INTERNATIONAL STANDARD

ISO/IEC 29169

First edition
2016-04-01

Information technology — Process assessment — Application of conformity assessment methodology to the assessment to process quality characteristics and organizational maturity

Technologies de l'information — Évaluation du processus — Application de la méthodologie de l'évaluation de la conformité à l'évaluation de circuler les caractéristiques de qualité et la maturité organisationnelle

Reference number
ISO/IEC 29169:2016(E)

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

Page

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT), see the following URL: Foreword — Supplementary information.

The committee responsible for this document is ISO/IEC JTC 1, *Information technology*, Subcommittee SC 7, *Software and systems engineering*.

Introduction

JTC 1's policy on conformity assessment is stated in the Consolidated JTC1 Supplement, 2015. To promote consistent implementation of standards, JTC 1 has resolved that it shall be a major contributor to international acceptance of conformity assessment procedures and specifications for IT related areas, and that it shall work to support an environment which encourages worldwide recognition of conformity assessment results.

Each JTC 1 Subcommittee has the authority and responsibility to specify the conformity assessment methodology applicable to any distinct area of Information Technology that is entirely within the scope of that Subcommittee.

In the conformity assessment area, JTC 1's objectives include the facilitation of mutual recognition of accreditation, test reports, certification and registration in the IT field, primarily by developing appropriate standards, and recognition of Supplier's Declaration as a legitimate statement of conformity.

To support JTC1's objectives of mutual recognition of accreditation, test reports, certification, registration, and recognition of a supplier's declaration of conformity, a conformity assessment methodology for the assessment of process quality characteristics and organizational process maturity is defined in this International Standard which provides for an environment for and encourages the worldwide recognition of conformity assessment results.

The overall framework for conformity assessment follows the approach defined in ISO/IEC 17020, which covers *inter alia* the functions of bodies whose work includes the examination of processes, and the determination of their conformity, with requirements, and the subsequent reporting of results of these activities to clients and, when required, to supervisory authorities. Such work normally requires the exercise of professional judgement in providing the service, in particular when assessing conformity.

ISO/IEC 17020 is used in the context of first, second and third party assessments resulting in the issuance of a conformity assessment report and statement of conformity. Where continuing assurance is needed or desirable to maintain the validity of an assessment result, the scope of conformity assessment can be extended to include periodic surveillance within a defined cycle

Additionally, ISO/IEC 17065 can be used as an alternative approach but only in the context of a third-party certification body using an audit approach typically with the issuance non conformity reports.

This International Standard has been developed following application of use in the field and in consultation with key stakeholders, national accreditation bodies, ISO's policy committee for conformity assessment (CASCO) and the International Certification Network (IQNet Association).

Information technology — Process assessment — Application of conformity assessment methodology to the assessment to process quality characteristics and organizational maturity

1 Scope

This International Standard aims to define the application of a conformity assessment methodology, based on the existing published ISO/IEC standards and guides, to the process assessment of process quality characteristics and organizational process maturity, performed in accordance with the requirements of the ISO/IEC 33001 to ISO/IEC 33099 family of process assessment standards,

Conformity assessment, also known as compliance assessment, is any activity to determine, directly or indirectly, that a process, product, or service meets relevant standards and fulfils relevant requirements. The subject of conformity assessment activities may include testing, inspection or certification.

Conformity assessment in this International Standard can be performed by various types of bodies that meet the requirements of ISO/IEC 17020.

The term "inspection" as used in ISO/IEC 17020 is synonymous with the term "process assessment" as defined in ISO/IEC 33001 and used throughout the ISO/IEC 33001 to ISO/IEC 33099 family of standards.

While a process assessment may be performed solely according to the ISO/IEC 33002 requirements for performing an assessment, performing a process assessment in the context of conformity assessment according to a conformity assessment scheme brings with it additional requirements. Conformity assessment involves a functional approach consisting of a number of stages: selection–determination–review and attestation, plus surveillance when there is a need to provide continuing assurance of conformity.

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

ISO/IEC 33002:2015, *Information technology — Process assessment — Requirements for performing process assessment*

ISO/IEC 17000, *Conformity assessment — Vocabulary and general principles*

ISO/IEC 17020:2012, *Conformity assessment — Requirements for the operation of various types of bodies performing inspection*

3 Terms and definitions

For the purposes of this International Standard, the definitions in ISO/IEC 33001, ISO/IEC 33020, ISO/IEC 17000 and ISO/IEC 17020 apply.

NOTE 1 Where the term **conformity assessment** is used, the definition in ISO/IEC 17000 applies.

NOTE 2 Wherever the term **assessment** is used without the word **conformity** (e.g. assessment, process assessment, conformant process assessment, assessment body), the relevant ISO/IEC 33001 definitions apply.

NOTE 3 The term **inspection** as used in ISO/IEC 17020 is synonymous with the term **process assessment** as defined in ISO/IEC 33001 and used throughout the ISO/IEC 33001 to ISO/IEC 33099 family of standards.

NOTE 4 Both ISO/IEC 17020 and ISO/IEC 33002 refer to the independence of the different types of bodies. In order to clearly distinguish terminology used in the standards, ISO/IEC 17020 uses the term **Type** to identify the three types of inspection body (Types A, B and C); whereas, ISO/IEC 33002 uses the term **Category** to categorize the independence of different types of body and the make-up of the assessment team performing an assessment (Categories A, B, C and D).

4 Concepts of conformity assessment

4.1 Conformity assessment

ISO/IEC 17000 defines conformity assessment as: demonstration that specified requirements relating to a product, process, system, person, or body are fulfilled.

The term *object of conformity assessment*, or sometimes just object, is used in ISO/IEC 17000 to refer to "product, process, system, person or body".

4.2 Conformity assessment and standards

In the context of conformity assessment there are two major aspects of standardization.

The first aspect is the availability of national, regional and international standards that can be used by suppliers, purchasers, conformity assessment bodies and regulators for setting the requirements for an object and assessing its conformity with them.

The essential features of a standard to be used for conformity assessment are that the standard must be so written that it can be applied by any of the following:

— a manufacturer or supplier (first party);

— a user or purchaser (second party);

— an independent body (third party).

The relevant standard with reference to this International Standard is the ISO/IEC 33001 to ISO/IEC 33099 *family of standards on process assessment, where* ISO/IEC 33002 *defines the requirements for performing process assessment.*

The scope of the standard should also be clearly stated in terms both of the type of objects to which it relates and to the characteristics of those objects which it specifies.

The type of objects with reference to this International Standard is the process (es) within the scope of an ISO/IEC 33002 *process assessment. The relevant characteristic of the objects is the selected process quality characteristic.*

The second aspect of particular relevance to conformity assessment bodies is the availability of standards which set out requirements for best practice of conformity assessment and the bodies which carry it out. These standards are intended to ensure that there are consistent and internationally harmonized practices amongst conformity assessment bodies and the bodies with which they work (such as accreditation bodies). The responsibility for preparation and maintenance of these conformity assessment standards lies with ISO/CASCO.

The relevant standard with reference to this International Standard is ISO/IEC 17020*.*

4.3 Conformity assessment bodies

ISO/CASCO standards and guides define the characteristics for a number of different types of conformity assessment bodies. ISO/IEC 17020 sets out three types of inspection bodies (Types A, B, and C) with different requirements for independence.

ISO/IEC 33002:2015, Annex A *sets out a typology to categorize the independence of different types of body and the make-up of the assessment team performing an assessment (Categories A, B, C and D). The relationship between* ISO/IEC 17020 *types of inspection bodies and the* ISO/IEC 33002 *typology used to categorize the independence of types of body and the make-up of the assessment team performing an assessment is defined in* ISO/IEC 33002:2015, 6.2.

Inspection as defined in ISO/IEC 17020 is: "The examination of a product, **process,** service or installation or their design and determination of its conformity with specific requirements or, on the basis of professional judgment, with general requirements. "

The term "inspection" as used in ISO/IEC 17020 *is synonymous with the term "process assessment" as defined in* ISO/IEC 33001 *and used throughout the* ISO/IEC 33001 to ISO/IEC 33099 *family of standards. A process assessment is performed in accordance with the requirements of* ISO/IEC 33002*.*

One of the key phrases in the definition of inspection is "on the basis of professional judgement". This underlines the fact that the competence is highly dependent on the knowledge, experience and interpretive skills of the personnel performing inspection activities.

ISO/IEC 33002 *requires that an assessment is performed on the basis of general and specific requirements based on assessor professional judgement.*

In the conformity assessment field as in any other, the competence of the people managing and carrying out the conformity assessment activities is of paramount importance. Whether the work is being carried out by the supplier, the purchaser or an independent body, there must be a clear understanding of the knowledge, skills and experience necessary for those performing the conformity assessment tasks.

ISO/IEC 33002 *requires that assessors shall be competent on the basis of appropriate education, training and experience, including domain experience, to perform the required class of assessment and to make professional judgments.*

Every organization, whatever its role, should operate a competence management system in which the required competences are laid down and the means of demonstrating that individuals meet the requirements are specified.

Accreditation bodies carry out conformity assessment of conformity assessment bodies but are not themselves regarded as conformity assessment bodies. Accreditation is a conformity assessment technique specifically related to the assessment of the conformity of conformity assessment bodies by a third party body.

The requirements for accreditation bodies are specified in ISO/IEC 17011.

4.4 Conformity assessment schemes

There are many advantages to a systematic approach to conformity assessment. The basic building block is a *conformity assessment scheme* which relates to a particular group of objects having sufficiently similar characteristics that the same set of rules and procedures can be carried out under the same management for assessing conformity with the same set of specified requirements.

This International Standard sets out the basis for a conformity assessment scheme for the application of conformity assessment to performing assessments of process quality characteristics and organizational process maturity according the the requirements of ISO/IEC 33002*.*

5 Functional approach to conformity assessment

5.1 General

ISO/IEC 17000 sets out the "functional approach" to conformity assessment. The functional approach involves a number of stages: selection–determination–review and attestation, plus surveillance when required. Each stage involves the performance of certain activities, the output from one stage being the input to the next.

The activities carried out in each stage are summarized in general terms below.

5.2 Selection

Selection involves planning and preparation activities in order to collect or produce all the information and input needed for the subsequent determination function.

Key activities in selection include:

— specification of the standard(s) to which conformity is to be assessed;

— selection of the examples of the object which is to be assessed.

5.3 Determination

Determination activities are undertaken to develop complete information regarding fulfilment of the specified requirements by the object of conformity assessment.

The output from the determination activities is represented as "information on fulfilment of specified requirements". The output is a combination of all the information created through determination activity, as well as all the input to the determination function. The output is usually structured to facilitate review and attestation activities.

A key activity in determination is the inspection of process characteristics of the object of the assessment.

At the completion of every determination activity it is necessary to produce the evidence of conformity which has been gathered. The evidence is usually contained in a report, sometimes referred to as a technical file, which includes:

— definitive identification of the item which has been assessed;

— statement of the requirements to which conformity has been assessed;

— details of the determination activities which have been carried out, such that it would be possible to repeat the activities in the same manner if it was necessary to verify the evidence;

— details of the resources used, including people, measuring instruments and other evaluation tools, to provide traceability of the results;

— results of the activities in sufficient detail for a person not involved in the activities to verify conformity (or nonconformity) with the specified requirements.

The report is passed to the person or body responsible for review and attestation and should be made available to the person or organization for which the work has been done.

5.4 Review and attestation

In the functional approach, review and attestation are presented as a combined activity. It is possible, though, for different people to carry out each of them. What is important is that neither activity should be carried out by a person who has been involved in the determination activities.

The conclusion of the review stage is a recommendation for a statement of conformity to be issued. The recommendation should make reference to the report and to any other findings from the review which substantiates the conformity of the object with the specified requirements.

Key activities in review and attestation include:

— reviewing the evidence collected from the determination stage as to the conformity of the object with the specified requirements;

— referring back to the determination stage to resolve nonconformities;

— drawing up and issuing a statement of conformity.

In the case that the evidence of conformity is incomplete and one or more of the specified requirements has been overlooked, the report is returned to the person responsible for the determination activities for remedial action to be taken.

The relevant determination activities will need to be repeated and a further report will be presented for review. By agreement with the reviewer, the report need only deal with the changes which have been made.

5.5 Surveillance

Conformity assessment can end when attestation is performed, but where there is a need to provide continuing assurance of conformity, surveillance can be used. Surveillance is defined as a systematic iteration of conformity assessment activities as a basis for maintaining the validity of the statement of conformity.

The activities undertaken in surveillance are planned in order to satisfy the need to maintain the validity of an existing statement resulting from attestation. A complete repeat of the initial assessment is not usually necessary for every iteration of surveillance to satisfy this need.

Selection activities take place in both the initial assessment and in surveillance. However, entirely different choices might be made in surveillance.

Choices about the specified requirements can be different as well. For example, only a subset of the specified requirements might be selected in any given iteration of surveillance. Or, similarly, only a portion of the object of conformity assessment may be selected for determination activities in surveillance

The review and attestation function is also used in both initial assessment and surveillance. In surveillance, a review of all the inputs and outputs leads to a decision whether the statement resulting from attestation continues to be valid.

Key activities in surveillance include:

— carrying out determination activities at the place of use;

— reviewing the outcome from the determination activities;

— referring back to the determination stage to resolve nonconformities;

— drawing up and issuing confirmation of continued conformity;

— initiating remedial and preventive action in the case of nonconformities.

6 Conformity assessment scheme

6.1 Conformity assessment requirements

To meet conformity assessment requirements for a conformity assessment scheme in accordance with this International Standard,

a) a process assessment shall be planned and performed in accordance with the requirements of ISO/IEC 33002:2015, Clause 4 and in accordance with the additional requirements of Clause 7,

b) review and attestation activities including the issuing of a statement of conformity shall be performed in accordance with Clause 9,

c) when and where relevant, an organization shall agree to issue, a supplier declaration of conformity according to ISO/IEC 17050-1 and ISO/IEC 17050-2, as described in Clause 9,

d) where continuing assurance is needed or desirable to maintain the validity of an assessment result, periodic surveillance activities shall be performed in accordance with Clause 10,

e) a process assessment shall be performed by a body that meets the requirements for the operation of various types of bodies performing inspection defined in Clause 11.

6.2 Categorization of bodies

ISO/IEC 17020 defines three types of inspection body (Types A, B and C) whereas ISO/IEC 33002:2015, Annex A sets out a typology to categorize the independence of different types of body and the make-up of the assessment team performing an assessment (Categories A, B, C and D).

A Type A assessment body (as defined in ISO/IEC 17020) also meets the criteria for Category A independence of the body performing assessment (as defined in ISO/IEC 33002:2015, Annex A).

A Type B assessment body (as defined in ISO/IEC 17020) also meets the criteria for Category C independence of the body performing assessment (as defined in ISO/IEC 33002:2015, Annex A).

A Type C assessment body (as defined in ISO/IEC 17020) also meets the criteria for Category D independence of the body performing assessment (as defined in ISO/IEC 33002:2015, Annex A).

Category B independence of the body performing assessment (as defined in ISO/IEC 33002:2015, Annex A) does NOT meet the requirements for a Type A, B or C assessment body (as defined in ISO/IEC 17020).

6.3 Mutual recognition agreements

Assessment bodies applying this standard may establish mutual recognition agreements according to ISO/IEC Guide 68 Arrangements for the recognition and acceptance of conformity assessment results.

6.4 Agreement groups

Assessment bodies and/or the accreditation bodies applying this standard may establish an agreement group with a peer assessment process implemented according to ISO/IEC 17040.

6.5 Accreditation

Assessment bodies applying this standard may seek accreditation with their national accreditation body under the relevant accreditation guidelines - although this is not mandatory. Accreditation is not a requirement but a matter of market confidence. Conformity assessment schemes operate in the market on both an accredited and non-accredited basis.

7 Requirements for performing an assessment

A process assessment shall be performed in accordance with the requirements of ISO/IEC 33002:2015, Clause 4.

In addition, in order to meet requirements for a conformity assessment scheme in accordance with this International Standard, a number of additional requirements are defined for performing an assessment. Specific conformity assessment schemes may establish further additional requirements.

The minimum content of the assessment report as defined in ISO/IEC 33002:2015, 4.2.6 shall be extended to include all the relevant example assessment report contents defined in ISO/IEC 33002:2015, Annex B.

When an organization has legacy products that are to be maintained, or development projects that are well advanced in time and which pre-date the deployment of relevant processes, then the organization shall provide a policy statement on the applicability of the processes to these products and projects especially in the context of maintenance and any re-qualification that needs to be addressed.

If an assessment is to be performed as a continuous or iterative process over a defined period of time, the defined period of time shall not exceed six months.

When development lifecycle processes are included within the scope of assessment, adequate coverage of the representative lifecycles used within the organization shall be included in the representative sample.

Where system and/or software lifecycle processes are included within the scope of assessment the representative sample shall target coverage of a minimum of 20 % of projects that during the last 12 months

— have completed,

— are in maintenance, or

— are in development.

The assessment body shall make the decision on the sample size for the assessment. The assessment sample shall not be selected more than three months before the performance of the assessment.

Prior to the formal assessment activity, a pre-assessment activity may optionally be performed with the goal of identifying indicative gaps in practice and performance.

A pre-assessment if performed shall be according to a defined class of assessment with reference to ISO/IEC 33002:2015, 4.6 with the exception that a minimum of only one process instance need be identified for each process within the scope of the assessment and the assessment need only be performed by an assessment team comprising at minimum a single lead assessor.

A pre-assessment if performed shall result in an assessment report which may contain a reduced content but which shall detail any weaknesses and potential improvements to be considered for implementation by the organization.

Any process attribute ratings up to the highest process quality level achieved may be carried forward from a pre-assessment activity to a subsequent assessment on condition that the assessment shall be performed within six months of the pre-assessment activity.

8 Guidance on planning and performing an assessment

8.1 General

The following provides additional guidance on the approach to planning and performing an assessment.

8.2 Assessment approach

Assessment approaches are designed to meet a variety of needs. Each will have a designated purpose and approach to the class of assessment to be performed. Factors that affect the scope of an assessment include the products, services, projects and life cycle coverage.

Assessments in general are performed by either verification or discovery approach (or a combination of both).

In a verification approach, during the planning phase, information and artefacts that satisfy the purpose and outcomes of a process and the process attribute outcomes are collected which can be further verified by the assessment team. Such an approach assumes that the organization understands the relevant process assessment model, has mapped their processes to the model, and understands the level of implementation of those processes.

A discovery approach may be a preferable approach when an assessment involves a small sample size or where the required result is a process quality level rating. When assessing organizational process maturity and/or a high maturity organization a combination of approaches is often beneficial.

Overall resources for a verification and discovery approach are generally similar but the balance of resources in the use of external and internal resources may differ. A verification approach will normally require additional planning time but overall on-site assessment time may be reduced.

Internal assessors or process improvement groups may be engaged in both the planning and the performance of an assessment, however, if internal personnel are engaged in **analysis and rating activities** during the course of an assessment, then the assessment may not be considered as independent of the organization being assessed.

8.3 Assessment scope

The organizational unit should have deployed all of the processes within the scope of the assessment. If all the processes are not deployed in the organizational unit, then the scope of the assessment or the selection of organizational unit should be reconsidered.

The following factors should be used in determining the scope of an assessment:

— The management structure, which may have varying degrees of overlap with executive reporting and project management.

— The impact of shared processes, where differences in lifecycle tools and techniques may reduce the amount of commonality.

— Level of organizational responsibilities for defining policies.

— Geographical dispersion, which may impact the time to perform an assessment and the ease by which the assessment team can maintain continuity.

— Degree of collaboration with other organizations, where an organization may be involved with in- and/or out-sourcing.

— Desire to have a common process improvement focus across the organizations.

— Cohesion and coupling of processes within a recognizable organizational unit.

— The inclusion of all relevant activities, where no significant development areas should be excluded.

Any process quality level associated with “established” processes (e.g. process capability level 3 as defined in ISO/IEC 33020) will NOT normally be assessed unless a process is institutionalised and deployed. A process would not normally be considered deployed unless relevant artefacts are available for a minimum period of three months to six months prior to assessment and institutionalized across the scope of the organization.

Any process quality level associated with “measured” or “predictable” processes (e.g. process capability level 4 as defined in ISO/IEC 33020) will NOT normally be assessed unless data from defined process measures are available. Historical data from defined process measures may typically take 6-18 months to collect and analyse.

8.4 Assessment sample

The sample size, type and amount of objective evidence should be sufficient to match the scope and class of the assessment. The representative sample of process instances will be based on a number of factors that include:

— management processes;

— business risks;

— representative life cycles;

— product line coverage;

— site coverage;

— size of operations, projects, programmes or product lines;

— safety, security, or regulatory factors;

— geographic areas;

— value to the business;

— constraints on availability;

— use of internal and/or external suppliers.

For a Class 1 or Class 2 assessment, if the desired target process profile is NOT achieved, the sample of process instances assessed may optionally be increased to the maximum available within the representative sample. The increase in the sample of process instances ensures fair representation of results across the sample. An increase in sample size for process instances will not normally be performed for a Class 3 assessment unless specifically identified within the assessment plan.

8.5 Assessment performance

The assessment team will perform the assessment according to the assessment plan and schedule. The assessment plan and schedule may be revised during performance of assessment.

The level of rigour for which an assessment is to be performed is determined by the class of assessment. The level of rigour applied to the assessment determines the level of confidence in the assessment results and the reliability desired. The level of rigour required for the class of assessment will also determine the approach taken to data collection.

Data acquired may be on the basis of direct or indirect evidence. Direct evidence can be defined as *evidence that answers a question*, whereas indirect evidence *does not give a definite answer but allows you to draw a conclusion*.

8.6 Assessment data collection

The data collection approach utilized directly influences the reliability of, and level of confidence in the assessment results.

Depending on the level of rigour required by the class of assessment, different quantities of direct and indirect evidence from a combination of sources from various parties may be required to make decisions.

Sources of evidence may comprise the following:

— affirmations — testimony from personnel that describes their performance within a process;

— observations — any behaviour or infrastructure observed by a member of the assessment team that is relevant to the rating of the process;

— work products — tangible artefacts produced as a direct (e.g. specification) or indirect (e.g. meeting minutes) result of a process.

Dependent on the assessment approach other sources of evidence may also be used such as statistically valid questionnaire-based data. Such questionnaires are considered to be affirmations in the above sources of evidence.

8.7 Determining organizational process maturity level

A process assessment is performed according to the requirements of ISO/IEC 33002, for the selected process assessment model(s) and process measurement framework for a given process quality characteristic, to obtain a set of process profiles.

Providing the scope of assessment embraces all of the processes in the minimum basic process set and the extended process sets, where relevant, for a given maturity level in a selected maturity model, then the organizational process maturity level can be derived from the set of process profiles that result from an assessment.

ISO/IEC 33004 defines the requirements for process reference, process assessment and maturity models.

An organizational process profile can be determined from the set of process profiles according to the rating and aggregation method employed. Rating and aggregation methods are defined in the selected process measurement framework. The actual rating and aggregation method employed will be defined as part of the assessment input when performing an assessment. The use of aggregation of ratings may vary according to the class, scope and context of an assessment. ISO/IEC 33020 defines a set of rating and aggregation methods as part of a process measurement framework for process capability.

The rules for deriving an organizational process maturity level rating from the set of process profiles resulting from an assessment are specified as part of the maturity model.

Figure 1 illustrates how an organizational process maturity level is determined from the set of process profiles resulting from a process assessment.

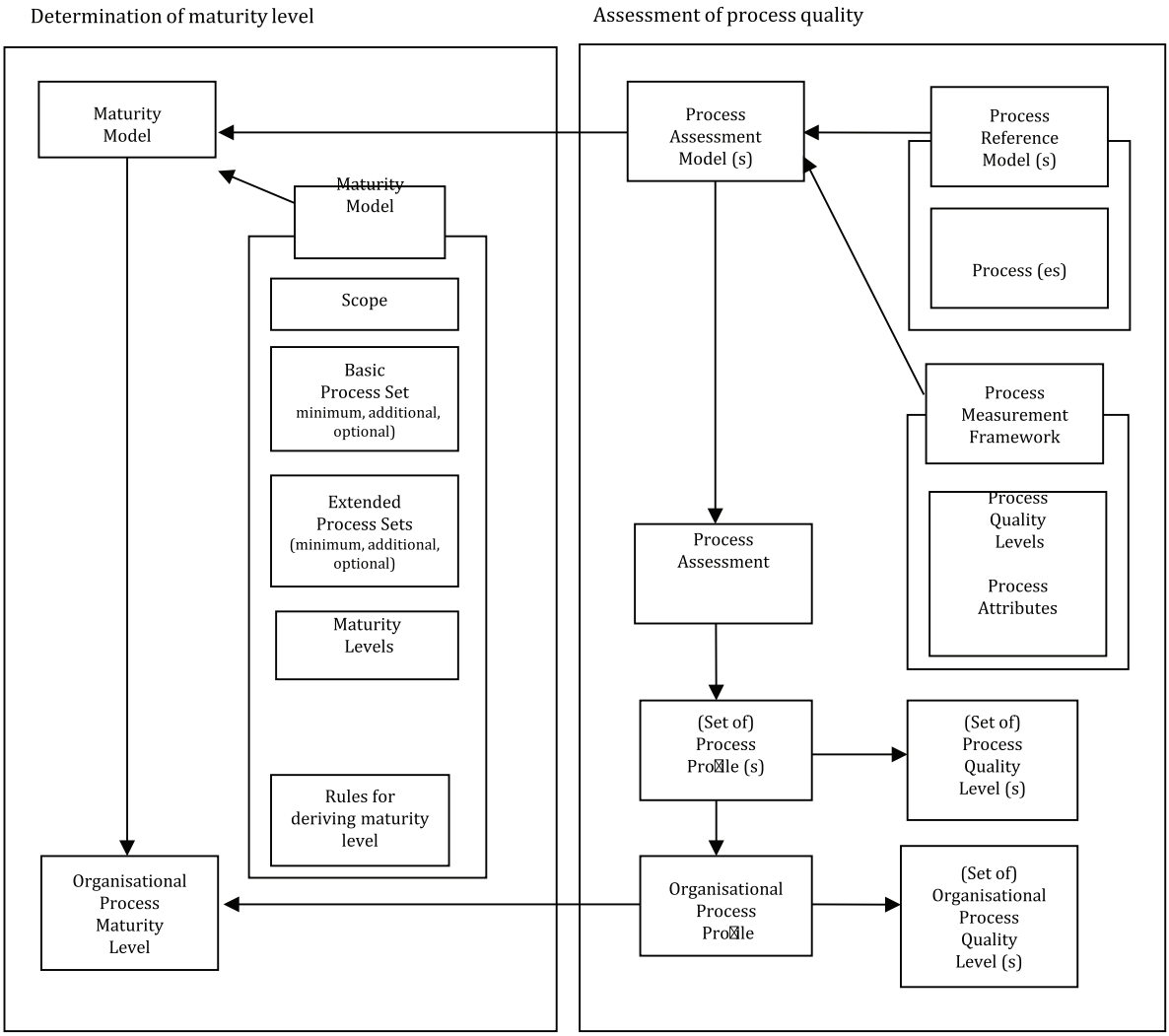

Figure 1 — Deriving a maturity level from the set of process profiles from an assessment

8.8 Assessment reporting

A draft presentation of findings and/or a draft assessment report will normally be delivered on the last day of an assessment. Following a period of review and refinement, the assessment report will be issued.

There are number of scenarios that frequently occur following the issuance of the assessment report:

— Minor weaknesses affecting ratings are left to be cleared following the assessment usually within one month (maximum of three months).

— Major gaps in performance are left to be cleared following the assessment usually within three months (maximum of six months) after which a limited scope re-assessment is performed.

— Additional opportunities for improvement are identified which are to be acted upon at the discretion of the client.

A response to any weaknesses and/or potential opportunities for improvements is normally requested to be provided within four weeks following the issuance of the assessment report.

9 Requirements for review and attestation

9.1 Review and attestation

Review and attestation are presented as a combined activity, but can by carried out by different people. Neither activity shall be carried out by a person who has been involved in the performance of the assessment activities.

Prior to the issuance of the approved assessment report, the assessment report, assessment data and any other findings from the assessment shall be reviewed as to the conformity of the object with the specified requirements.

In the case that the evidence of conformity is incomplete and one or more of the specified requirements has been overlooked, the report shall be returned to the lead assessor for remedial action to be taken. Relevant assessment activities may need to be repeated and a further report shall be presented for review. By agreement with the reviewer, the report need only deal with the changes which have been made.

Following review and attestation a recommendation shall be made (or otherwise) for a statement of conformity to be issued.

9.2 Statement of conformity

Based on a positive recommendation a statement of conformity shall be issued. The statement of conformity provides unequivocal identification of the object and of the specified requirements with which it has been found to conform.

A statement of conformity issued by a first or a second party is generally known as a "declaration of conformity", whereas a statement of conformity issued by a third-party body is generally referred to as a "certificate of conformity".

ISO/IEC 17050 provides information on the content of a supplier's declaration of conformity. ISO/IEC 17050 specifies requirements applicable when the organization responsible for fulfilment of specified requirements (supplier) provides a declaration that a product (including service), process, management system, person or body is in conformity with specified requirements. A supplier's declaration of conformity can be substantiated by the assessment report issued in accordance with Clause 7.

9.3 Certificate of conformity

A certificate of conformity shall only be issued in accordance with this International Standard for a class 1 or class 2 assessment (as defined in ISO/IEC 33002:2015, 4.6.1) performed by a third party with Category A independence (as defined in ISO/IEC 33002:2015, Annex A).

Any certificate of conformity issued shall contain, at minimum, the following:

— a certificate unique identifier;

— a certificate issue date;

— a certificate validity period (or valid until date);

— identification of the organizational unit;

— address of the organizational unit;

— scope of supply of the organizational unit;

— identification of the body performing the assessment (assessment body);

— category of independence of the body performing the assessment (assessment body);

— class of assessment;

— identification of the applicable standard(s) (requirements);

— identification of the process assessment model(s);

— identification of the process measurement framework;

— identification of the maturity model (if applicable);

— processes in the scope of the assessment;

— process profile or the process quality level (if relevant) for each process and/or the organizational process maturity level achieved (if relevant)

— signature of the lead assessor and/or body performing the assessment (assessment body).

Where the scope of conformity assessment does NOT include periodic surveillance in accordance with Clause 10, then the certificate validity period (or valid until date) shall state "no validity period specified".

Where the scope of conformity assessment does include periodic surveillance in accordance with Clause 10, then the certificate validity period shall be defined as a three year period and after which a full re-assessment shall take place.

It is general practice to issue a certificate of conformity in two parts; one part with the headline information and one part as an addendum with the detailed information. If a certificate of conformity is issued in multiple parts, each certificate shall reference the other parts.

10 Requirements for surveillance

10.1 General

Where continuing assurance is needed or desirable to maintain the validity of an assessment result, the scope of conformity assessment can be extended to include periodic surveillance within a defined cycle.

10.2 Surveillance assessments

At intervals between the issuance date of the certificate of conformity and its validity date, surveillance assessments shall be performed by the assessment body.

The surveillance assessment shall be performed according to the defined class of assessment (ISO/IEC 33002:2015, 4.6) except that a minimum of only one process instance need be identified for each process within the scope of the assessment and the assessment need only be performed by an assessment team comprising at minimum a single lead assessor.

Surveillance assessments shall cover all processes and process quality levels within the scope of the certificate of conformity during the defined cycle, but not necessarily on each surveillance visit.

For organizational process maturity assessments, at minimum the basic process set of processes plus a defined (by the assessment body) subset of the extended set of processes shall be included within the scope of any surveillance assessment.

A surveillance assessment shall result in an assessment report with reduced content but which shall detail any weaknesses and potential improvements to be considered for implementation by the organization.

A response to any weaknesses and potential improvements shall be provided within four weeks following the issuance of the assessment report.

The surveillance assessment result shall not affect the period of validity of the certificate of conformity previously issued. However, failure to perform a surveillance assessment shall result in withdrawal of the certificate of conformity.

The scope of a surveillance assessment shall also include a review of the

— progress on the findings and process improvement opportunities identified during the previous assessment,

— changes made to the process management system with implemented changes sampled to ensure adherence to the continuing process quality characteristic,

— progress and status of process improvements from other relevant sources,

— results of any performed audits, measurement analysis, lessons learned problem trend analysis and causal analysis.

The outcome of the review shall be documented with an action list (where necessary).

11 Requirements for the operation of various bodies performing inspection

ISO/IEC 17020 has the objective of promoting confidence in bodies performing inspection.

ISO/IEC 17020 covers the activities of inspection bodies whose work can include the examination of materials, products, installations, plants, processes, work procedures or services, and the determination of their conformity with requirements and the subsequent reporting of results of these activities to clients and, when required, to authorities. Such work normally requires the exercise of professional judgement in performing inspection, in particular when assessing conformity with general requirements.

ISO/IEC 17020 can be used as a requirements document for accreditation or peer assessment or other assessments. Inspection activities can overlap with certification activities where these activities have common characteristics.

The term “inspection” is synonymous with the term “process assessment” as defined in ISO/IEC 33001:2015, 3.2.15 and as performed according to ISO/IEC 33002:2015, Clause 4.

Table 1 below provides a set of application notes to amplify the clauses of ISO/IEC 17020 in the context of use with the ISO/IEC 33001 to ISO/IEC 33099 family of standards.

Any ISO/IEC 33002 requirements stated in the application notes are supplementary to meeting the requirements of the relevant clauses of ISO/IEC 17020.

Table 1 — Application notes to amplify the clauses of ISO/IEC 17020 in the context of use with the ISO/IEC 33001 to ISO/IEC 33099 family of standards

ISO/IEC 17020:2012 **Clause**	**Application notes**
1 Scope	
2 Normative references	
3 Terms and definitions	

Table 1 *(continued)*

ISO/IEC 17020:2012 **Clause**	**Application notes**
3.1 Inspection	Inspection is synonymous with process assessment as defined in ISO/IEC 33001:2015, 3.2.15 and as performed according to ISO/IEC 33002:2015, Clause 4. ISO/IEC 33002:2015, 4.6 states that assessment is performed according to the class of assessment on the basis of specific requirements and general requirements. ISO/IEC 33002:2015, 4.2.4 refers to the use of assessor judgement when analysing validated data. ISO/IEC 33002:2015, 4.2 states that assessors shall be competent on the basis of appropriate education, training and experience, including domain experience, to perform the required class of assessment and make professional judgement.
3.2 Product	
3.3 Process	
3.4 Service	
3.5 Inspection body	Inspection body is synonymous with assessment body or the body performing assessment (ISO/IEC 33002:2015, Annex A). ISO/IEC 17020 defines three types of inspection body (Types A, B and C) whereas ISO/IEC 33002:2015, Annex A sets out a typology to categorize the independence of different types of body and the make-up of the assessment team performing an assessment (Categories A, B, C and D). It has been ascertained in consultation with relevant Accreditation Bodies that a single organization may operate as a Type A, B and C inspection body where there is market confidence.
3.6 Inspection system	
3.7 Inspection scheme	
3.8 Impartial	
3.9 Appeal	
3.10 Complaint	
4 General requirements	
4.1 Impartiality and independence	ISO/IEC 17020 defines three types of inspection body (Types A, B and C) whereas ISO/IEC 33002:2015, Annex A sets out a typology to categorize the independence of different types of body and the make-up of the assessment team performing an assessment (Categories A, B, C and D). It has been ascertained in consultation with relevant Accreditation Bodies that a single organization may operate as a Type A, B and C inspection body where there is market confidence.
4.2 Confidentiality	ISO/IEC 33002:2015, 4.4.1 g) states requirements for controls for handling confidential information and non-disclosure.
5 Structural requirements	
5.1 Administrative requirements	
5.2 Organization and management	ISO/IEC 33002:2015, 4.3 states the roles and required responsibilities for the sponsor, lead assessor and assessor.
6 Resource requirements	

Table 1 *(continued)*

ISO/IEC 17020:2012 **Clause**	**Application notes**
6.1 Personnel	ISO/IEC 33002:2015, 4.4.1 i) requires criteria for the competence of the lead assessor to be defined. ISO/IEC 33002:2015, 4.3 requires that assessors shall be competent on the basis of appropriate education, training and experience, including domain experience, to perform the required class of assessment and make professional judgements. ISO/IEC 33002:2015, 4.3 states the roles and responsibilities for the sponsor, lead assessor and assessor(s) when performing an assessment.
6.2 Subcontracting	
7 Process requirements	
7.1 Inspection methods and procedures	ISO/IEC 33002:2015, 4.1 sets out the requirement for an assessment to be performed according to a documented assessment process. The documented assessment process shall prescribe the set of activities to be performed that meet all of the requirements defined in ISO/IEC 33002:2015, Clause 4.
7.2 Handling inspection items and samples	ISO/IEC 33002:2015, 4.4.1 d) 5) requires that the sample of products, services, lifecycle stages or projects within the assessment scope be defined as part of the assessment input prior to the data collection phase of an assessment. Subclause 8.4 provides guidance on sample selection.
7.3 Inspection records	ISO/IEC 33002:2015, 4.5 specifies the minimum contents of the assessment record. ISO/IEC 33002:2015, 4.2.6 specifies the minimum contents of the assessment report which provides traceability to the assessor(s) who performed the assessment.
7.4 Inspection reports and inspection certificates	ISO/IEC 33002:2015, 4.2.6 specifies requirements for and the minimum content of the assessment report. Clause 7 specifies additional requirements on the minimum content of the assessment report. Subclause 9.3 states requirements and minimum content for issuance of a certificate of conformity.
7.5 Complaints and appeals	
7.6 Complaints and appeals process	
8 Management system requirements	
8.1 Options	
8.1.1 General	ISO/IEC 33002:2015, 4.1 sets out the requirement for an assessment to be performed according to a documented assessment process. The documented assessment process shall prescribe the set of activities to be performed that meet all of the requirements defined in ISO/IEC 33002:2015, Clause 4.
8.1.2 Option A	
8.1.3 Option B	
8.2 Management system documentation (Option A)	
8.3 Control of documents (Option A)	
8.4 Control of records (Option A)	
8.5 Management review (Option A)	
8.5.1 General	
8.5.2 Review inputs	

Table 1 *(continued)*

ISO/IEC 17020:2012 **Clause**	**Application notes**
8.5.3 Review outputs	
8.6 Internal audits (Option A)	
8.7 Corrective actions (Option A)	
8.8 Preventive actions (Option A)	
Annex A (normative) Independence requirements for inspection bodies	ISO/IEC 17020 defines three types of inspection body (Types A, B and C) whereas ISO/IEC 33002:2015, Annex A sets out a typology to categorize the independence of different types of body and the make-up of the assessment team performing an assessment (Categories A, B, C and D). It has been ascertained in consultation with relevant Accreditation Bodies that a single organization may operate as a Type A, B and C inspection body where there is market confidence.
A.1 Requirements for inspection bodies (Type A)	
A.2 Requirements for inspection bodies (Type B)	
A.3 Requirements for inspection bodies (Type C)	
Annex B (informative) Optional elements of inspection reports and certificates	ISO/IEC 33002:2015, 4.2.6 specifies requirements for and the minimum content of the assessment report. Clause 7 specifies additional requirements on the minimum content of the assessment report. Subclause 9.3 states requirements and minimum content for issuance of a certificate of conformity.

Bibliography

[1] ISO/IEC 17007, *Conformity assessment — Guidance for drafting normative documents suitable for use for conformity assessment*

[2] ISO/IEC 17011:2004, *Conformity assessment — General requirements for accreditation bodies accrediting conformity assessment bodies*

[3] ISO/IEC 17024:2003, *Conformity assessment – General requirements for bodies operating certification of persons*

[4] ISO/IEC 17030:2003, *Conformity assessment — General requirements for third-party marks of conformity*

[5] ISO/IEC 17040:2005, *Conformity assessment — General requirements for peer assessment of conformity assessment bodies and accreditation bodies*

[6] ISO/IEC 17050-1:2004, *Conformity assessment — Supplier's declaration of conformity — Part 1: General requirements*

[7] ISO/IEC 17050-2:2004, *Conformity assessment — Supplier's declaration of conformity — Part 2: Supporting documentation*

[8] ISO/IEC Guide 23:1982, *Methods of indicating conformity with standards for third-party certification systems*

[9] ISO/IEC Guide 27:1983, *Guidelines for corrective action to be taken by a certification body in the event of misuse of its mark of conformity*

[10] ISO/IEC Guide 60:2004, *Conformity assessment — Code of good practice*

[11] ISO/IEC Guide 68:2002, *Arrangements for the recognition and acceptance of conformity assessment results*

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

[13] ISO/IEC 33004, *Information technology — Process assessment — Requirements for process reference, process assessment and maturity models*

[14] ISO/IEC 33020:2015, *Information technology — Process assessment — Process measurement framework for assessment of process capability*

[15] ISO/IEC 17065:2012, *Conformity assessment — Requirements for bodies certifying products, processes and services*

[16] The Conformity Assessment Toolbox, ISO Central Secretariat, ISBN 978-92-67-10511-6

ICS 35.080

Price based on 18 pages