आंकड़ो की गुणवत्ता

भाग 62 आंकड़ा गुणवत्ता प्रबंधन — संगठनात्मक प्रक्रिया परिपक्वता मूल्यांकन — प्रक्रिया मूल्यांकन से संबंधित मानकों का अनुप्रयोग

Data Quality

Part 62 Data Quality Management — Organizational Process Maturity Assessment — Application of Standards Relating to Process Assessment

ICS 25.040.40

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NATIONAL FOREWORD

This Indian Standard (Part 62) which is identical to ISO 8000-62 : 2022 'Data quality — Part 62: Data quality management — Organizational process maturity assessment — Application of standards relating to process assessment' issued by the International Organization for Standardization (ISO) was adopted by the Bureau of Indian Standards on recommendation of the Industrial Automation Systems and Robotics Sectional Committee and approval of the Production and General Engineering Division Council.

Other parts in this series are:

Part 1   Overview

Part 2   Vocabulary

Part 8   Information and data quality — Concepts and measuring

Part 60   Data quality management — Overview

Part 61   Data quality management — Process reference model

Part 63   Data quality management — Process measurement

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A list of all parts in the IS/ISO 8000 series can be found on the Bureau of Indian Standaards website.

Contents

Introduction

The ability to create, collect, store, maintain, transfer, process and present information and data to support business processes in a timely and cost effective manner requires both an understanding of the characteristics of the information and data that determine its quality, and an ability to measure, manage and report on information and data quality.

ISO 8000 defines characteristics of information and data that determine its quality, and provides methods to manage, measure and improve the quality of information and data.

When assessing the quality of data, it is useful to perform the assessment in accordance with documented methods. It is also important to document the tailoring of standardized methods with respect to the expectation and requirements pertinent to the business case at hand.

ISO 8000 includes parts applicable to all types of data and parts applicable to specific types of data. ISO 8000 can be used independently or in conjunction with quality management systems.

There is a limit to data quality improvement when only the nonconformity in data is corrected, since the nonconformity can recur in other data. However, when the root causes of the data nonconformity and their related data are traced and corrected through data quality management processes, recurrence of the same type of data nonconformity can be prevented. Therefore, a framework for process-centric data quality management is required to improve data quality more effectively and efficiently. Furthermore, data quality can be improved by assessing processes and changing underperforming processes found during that assessment.

This document specifies how organizations can use a maturity model in assessing their process maturity with respect to data quality management as specified in ISO 8000-61.

NOTE   Future editions of this document will specify appropriate assessment indicators and, therefore, provide a complete maturity model.

This assessment requires the use of assessment indicators and can use the measurement stack specified by ISO 8000-63 to determine these indicators.

This document can be used on its own or in conjunction with other parts of ISO 8000.

This document is intended for use by those actors that have a vested interest in information or data quality, with a focus on one or more information systems both inter- and intra-organization views, throughout all data life cycle phases.

Annex A contains an identifier that unambiguously identifies this document in an open information system.

Indian Standard

DATA QUALITY

PART 62 DATA QUALITY MANAGEMENT — ORGANIZATIONAL PROCESS MATURITY ASSESSMENT — APPLICATION OF STANDARDS RELATING TO PROCESS ASSESSMENT

1 Scope

This document specifies particular elements of a maturity model. These elements conform to ISO/IEC 33004.

Organizations can use these elements in combination with their own assessment indicators to determine the maturity level of processes for data quality management as specified by ISO 8000-61.

The following are within the scope of this document:

— some of the elements of a model for assessing organizational process maturity;

— identifying those elements that exist in other standards (process capability levels, process attributes, ordinal scale for measuring process attributes and the scheme for derivation of process capability levels from process attribute rating);

— specifying six maturity levels and process profiles to indicate when organizations have achieved each of the maturity levels;

— providing guidance on how to assess the maturity level of an organization.

Methods or procedures to improve organizational maturity are outside the scope of this document.

This document can be used by the organization itself or by another party (including certification bodies) to perform assessment of the maturity.

This document can be used in conjunction with, or independently of, quality management systems standards.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 8000-2, *Data quality — Part 2: Vocabulary*

ISO 8000-61, *Data quality — Part 61: Data quality management: Process reference model*

ISO/IEC 33001, *Information technology — Process assessment — Concepts and terminology*

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

ISO/IEC 33004:2015, *Information technology — Process assessment — Requirements for process reference, process assessment and maturity models*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 8000-2 and ISO/IEC 33001 apply.

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

— ISO Online Browsing Platform: available at http://www.iso.org/obp;

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

4 Assessing organizational data quality management maturity

4.1 Purpose of organizational process maturity levels

The purpose of assessing the organizational process maturity level for data quality management is to understand how well the organization is fulfilling the requirements identified by the process reference model for data quality management specified by ISO 8000-61.

This document specifies the steps by which to assess organizational process maturity levels, as illustrated in Figure 1.

NOTE   ISO/IEC/IEEE 31320-1 provides details on the notation used in this figure, which is an IDEF0 A0 diagram.
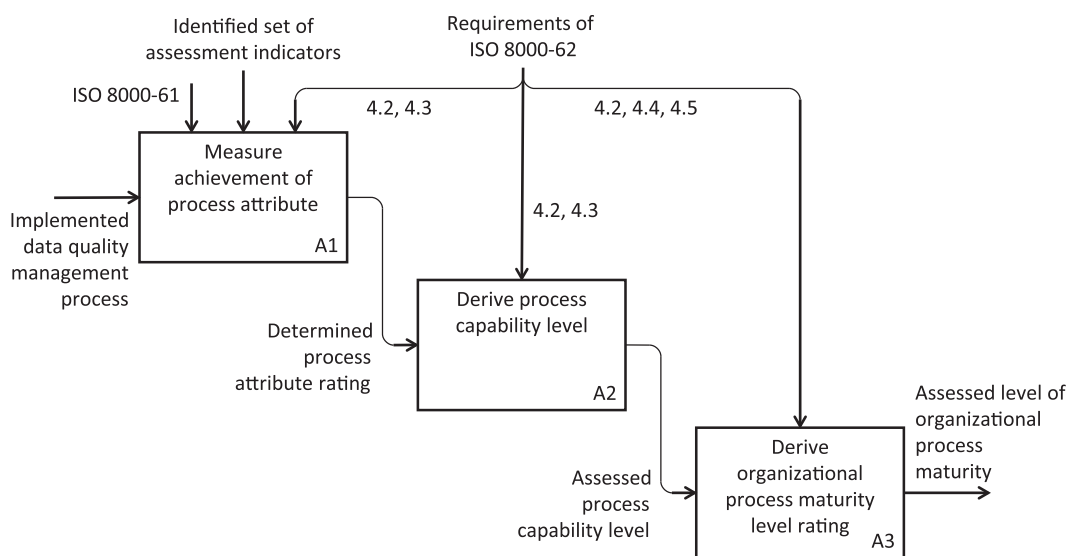
Figure 1 — Assessing organizational data quality management maturity using ISO 8000-62

4.2 Process capability levels and process attributes

Process capability shall be measured by a six-point ordinal scale that enables capability to be assessed from incomplete (the bottom end of the scale) through innovating (the top end of the scale), as specified in ISO/IEC 33020. This scale represents increasing capability of the implemented process, from failing to achieve the process purpose through to the process being the subject of continual improvement.

Within the process measurement framework specified by ISO/IEC 33020, a process attribute is a measurable property of process capability. A process attribute rating is a judgement of the degree of achievement of the process attribute for the assessed process.

Computing the process capability level requires observation and assessment of the evidence of achieving individual process attributes. Table 1 summarizes these levels and the corresponding process attributes. ISO/IEC 33020:2015, 5.2, provides a full explanation of the process capability levels and process attributes.

Table 1 — Process capability levels and process attributes

Process capability level	Process attribute	
Incomplete process	Not applicable	
Performed process	PA.1.1	Process performance
Managed process	PA.2.1	Performance management
	PA.2.2	Work product management
Established process	PA.3.1	Process definition
	PA.3.2	Process deployment
Predictable process	PA.4.1	Quantitative analysis
	PA.4.2	Quantitative control
Innovating process	PA.5.1	Process innovation
	PA.5.2	Process innovation implementation

4.3 Rating process attributes and process capability

Each process attribute shall be measured using an ordinal scale, as specified in ISO/IEC 33020:2015, 5.3, and summarized in Table 2.

Table 2 — Ordinal scale for measuring process attributes

Ordinal	Meaning	Degree of achievement of the process attribute
N - Not achieved	There is little or no evidence of the defined process attribute in the assessed process.	0 to ≤15 %
P - Partially achieved	There is some evidence of an approach to, and some achievement of, the defined process attribute in the assessed process. Some aspects of achievement of the process attribute can be unpredictable.	>15 % to ≤50 %
L - Largely achieved	There is evidence of a systematic approach to, and significant achievement of, the defined process attribute in the assessed process. Some weaknesses related to this process attribute can exist in the assessed process.	>50 % to ≤85 %
F - Fully achieved	There is evidence of a complete and systematic approach to, and full achievement of, the defined process attribute in the assessed process. No significant weaknesses related to this process attribute exist in the assessed process.	>85 % to ≤100 %

Assessment indicators are the means by which to gather the evidence that determines the degree of achievement of each process attribute.

Assessors shall identify a set of assessment indicators that are suitable for the data quality management processes from the process reference model specified by ISO 8000-61.

EXAMPLE   The assessor uses the measurement stack from ISO 8000-63 to create an appropriate set of assessment indicators.

The process capability level of each process shall be derived from the determined process attribute ratings, as specified in ISO/IEC 33020:2015, 5.6, and summarized in Table 3.

Table 3 — Derivation of process capability levels from process attribute ratings

Process capability level	Process attribute	Process attribute rating
Level 1	PA.1.1. Process performance	Largely or fully
Level 2	PA.1.1. Process performance	Fully
	PA.2.1. Performance management	Largely or fully
	PA.2.2. Work product management	Largely or fully
Level 3	PA.1.1. Process performance	Fully
	PA.2.1. Performance management	Fully
	PA.2.2. Work product management	Fully
	PA.3.1. Process definition	Largely or fully
	PA.3.2. Process deployment	Largely or fully
Level 4	PA.1.1. Process performance	Fully
	PA.2.1. Performance management	Fully
	PA.2.2. Work product management	Fully
	PA.3.1. Process definition	Fully
	PA.3.2. Process deployment	Fully
	PA.4.1. Quantitative analysis measurement	Largely or fully
	PA.4.2. Quantitative control	Largely or fully
Level 5	PA.1.1. Process performance	Fully
	PA.2.1. Performance management	Fully
	PA.2.2. Work product management	Fully
	PA.3.1. Process definition	Fully
	PA.3.2. Process deployment	Fully
	PA.4.1. Quantitative analysis measurement	Fully
	PA.4.2. Quantitative control	Fully
	PA.5.1. Process innovation	Largely or fully
	PA.5.2. Process innovation implementation	Largely or fully

4.4 Scale of organizational data quality management maturity

4.4.1 General

This document specifies maturity levels that shall conform to the requirements of ISO/IEC 33004:2015, Clause 7, each of which identifies a combination of a set of processes for data quality management and the capability level at which the organization is performing those processes. Each set of processes includes all the processes from the lower levels of maturity.

Maturity shall be assessed on a six-point ordinal scale from immature (Level 0) to innovating (Level 5) as outlined in 4.4.2 to 4.4.6.

4.4.2 Maturity Level 0: Immature

The organization cannot demonstrate effective use of any of the basic processes for data quality management (as specified by ISO 8000-61) that is supporting operational processes. The organization has not provided evidence that data meet requirements.

4.4.3 Maturity Level 1: Basic

The organization can demonstrate that operational processes have access to data that meet requirements. These data are subject to appropriate security considerations. The organization has

not provided evidence of managing requirements and data processing activity. The organization is performing the following data quality management processes specified by ISO 8000-61:

— DQC.2. Data Processing;

— DRS.4. Data Security Management.

4.4.4 Maturity Level 2: Managed

The organization can demonstrate that operational processes make use of data for which the organization is managing requirements and managing the methods by which to perform data processing. The organization can provide evidence that data meet requirements. The organization is performing, in addition to all of those for maturity of Level 1, the following data quality management processes specified by ISO 8000-61:

— DQP.1. Requirements Management;

— DQC.1. Provision of Data Specifications and Work Instructions;

— DQC.3. Data Quality Monitoring and Control.

4.4.5 Maturity Level 3: Established

The organization can demonstrate that operational processes make use of data for which the organization has implemented common, repeatable processes for performing data quality management. The organization is performing, in addition to all of those for maturity of Level 2, the following data quality management processes specified by ISO 8000-61:

— DQP.2. Data Quality Strategy Management;

— DQP.3. Data Quality Policy/Standards/Procedures Management;

— DQP.4. Data Quality Implementation Planning;

— DRS.1. Data Architecture Management;

— DRS.3. Data Operations Management;

— RPV.1. Data Quality Organization Management.

4.4.6 Maturity Level 4: Predictable

The organization can demonstrate that operational processes make use of data for which the organization has implemented predictable processes for performing data quality management. This predictability involves measuring the performance of data quality management. The organization is performing, in addition to all of those for maturity of Level 3, the following data quality management processes specified by ISO 8000-61:

— DQA.1. Review of Data Quality Issues;

— DQA.2. Provision of Measurement Criteria;

— DQA.3. Measurement of Data Quality and Process Performance;

— DQA.4. Evaluation of Measurement Results;

— DRS.2. Data Transfer Management;

— RPV.2. Human Resource management.

4.4.7 Maturity Level 5: Innovating

The organization can demonstrate that operational processes make use of data for which the organization has implemented processes for performing data quality management that is sustainable in meeting organizational goals. This sustainability involves applying appropriate innovation. The organization is performing, in addition to all of those for maturity of Level 4, the following data quality management processes specified by ISO 8000-61:

— DQI.1. Root Cause Analysis and Solution Development;

— DQI.2. Data Cleansing;

— DQI.3. Process Improvement for Data Nonconformity Prevention.

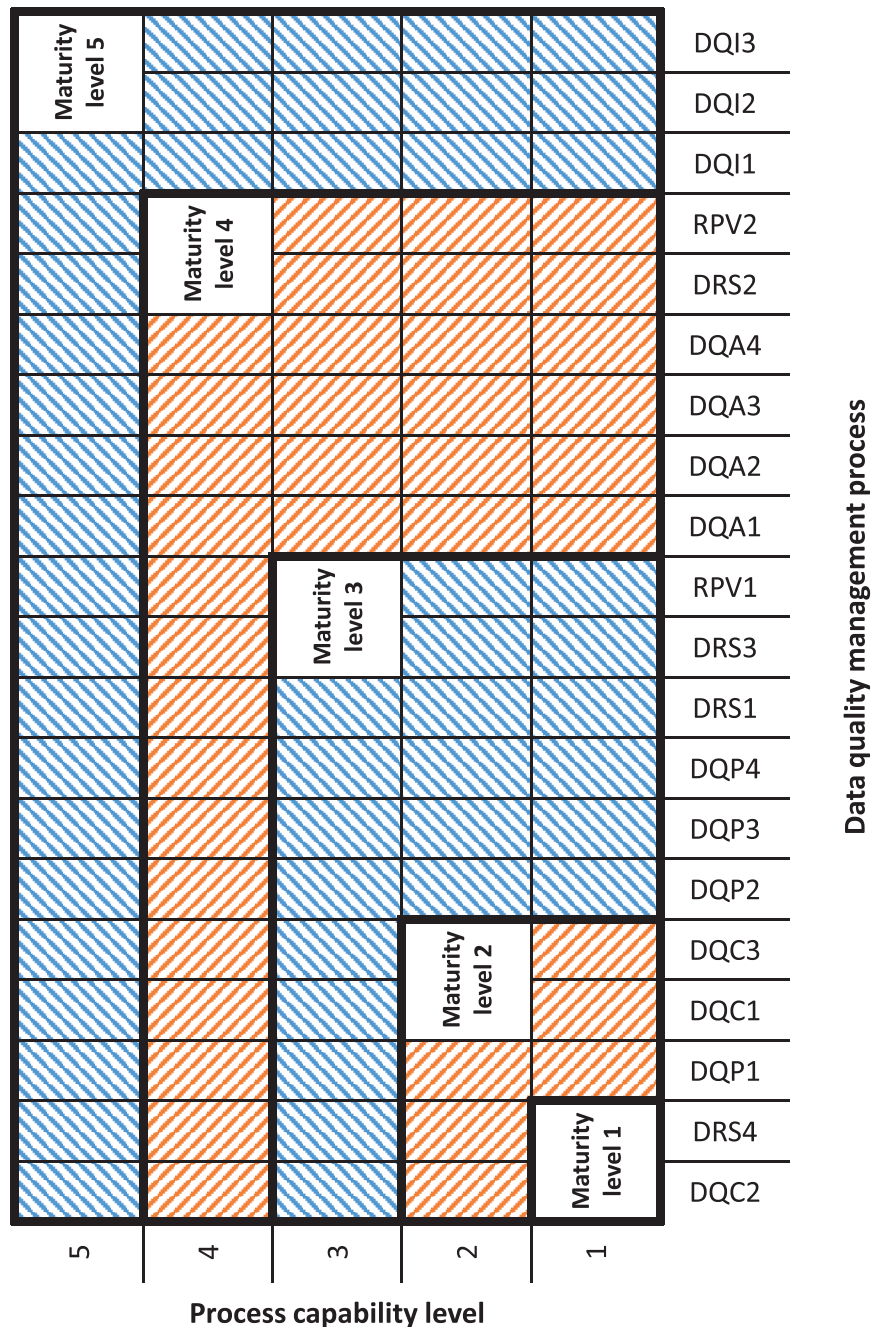## 4.5 Deriving organizational process maturity level rating from process profiles

4.5.1 Rules for deriving organizational process maturity level ratings

This document specifies rules for deriving an organizational process maturity level rating from the set of process profiles that result from an assessment. These rules shall conform to the requirements specified by ISO/IEC 33004.

The maturity level is determined by the process capability level (see 4.3) of the data quality management processes (as specified by ISO 8000-61). When all the processes necessary for a given maturity level (see 4.4) are achieving a specified process capability level then the organization has achieved that maturity level.

Figure 2 provides a summary of how each maturity level corresponds to a specific process profile. These levels are:

— Level 1: Basic (see 4.5.2);

— Level 2: Managed (see 4.5.3);

— Level 3: Established (see 4.5.4);

— Level 4: Predictable (see 4.5.5);

— Level 5: Innovating (see 4.5.6).

NOTE   The abbreviated labels for the data quality management processes are given in Annex B.

Figure 2 — Organizational process maturity level derived from process profiles

4.5.2   Maturity Level 1: Basic

A maturity of Level 1 is achieved by an organization when the assessed process profile consists of the following processes:

— DQC.2. Data Processing;

— DRS.4. Data Security Management;

each of which has achieved the following process attribute ratings (corresponding to a process capability of Level 1):

— PA.1.1. Process performance = largely or fully.

4.5.3 Maturity Level 2: Managed

A maturity of Level 2 is achieved by an organization when the assessed process profile consists of the following processes:

— DQC.2. Data Processing;

— DRS.4. Data Security Management;

— DQP.1. Requirements Management;

— DQC.1. Provision of Data Specifications and Work Instructions;

— DQC.3. Data Quality Monitoring and Control;

each of which has achieved the following process attribute ratings (corresponding to a process capability of Level 2):

— PA.1.1. Process performance = fully;

— PA.2.1. Performance management = largely or fully;

— PA.2.2. Work product management = largely or fully.

4.5.4 Maturity Level 3: Established

A maturity of Level 3 is achieved by an organization when the assessed process profile consists of the following processes:

— DQC.2. Data Processing;

— DRS.4. Data Security Management;

— DQP.1. Requirements Management;

— DQC.1. Provision of Data Specifications and Work Instructions;

— DQC.3. Data Quality Monitoring and Control;

— DQP.2. Data Quality Strategy Management;

— DQP.3. Data Quality Policy/Standards/Procedures Management;

— DQP.4. Data Quality Implementation Planning;

— DRS.1. Data Architecture Management;

— DRS.3. Data Operations Management;

— RPV.1. Data Quality Organization Management;

each of which has achieved the following process attribute ratings (corresponding to a process capability of Level 3):

— PA.1.1. Process performance = fully;

— PA.2.1. Performance management = fully;

— PA.2.2. Work product management = fully;

— PA.3.1. Process definition = largely or fully;

— PA.3.2. Process deployment = largely or fully.

4.5.5 Maturity Level 4: Predictable

A maturity of Level 4 is achieved by an organization when the assessed process profile consists of the following processes:

— DQC.2. Data Processing;

— DRS.4. Data Security Management;

— DQP.1. Requirements Management;

— DQC.1. Provision of Data Specifications and Work Instructions;

— DQC.3. Data Quality Monitoring and Control;

— DQP.2. Data Quality Strategy Management;

— DQP.3. Data Quality Policy/Standards/Procedures Management;

— DQP.4. Data Quality Implementation Planning;

— DRS.1. Data Architecture Management;

— DRS.3. Data Operations Management;

— RPV.1. Data Quality Organization Management;

— DQA.1. Review of Data Quality Issues;

— DQA.2. Provision of Measurement Criteria;

— DQA.3. Measurement of Data Quality and Process Performance;

— DQA.4. Evaluation of Measurement Results;

— DRS.2. Data Transfer Management;

— RPV.2. Human Resource management;

each of which has achieved the following process attribute ratings (corresponding to a process capability of Level 4):

— PA.1.1. Process performance = fully;

— PA.2.1. Performance management = fully;

— PA.2.2. Work product management = fully;

— PA.3.1. Process definition = fully;

— PA.3.2. Process deployment = fully;

— PA.4.1. Quantitative analysis measurement = largely or fully;

— PA.4.2. Quantitative control = largely or fully.

4.5.6 Maturity Level 5: Innovating

A maturity of Level 5 is achieved by an organization when the assessed process profile consists of the following processes:

— DQC.2. Data Processing;

— DRS.4. Data Security Management;

— DQP.1. Requirements Management;

— DQC.1. Provision of Data Specifications and Work Instructions;

— DQC.3. Data Quality Monitoring and Control;

— DQP.2. Data Quality Strategy Management;

— DQP.3. Data Quality Policy/Standards/Procedures Management;

— DQP.4. Data Quality Implementation Planning;

— DRS.1. Data Architecture Management;

— DRS.3. Data Operations Management;

— RPV.1. Data Quality Organization Management;

— DQA.1. Review of Data Quality Issues;

— DQA.2. Provision of Measurement Criteria;

— DQA.3. Measurement of Data Quality and Process Performance;

— DQA.4. Evaluation of Measurement Results;

— DRS.2. Data Transfer Management;

— RPV.2. Human Resource management;

— DQI.1. Root Cause Analysis and Solution Development;

— DQI.2. Data Cleansing;

— DQI.3. Process Improvement for Data Nonconformity Prevention;

each of which has achieved the following process attribute ratings (corresponding to a process capability of Level 5):

— PA.1.1. Process performance = fully;

— PA.2.1. Performance management = fully;

— PA.2.2. Work product management = fully;

— PA.3.1. Process definition = fully;

— PA.3.2. Process deployment = fully;

— PA.4.1. Quantitative analysis measurement = fully;

— PA.4.2. Quantitative control = fully;

— PA.5.1. Process innovation = largely or fully;

— PA.5.2. Process innovation implementation = largely or fully.

4.6 Assessment activities

In accordance with the requirements of ISO/IEC 33002, the assessment process shall start with commitment from the assessment sponsor to proceed.

The assessors shall conduct the following activities when performing assessment:

a) plan the assessment;

b) collect the data;

c) validate the data;

d) determine the results;

e) report the assessment.

NOTE ISO/IEC 33002:2015, 4.2, provides a further description of assessment activities.

EXAMPLE An example of performing an assessment is given in Annex C.

4.7 Roles, responsibilities and competence

The roles and responsibilities defined for the assessment shall include the following.

a) The sponsor of the assessment shall:

— designate an individual as lead assessor, who is responsible for checking the conformance of the assessment, and verify this individual has the required competences to perform the assessment;

— ensure sufficient other individuals are made available to form the assessment team to conduct the assessment;

— ensure the assessment team has access to all necessary resources.

b) The lead assessor shall:

— confirm the commitment of the sponsor to proceed with the assessment;

— understand and document the objectives for the assessment from the sponsor;

— verify that the assessment approach is in accordance with the requirements of this document;

— verify that the declared assessment scope accurately describes the actual scope being assessed;

— ensure that participants in the assessment are briefed on the purpose, scope and approach of the assessment;

— ensure that all members of the assessment team have knowledge and skills appropriate to their roles;

— ensure that all members of the assessment team have access to appropriate documented guidance on how to perform the defined assessment activities;

— ensure that the assessment team has the competences to use the tools chosen to support the assessment;

— confirm receipt of the assessment result deliverables by the sponsor;

— on completion of the assessment, verify and document the extent of conformance of the assessment to this document.

Assessor competence shall be determined from:

— education and training;

— skills and experience in process assessment;

— domain experience.

NOTE 1 Assessors can demonstrate competence by referring to a body of knowledge and by considering registration with a competency recognition scheme that accredits domain experience and qualifies against relevant methods and models.

NOTE 2 ISO/IEC TS 33030:2017, which provides a body of knowledge for the performance and application of process assessment, deals with assessor competences and appropriate education, training and experience, and includes mechanisms that can be used to demonstrate competence and to validate education, training and experience.

4.8 Assessment inputs

Assessors shall identify the inputs to the assessment process in accordance with the requirements for a Class 1 assessment as specified by ISO/IEC 33002. Such an assessment shall cover a minimum of four process instances for each process within the scope of the assessment (or all instances in there are fewer than four).

4.9 Assessment outputs

In accordance with the requirements of ISO/IEC 33002, the assessment shall generate two types of assessment outputs:

— assessment records;

— assessment reports.

NOTE ISO/IEC TS 33030:2017, Annex A, provides a description of assessment records and assessment reports.

Annex A
(informative)

Document identification

To provide for unambiguous identification of an information object in an open system, the object identifier

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{ iso standard 8000 part(62) version(1) }
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is assigned to this document. The meaning of this value is defined in ISO/IEC 8824-1, and is described in ISO 10303-1.

Annex B
(informative)

Abbreviated labels for the processes in the process reference model

Table B.1 shows the abbreviated labels for the processes that constitute the process reference model (see ISO 8000-61 for a detailed description of these processes).

Table B.1 — The data quality management process reference model

Top-level process	Intermediate process	Abbreviated label of process	Full process name
Implementation Process	Data Quality Planning	DQP.1	Requirements Management
		DQP.2	Data Quality Strategy Management
		DQP.3	Data Quality Policy/Standards/Procedures Management
		DQP.4	Data Quality Implementation Planning
	Data Quality Control	DQC.1	Provision of Data Specifications and Work Instructions
		DQC.2	Data Processing
		DQC.3	Data Quality Monitoring and Control
	Data Quality Assurance	DQA.1	Review of Data Quality Issues
		DQA.2	Provision of Measurement Criteria
		DQA.3	Measurement of Data Quality and Process Performance
		DQA.4	Evaluation of Measurement Results
	Data Quality Improvement	DQI.1	Root Cause Analysis and Solution Development
		DQI.2	Data Cleansing
		DQI.3	Process Improvement for Data Nonconformity Prevention
Data Related Support Process	—	DRS.1	Data Architecture Management
		DRS.2	Data Transfer Management
		DRS.3	Data Operations Management
		DRS.4	Data Security Management
Resource Provision Process	—	RPV.1	Data Quality Organization Management
		RPV.2	Human Resource management

Annex C
(informative)

Example of assessing organizational data quality management maturity level

This annex provides a fictional example to illustrate how to apply this document.

NOTE 1   This example has been built based on the principles covered by ISO/IEC TS 33030:2017.

The Town Hall of Beauty Village performs several operational processes and operates a quality management system certified as conforming to ISO 9001.

The Town Hall of Beauty Village is interested in assessing the level of organizational data quality management maturity according to this document. This assessment will look at how well several operational processes incorporate the data quality management processes specified by ISO 8000-61. The Town Hall appoints an assessment team to determine the maturity level of the organization.

In order to perform a Class 1 assessment, the team observes four process instances across the following processes: "Tax Revenue Administration", "Health Service Management", "Culture Management" and "Sport Management".

The assessment is planned according to the necessary steps (see 4.6) and the assessment team performs the following five activities.

a) Initiate the assessment. The assessment team identifies the relevant parties involved in the assessment and prepares a plan that defines who will participate from the assessment team and from the Town Hall in each activity.

   NOTE 2   See ISO/IEC TS 33030:2017, 4.2.

b) Plan the assessment. The assessment team creates a plan that defines who should participate from the assessment and from the Town Hall in each activity. The plan also identifies the sources of the evidence and when this evidence is to be gathered.

   NOTE 3   See ISO/IEC TS 33030:2017, 4.3.

c) Brief the assessment participants. Once the plan is approved, it is briefed to the assessment team and to those individuals who perform the processes to be assessed. Upon completion of this briefing, all participants are ready for the assessment to begin.

   NOTE 4   See ISO/IEC TS 33030:2017, 4.4.

d) Collect the data. Following the prepared plan, the assessment team gathers evidence, which is about how the selected instances of the organizational operational processes achieve the goals identified by each one of the process attributes (see Table C.1 for the evidence against each process attribute for the process "DQP.1. Requirements management"). This evidence is sought by the team for each one of the processes in the data quality management process reference model specified by ISO 8000-61.

   NOTE 5   See ISO/IEC TS 33030:2017, 4.5.

e) Validate the data. The assessment team confirms the objectivity of the evidence by inspection. The team decides whether the evidence is sufficient and representative enough to cover the assessment purpose and scope.

   NOTE 6   See ISO/IEC TS 33030:2017, 4.6.

f) Determine the results. Using the evidence gathered for all of the processes in the data quality management process reference model and following the requirements of this document for determining process attribute ratings (see 4.3), the assessment team determines those ratings and the process capability levels (see Table C.2). These levels provide the basis for determining the maturity level of the Town Hall (see Figure C.1).

   NOTE 7   See ISO/IEC TS 33030:2017, 4.7.

g) Report the assessment. Finally, the assessment team communicates the results of the assessment to the sponsor (the Town Hall) and to the involved stakeholders.

   NOTE 8   See ISO/IEC TS 33030:2017, 4.8.

The gathered evidence (see Table C.1) provides the basis for determining the process capability levels (see Table C.2), which in turn determine the maturity level of Town Hall of Beauty Village (see Figure C.1). The example shows that the Town Hall has achieved a maturity of Level 2 (managed).

Table C.1 — Evidence found for the process instances "Data Quality Requirements for Tax Revenue Administration" and "Data Quality Requirements for Culture Management"

Process attribute	Example of evidence
PA.1.1. Process performance	There exist two documents entitled "Data Quality Requirements for Tax Revenue Administration" and "Data Quality Requirements for Culture Management."
PA.2.1. Performance management	The assessment team finds how to collect data quality requirements in the quality control manual of the organization, which operates a quality management system certified as conforming to ISO 9001. Within the documents "Data Quality Requirements for Tax Revenue Administration" and "Data Quality Requirements for Culture Management", there are indications that they have been created by following the process for collecting data quality requirements.
PA.2.2. Work product management	The assessment team finds, in the quality control manual, specific requirements about how to document data quality requirements and to format the document. The documents "Data Quality Requirements for Tax Revenue Administration" and "Data Quality Requirements for Culture Management" contain indications about planning for capturing data quality requirements. Mr. Watson, for the document "Data Quality Requirements for Tax Revenue Administration", collected the requirement "Data about John Smith's taxation shall be complete and accurate" on 5 January 2015, and described and formatted the data quality requirement specification as stated in the manual of the organization.
PA.3.1. Process definition	As the "Tax Revenue Administration" process – according to the quality control manual of the Town Hall – addresses how to specifically manage "Data Quality Requirements", the process "DQP.1. Requirements management" has been defined.
PA.3.2. Process deployment	The assessment team has found the Town Hall runs several information systems that support "DQP.1. Requirements management". These information systems contain data about the process instances "Data Quality Requirements for Tax Revenue Administration for John Smith" and "Data Quality Requirements for Tax Revenue Administration for Juan López".
PA.4.1. Process measurement	The assessment team does not find any evidence about how the "DQP.1. Requirements management" process is measured. Consequently, the process instances "Data Quality Requirements for Tax Revenue Administration" and "Data Quality Requirements for Culture Management" do not provide any clues about how the process has been measured.

Table C.1 *(continued)*

Process attribute	Example of evidence
PA.4.2. Process control	As there are no indications as to how to take measurements, there are not established mechanisms to control the process "DQP.1. Requirements management" and, consequently, it is not possible to find evidence in the process instances "Data Quality Requirements for Tax Revenue Administration" and "Data Quality Requirements for Culture Management" to reflect these process instances have been controlled.
PA.5.1. Process innovation	The assessment team finds that the quality control manual indicates neither that the "Tax Revenue Administration" process has benefited from innovation in the process of data quality requirements management nor how to improve the process. In addition, there are no previous versions of "Data Quality Requirements for Tax Revenue Administration" and "Data Quality Requirements for Culture Management", showing that the way of managing data quality requirements has not been improved.
PA.5.2. Process innovation implementation	Lastly, as there are no innovations, the assessment team does not find evidence of changes to the definition, management and performance of the process "DQP.1. Requirements management". Therefore, the process instances do not reflect any innovative implementations

Table C.2 — Process attribute rating and process capability level

Process	PA.1.1	PA.2.1	PA.2.2	PA.3.1	PA.3.2	PA.4.1	PA.4.2	PA.5.1	PA.5.2	Process capability level
DQP.1	F	F	F	L	L	N	N	N	N	3
DQP.2	F	F	F	L	L	N	N	N	N	3
DQP.3	F	F	F	F	F	P	P	N	N	3
DQP.4	F	L	L	P	P	N	N	N	N	2
DQC.1	F	F	F	F	F	F	F	L	L	5
DQC.2	F	F	F	F	F	F	F	F	L	5
DQC.3	F	F	F	F	F	F	L	N	N	4
DQA.1	F	F	F	F	F	L	P	P	N	3
DQA.2	F	F	F	L	P	N	N	N	N	2
DQA.3	F	F	L	L	F	P	P	N	N	2
DQA.4	F	F	F	L	L	P	P	N	N	3
DQI.1	F	F	F	L	L	P	P	P	N	3
DQI.2	F	F	F	L	L	P	P	P	P	3
DQI.3	F	F	L	P	P	N	N	N	N	2
DRS.1	F	F	F	F	F	L	P	N	N	3
DRS.2	F	F	L	P	P	P	N	N	N	2
DRS.3	F	F	F	F	L	L	P	P	P	3
DRS.4	F	F	F	F	L	P	P	P	P	3
RPV.1	F	F	L	P	P	P	P	N	N	2
RPV.2	F	P	P	N	N	N	N	N	N	1

NOTE 9   ISO/IEC 33020, provides the detailed methods by which to calculate the indicators to determine the capability of the processes included in the processes reference model.

	Process capability level					Data quality management process
	5	4	3	2	1	
DQI3	✘	✘	✘	✔	✔	
DQI2	✘	✘	✔	✔	✔	
DQI1	✘	✘	✔	✔	✔	
RPV2	✘	✘	✘	✘	✔	
DRS2	✘	✘	✘	✔	✔	
DQA4	✘	✘	✔	✔	✔	
DQA3	✘	✘	✘	✔	✔	
DQA2	✘	✘	✘	✔	✔	
DQA1	✘	✘	✔	✔	✔	
RPV1	✘	✘	✘	✔	✔	
DRS3	✘	✘	✔	✔	✔	
DRS1	✘	✘	✔	✔	✔	
DQP4	✘	✘	✘	✔	✔	
DQP3	✘	✘	✔	✔	✔	
DQP2	✘	✘	✔	✔	✔	
DQC3	✘	✔	✔	✔	✔	
DQC1	✔	✔	✔	✔	✔	
DQP1	✘	✘	✔	✔	✔	
DRS4	✘	✘	✔	✔	✔	
DQC2	✔	✔	✔	✔	✔	

Figure C.1 — Maturity Level 2 for the Town Hall of Beauty Village is achieved

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Bibliography

[1]   ISO/TS 8000-1:2011, *Data quality — Part 1: Overview*

[2]   ISO 8000-60, *Data quality — Part 60: Data quality management: Overview*

[3]   ISO 8000-63, *Data quality — Part 63: Data quality management: Process measurement*

[4]   ISO/TS 8000-150:2011, *Data quality — Part 150: Master data: Quality management framework*

[5]   ISO/IEC 8824-1, *Information technology — Abstract Syntax Notation One (ASN.1) — Part 1: Specification of basic notation*

[6]   ISO 9001, *Quality management systems — Requirements*

[7]   ISO 10303-1, *Industrial automation systems and integration — Product data representation and exchange — Part 1: Overview and fundamental principles*

[8]   ISO/IEC/IEEE 31320-1, *Information technology — Modeling Languages — Part 1: Syntax and Semantics for IDEF0*

[9]   ISO/IEC/TS 33030:2017, *Information technology — Process assessment — An exemplar documented assessment process*

This document specifies how organizations can use a maturity model in assessing their process maturity with respect to data quality management as specified in IS/ISO 8000-61. This assessment requires the use of assessment indicators and can use the measurement stack specified by IS/ISO 8000-63 to determine these indicators.

The text of ISO standard has been approved as suitable for publication as an Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Wherever the words 'International Standard' appear referring to this standard, they should be read as 'Indian Standard'; and

b) Comma (,) has been used as a decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.

In this adopted standard, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards, which are to be substituted in their respective places, are listed below along with their degree of equivalence for the editions indicated.

International Standard	*Corresponding Indian Standard*	*Degree of Equivalence*
ISO 8000-2 Data quality — Part 2: Vocabulary	IS/ISO 8000-2 : 2022 Data quality: Part 2 Vocabulary	Identical
ISO 8000-61 Data quality — Part 61: Data quality management: Process reference model	IS/ISO 8000-61 : 2016 Data quality: Part 61 Data quality management — Process reference model	Identical

The Committee has reviewed the provisions of the following International Standards referred in this adopted standard and has decided that they are acceptable for use in conjunction with this standard:

International Standard	*Title*
ISO/IEC 33001	Information technology — Process assessment — Concepts and terminology
ISO/IEC 33002 : 2015	Information technology — Process assessment — Requirements for performing process assessment
ISO/IEC 33004 : 2015	Information technology — Process assessment — Requirements for process reference, process assessment and maturity models
ISO/IEC 33020 : 2015	Information technology — Process assessment — Process measurement framework for assessment of process capability

For the purpose of deciding whether a particular requirement of this standard is compiled with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value shall be the same as that of the specified value in this standard.

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected