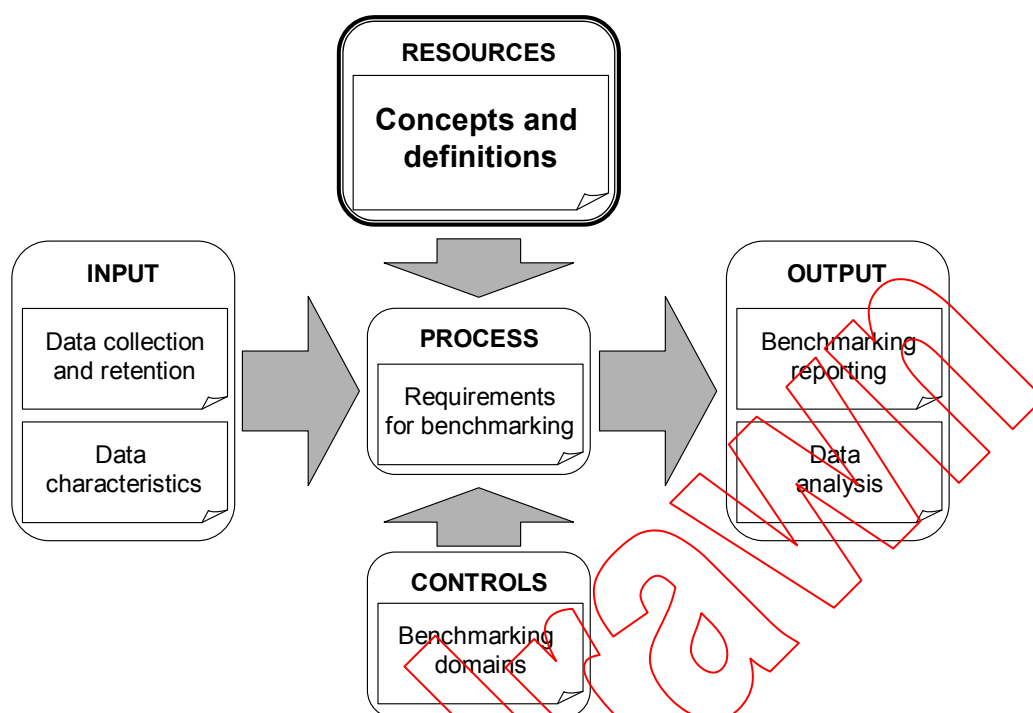


Figure 1 — IT project performance benchmarking framework overview

Systems and software engineering — Information technology project performance benchmarking framework —

Part 1: Concepts and definitions

1 Scope

This part of ISO/IEC 29155 identifies a framework for information technology (IT) project performance benchmarking (e.g. development or maintenance productivity) and related aspects (e.g. data collection and software classification).

The framework consists of activities and components that are necessary to successfully identify, define, select, apply, and improve benchmarking for IT project performance. It also provides definitions for IT project performance benchmarking terms.

The target audience of this part of ISO/IEC 29155 are stakeholders of IT project performance benchmarking.

NOTE The following are examples of how this part of ISO/IEC 29155 can be used:

- by a Benchmarking service provider who wants to align their benchmarking process to be consistent with this part of ISO/IEC 29155;
- by a Benchmarking user (or third-party agents) for evaluating the performance of an IT project;
- by an organization internally to answer specific information needs.

This part of ISO/IEC 29155 does not prescribe how to organize benchmarking. It is out of the scope of this part of ISO/IEC 29155 to prescribe the name, format, or explicit content of the documentation to be produced from the benchmarking process.