
Systems and software engineering — Measurement process

Ingénierie des systèmes et du logiciel — Processus de mesure



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Foreword

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ISO/IEC 15939 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 7, *Systems and software engineering*, in cooperation with the Software & Systems Engineering Standards Committee of the IEEE Computer Society, under the Partner Standards Development Organization cooperation agreement between ISO and IEEE.

This first edition cancels and replaces ISO/IEC 15939:2007, which has been revised to align with revisions of ISO/IEC/IEEE 15288:2015.

Introduction

Measurement supports the management and improvement of processes and products. Measurement is a primary tool for managing system and software life cycle activities, assessing the feasibility of project plans, and monitoring the adherence of project activities to those plans. System and software measurement is also a key discipline in evaluating the quality of products and the capability of organizational processes. It is becoming increasingly important in two-party business agreements, where it provides a basis for specification, management, and acceptance criteria.

Continual improvement requires change within the organization. Evaluation of change requires measurement. Measurement itself does not initiate change. Measurement should lead to action and not be employed purely to accumulate data. Measurements should have a clearly defined purpose.

This document defines a measurement process applicable to system and software engineering and management disciplines. The process is described through a model that defines the activities of the measurement process that are required to adequately specify what measurement information is required, how the measures and analysis results are to be applied, and how to determine if the analysis results are valid. The measurement process is flexible, tailorable, and adaptable to the needs of different users.

The measurement process defined in this document, while written for system and software domains, can be applied in other domains.

The purpose of this document is to describe the activities and tasks that are necessary to successfully identify, define, select, apply and improve measurement within an overall project or organizational measurement structure. It also provides definitions for measurement terms commonly used within the system and software disciplines.

This document does not catalog measures, nor does it provide a recommended set of measures to apply on projects. It does identify a process that supports defining a suitable set of measures that addresses specific information needs.

This document is intended to be used by suppliers and acquirers. Suppliers include personnel performing management, technical and quality management functions in system and software development, maintenance, integration and product support organizations. Acquirers include personnel performing management, technical and quality management functions in procurement and user organizations.

The following are examples of how this document can be used:

- by a supplier to implement a measurement process to address specific project or organizational information requirements;
- by an acquirer (or third-party agents) for evaluating conformance of the supplier's measurement process to this document;
- by an acquirer (or third-party agents) to implement a measurement process to address specific technical and project management information requirements related to the acquisition;
- in a contract between an acquirer and a supplier as a method for defining the process and product measurement information to be exchanged.