

Information technology — Service management —

Part_15: Guidance on the application of Agile and DevOps principles in a service management system

Technologies de ~~l'information~~ — ~~l'information~~ — Gestion des services —

Partie_15: ~~Directives relatives à~~ Lignes directrices pour l'application des principes de "Agile" et
DevOps "DevOp"s dans les systèmes ~~un système de management~~ gestion des services

ISO/IEC DTS 20000-15

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Foreword

ISO (the International Organization for Standardization) ~~is a~~ and IEC (the International Electrotechnical Commission) ~~form the specialized system for worldwide federation of national standards standardization.~~ National bodies ~~(that are members of ISO member bodies).~~ The work ~~or IEC participate in the development of preparing~~ International Standards ~~is normally carried out through~~ ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International ~~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. ISO ~~collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.~~

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 ~~ISO documents~~ 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 2 (see www.iso.org/directives or www.iec.ch/members_experts/refdocs)).~~

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html see www.iso.org/iso/foreword.html. In the IEC, see www.iec.ch/understanding-standards.

This document was prepared by Joint Technical Committee ISO/IEC JTC-1, *Information technology*, Subcommittee SC-40, *IT Service Management and IT Governance*.

A list of all parts in the ISO/IEC 20000 series can be found on the ISO ~~website~~ and IEC websites.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html www.iso.org/members.html and www.iec.ch/national-committees.

Introduction

This ~~part of ISO/IEC 20000-1~~ ~~document is intended to~~ assist ~~readers~~ users in relating the requirements specified in ISO/IEC 20000-1:2018 to the principles and practices of two frequently used software and service development frameworks, Agile and DevOps. Organizations can refer to this guidance as a cross-reference between the frameworks to help them plan, implement and improve a service management system (SMS).

ISO/IEC 20000-1 is the International Standard for service management and specifies requirements which can be used as the basis of a conformity assessment.

ISO/IEC 20000-1 specifies an integrated process approach ~~when the~~ in which an organization establishes, implements, maintains, and continually improves ~~a service management system (an SMS).~~ The services can be delivered to internal or external customers or a combination of both. Other parts of the ISO/IEC 20000 series provide supporting guidance.

Agile is defined as a collection of frameworks and techniques focusing on collaboration, iterative and incremental development and continuous improvement.

DevOps is defined as a set of principles and practices which enable better communication and collaboration between relevant stakeholders for the purpose of specifying, developing and operating software and systems services, and continuous improvements in all aspects of the lifecycle (ISO/IEC/IEEE 32675).

Despite these definitions being focused on software development, both Agile and DevOps principles have also been used in a much broader sense, including the development and delivery of services.

The DevOps framework is based on the Agile framework, adding automation of service development and delivery to it. Many Agile concepts discussed in this document are therefore equally applicable to DevOps.

Organizations can implement and improve their SMS using the requirements specified in ISO/IEC 20000-1 and the guidance in the other parts of the ISO/IEC 20000 series. An organization can adopt Agile and DevOps practices to support the management of their services in alignment with the requirements specified in ISO/IEC 20000-1. Other frameworks and practices can also be used to support ISO/IEC 20000-1.

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ISO/IEC DTS 20000-15:(en)

Within this document, Clause 4 provides an overview of ISO/IEC 20000-1 and the SMS. Clause 5 applies Agile principles to the SMS. Clause 6 applies DevOps principles to the SMS. In Clause 7, the benefits and caveats surrounding the use of Agile, DevOps or a combination of the two in the SMS are discussed. Annex A provides a correlation of ISO/IEC 20000-1 clauses to the Agile and DevOps frameworks.

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Information technology — Service management

Part 15: Guidance on the application of Agile and DevOps principles in a service management system

1 Scope

This ~~part of ISO/IEC 20000~~ is a ~~Technical Specification that~~ document provides guidance on the relationship between ISO/IEC 20000-1:2018 and two commonly used frameworks, Agile and DevOps. It can be used by any organization or person wishing to understand how Agile and DevOps can be used with ISO/IEC 20000-1, including:

- a) an organization that has demonstrated or intends to demonstrate conformity to the requirements specified in ISO/IEC 20000-1 and is seeking guidance on the use of Agile or DevOps to establish or improve the SMS and the services;
- b) an organization that already uses Agile or DevOps and is seeking guidance on how Agile or DevOps can be used to support efforts to demonstrate conformity to the requirements specified in ISO/IEC 20000-1;
- c) an assessor or auditor who wishes to understand the use of Agile or DevOps as a support to achieve for achieving the requirements specified in ISO/IEC 20000-1.

Both approaches can be used independently or together. Depending on the context, an organization can deploy Agile frameworks only, DevOps frameworks only, use both Agile and DevOps frameworks in isolation, or use an integrated workflow with combined Agile and DevOps approaches. In any of these situations, this document can be used as guidance for the integration of Agile and DevOps practices in an SMS.

The guidance in this document can assist an organization in planning and preparing for a conformity assessment against ISO/IEC 20000-1. ~~An, noting that an~~ organization can only claim conformity by fulfilling all requirements specified in ISO/IEC 20000-1.

~~Clause 4 provides an overview of ISO/IEC 20000-1 and the SMS. Clause 5 applies Agile principles to the SMS. Clause 6 applies DevOps principles to the SMS. In Clause 7, the benefits and caveats surrounding the use of Agile, DevOps or a combination of the two in the SMS are discussed. Annex A provides a correlation of ISO/IEC 20000-1 clauses to the Agile and DevOps frameworks.~~

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/IEC 20000-1:2018, *Information technology — Service management — Part 1: Service management system requirements*.

ISO/IEC ~~DIS~~ 33202:—¹, — *Software and systems engineering — Core Agile Practices practices*

ISO/IEC/IEEE-32675:2022—, *Information technology — DevOps — Building reliable and secure systems including application build, package and deployment*

¹ Under preparation. Stage at the time of publication: ISO/IEC/DIS 33202:2024.

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 20000-1:2018 ~~Information technology — Service management — Part 1: Service management system requirements~~, ISO/IEC DIS 33202 ~~Software and systems engineering — Core Agile Practices~~ and ISO/IEC/IEEE 32675:2022 ~~Information technology — DevOps — Building reliable and secure systems including application build, package and deployment~~, ISO/IEC 33202, ISO/IEC/IEEE 32675 and the following apply.

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

~~—~~ — ISO Online browsing platform: available at ~~https://www.iso.org/obp~~https://www.iso.org/obp

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

3.1

Agile

collection of frameworks and techniques focusing on collaboration, iterative and incremental development and continuous improvement

Note_1_to_entry:- In this context, the term "Agile" is usually ~~written capitalised~~capitalized.

3.2

bottom-up intelligence

use of information coming from users themselves, so they can develop better options to achieve valuable objectives

3.3

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continuous everything

increasing agility throughout the service lifecycle from testing, deployment and monitoring through to integration and delivery

3.4

cradle-to-grave

activities from the beginning of the service lifecycle to its end or disposal

Note_1_to_entry:- ~~this~~ This term is specifically used in this specific way ~~in~~within the context of DevOps.

3.5

cross-functional autonomous team

team that has the skills and disciplines required to achieve an established goal, such as developing, deploying or operating a service.

Note_1_to_entry:- These teams are fully empowered and self-sufficient ~~to design, build, test, deploy, for the designing,~~ building, testing, deployment and ~~run~~running of the service.

3.6

customer-centric

doing business and ensuring a positive customer experience at every stage of the *customer journey* ~~(3.7)~~(3.7)

Note_1_to_entry:- When a customer-centric organization makes a decision, its people thoroughly analyze its impact on the customers.

3.7

customer journey

series or sum of customer experiences when engaging with an organization, its products or services

Note_1_to_entry:- "Series" is based on processes; "sum" is based on results.

[SOURCE: ISO 23592:2021(en), 3.8]

3.8

daily stand-up

short, daily, time-limited meeting used to discuss progress, plans and any blocking issues with each member of an *Agile* ~~(3.1)~~(3.1) team

[SOURCE: ISO/IEC TR 24587:2021, 3.7, modified: ~~removed note~~ — The term "time-boxed" has been replaced by "time-limited" at the beginning of the definition, and "Agile" has been capitalized. Note 1 to entry has been removed.]

3.9

DevOps

set of principles and practices which enable better communication and collaboration between relevant stakeholders for the purpose of specifying, developing, and operating software and systems products and services, and continuous improvements in all aspects of the lifecycle

[SOURCE: ISO/IEC/IEEE 32675:2022, 3.1.171]

3.10

hypothesis

a

theory that something can become valuable, even though this will not be known for sure until it is verified in a real environment

3.11

left-shift

shift-left

prioritizing the involvement of relevant stakeholders in applying quality activities, security, privacy, performance, verification, and validation earlier in the lifecycle

Note_1_to_entry:- In this document, the expression “shift-left” is used, because it is more common in the industry.

[SOURCE: ISO/IEC/IEEE 32675:2022(en), 3.1.232, modified: — Admitted term "shift-left" has been added. Note 1 to entry and alternative expression "shift-left" has been added.]

3.12

minimum viable service

MVS

limited service release that includes the main *hypotheses* (3.10)(3.10) that demonstrate whether the main product idea makes sense to the customer

3.13

result-oriented plan planning

plan that focuses on outcome rather than on the process used to deliver a service

Note_1_to_entry:- Following a result-oriented plan gives a higher chance of being successful. It pushes the organization to take ownership and be flexible in defining priorities. Most importantly, it enables the organization to measure progress against a defined set of requirements.

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3.14

retrospective

a

team meeting at the end of an iterative cycle or at the end of a project to reflect on what went well, what was learned, and what should be done differently next time

[SOURCE: ISO/IEC/IEEE 24765:2017, 3.3488, modified: ~~removed “software”~~ — Preferred term has been changed from "retrospective meeting" to "retrospective". "Software project" has been changed to "project" in the definition.]

3.15

self-organizing team

team using its own knowledge to determine how best to do their job