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TBITS 26: Software Product Evaluation, Quality Characteristics and Guidelines for their Use - Implementation Criteria

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TBITS 26: Software Product Evaluation, Quality Characteristics and Guidelines for their Use - Implementation Criteria

1. Reference

1.1 Name

- Software product evaluation – Quality characteristics and guidelines for their use

1.2 Identifier

- TBITS-26

1.3 Category

- Standard

1.4 Effective date

- 11 February 1993

1.5 Approving authority

- Treasury Board of Canada

1.6 Maintenance agency

- Information Technology Management
- Treasury Board Secretariat

1.7 Cross index

- ISO 9126 Information technology – Software Product Evaluation – Quality characteristics and guidelines for their use

1.8 Related documents

- ISO 8402 Vocabulary
- CAN/CSA-Z243.58-92, Information Technology Vocabulary
- TBITS-23, Information Technology Vocabulary

2. Purpose

This Treasury Board Information Technology Standard (TBITS-26) supports the Government of Canada policy requirement that quality management practices including system controls which promote innovative and efficient acquisition, deployment and administration of information technology resources be adopted.

The software industry has now matured and at the same time software has become a crucial component of many products. With demands for safety and quality, the need for a software quality assessment procedure is important. There are essentially two approaches to assure product quality, one being the assurance of the process by which the product has been developed, and the other being the evaluation of the quality end product. Both these approaches are important and both require the presence of a system for managing quality.

TBITS-26 focuses on the concept of quality characteristics because the technology to specify and evaluate both the software product quality and the development process quality, objectively and quantitatively, is the most important aspect of software engineering to promote and improve ongoing performance. This approach is especially relevant in the overall area of information technology management in the federal government where substantial resources are expended in the acquisition, development and maintenance of software.

The purpose of the standard is therefore to provide a uniform set of criteria for the acquisition, development and maintenance of software to ensure quality and performance.

3. Application

This standard defines six characteristics that describe, with minimal overlap, software quality. Guidelines describe the use of quality

characteristics for the evaluation of software quality. The definition of characteristics and the associated quality evaluation process model in this standard are applicable when specifying the requirements for and evaluating the quality of software products throughout their life cycle.

This standard provides the basic set of criteria for quality characteristics and will support other more detailed standards which are currently being developed. These more detailed standards include guidance on the application of the characteristics, metrics, planning, developers' guide, users' guide, assessor's guide and metrics indicators.

This standard is applicable to activities associated with the acquisition, development, use, support, maintenance, or audit of software and should be used to define software quality requirements and evaluating (measuring, rating and assessing) software products including:

- defining the software product quality requirement;
- evaluating software specification, to see if it will satisfy the quality requirement during development;
- describing features and attributes of the software;
- evaluating software before delivery;
- evaluating software before acceptance.

The characteristics are applicable to all software, including computer programs and data contained in firmware.

4. Specifications

This standard does not provide sub-characteristics and metrics and methods for measurement, rating and assessment.

5. Qualifications

In certain circumstances, departments and agencies may wish to make exceptions to the use of this standard. This may be done when it can be clearly demonstrated that there are appreciable performance or cost advantages to be gained, when the overall interests of the Government of Canada are best served, or when the department or agency is a party to an international treaty or obligation (e.g. NATO).

It should be noted that the terminology used in the international standards with regards to "users" should be considered with respect to the organization. In some cases, users are referred to as clients or customers. Therefore, in so far as the application of this standard is concerned, the words "users", "clients" or "customers" may be used synonymously.

6. Implementation

The effective date of this standard is 11 February 1993.

7. Government software quality assurance standards working group

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8. Where to obtain copies

Copies of the technical specification may be obtained from:

ISO 9126

Information technology – Software product evaluation and guidelines for their use

The Technical Specifications are available in separate English and French editions.