International Standard

ISO 21512

Project, programme and portfolio management — Earned value management implementation guidance

Management de projets, programmes et portefeuilles — Recommandations de mise en oeuvre du management de la valeur acquise

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Foreword

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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 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).

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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 https://www.iso.org/foreword-supplementary-information.html.

This document was prepared by Technical Committee ISO/TC 258, *Project, programme and portfolio management.*

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.

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Introduction

This document provides guidance when implementing an earned value management system based on ISO 21508. This document shows how an organization can take a systematic approach to implement and maintain an earned value management system that enables improved project and programme management. This document is not intended to be prescriptive; each organization should determine its approach for earned value management and to what extent the organization should adopt ISO 21508. Users are encouraged to use this document along with ISO 21508.

This document provides guidance to users either establishing or maintaining an earned value management system.

The text in each clause is topically arranged to assist the organization in establishing or improving its earned value management system. The topics are arranged in the following order:

a) general introduction to the material contained in the clause;

b) guidance on how an organization can approach the subject;

c) practical tools, methods, strategies and examples.

The examples and approaches presented in this document are for illustrative purposes only, and are not necessarily suitable for every organization, project or programme. In implementing, maintaining or improving an earned value management system, it is important that organizations select approaches, tools and methods appropriate to their needs and governance framework.

Earned value management tools and methods are sustainable and useful, when they are integrated within an organization's overall governance for projects and programmes.

This document is applicable to:

a) practitioners and professionals of earned value management, project management, programme management and portfolio management;

b) management, sponsors and other governing bodies overseeing projects, programmes, and portfolios;

c) project, programme and portfolio management office professionals;

d) project, programme and portfolio stakeholders;

e) academia including faculty, students and researchers;

f) developers of national standards, organizational standards and public policy.

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Project, programme and portfolio management — Earned value management implementation guidance

1 Scope

This document specifies guidance and examples for establishing, implementing and maintaining an earned value management system based on ISO 21508:2018. This document also provides practises for earned value management, as set forth in ISO 21508:2018. This document can be used by any organization.

This document is aligned with and complements the information contained in ISO 21508:2018 which is the higher tier international standard and companion document for this document.

Further guidance on project, programme and governance and other related guidance are set out in relevant 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/TR 21506, *Project, programme and portfolio management — Vocabulary*

ISO 21508:2018, *Earned value management in project and programme management*

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3 Terms, definitions and abbreviated terms

For the purposes of this document, the terms and definitions given in ISO/TR 21506 and ISO 21508 apply.

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

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

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

3.1 Terms and definitions

3.1.1
100 % rule
concept concerning the entire work required to be accomplished to achieve the *project* (3.1.57) or *programme* (3.1.53) scope captured in the *work breakdown structure* (3.1.89)

Note 1 to entry: The 100 % rule applies to the parent and child elements. The child-level of *decomposition* (3.1.23) of a *work breakdown structure element* (3.1.90) represents 100 % of the work applicable to the parent-level.

[SOURCE: ISO 21511:2018, 3.1]

3.1.2
activity
identified piece of work that is required to be undertaken to complete a *project* (3.1.57) or *programme* (3.1.53)

Note 1 to entry: It can also be considered a work element. It is a defined, discrete piece of work.

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[SOURCE: ISO 21508:2018, 3.1.1, modified — a second sentence has been added to the Note 1 to entry.]

3.1.3
actual cost
cost incurred for work performed

Note 1 to entry: Actual cost is also known as "actual cost of work performed".

[SOURCE: ISO 21508:2018, 3.1.2]

3.1.4
actual time
number of time periods between the actual start date and the date on which the *project* (3.1.57) data is reported

3.1.5
agile development
agile approach
agile management
agile project management
agile programme management
iterative approach to *project* (3.1.57) and *programme* (3.1.53) planning and implementation to allow continuous adaptation for the delivery of scope and the final deliverable or outcome

3.1.6
baseline
reference basis for comparison against which performance is monitored and controlled

[SOURCE: ISO 21502:2020, 3.1]

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3.1.7
baseline plan
tool to facilitate the comparison against which performance is monitored and controlled

3.1.8
basis of estimate
documentation that supports the calculation of resources required to perform activities

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3.1.9
budget at completion
total forecasted cost for accomplishing the work related to a *work package* (3.1.91), *activity* (3.1.2) or *control account* (3.1.11)

[SOURCE: ISO 21508:2018, 3.1.3]

3.1.10
change order
documentation to alter the *baseline* (3.1.6) of a *project* (3.1.57) or *programme* (3.1.53)

Note 1 to entry: Documentation prior to the formal change order is often referred to as a baseline change proposal or a change request.

3.1.11
control account
management *control point* (3.1.15) where scope, budget, *actual cost* (3.1.3) and schedule of a *project* (3.1.57) or *programme* (3.1.53), *work package* (3.1.91) or *activity* (3.1.2) are integrated

[SOURCE: ISO 21508:2018, 3.1.4]

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3.1.12
control account manager
cost account manager
person with the authority and responsibility to manage a management *control point* (3.1.15) where cost and scope are integrated and compared to the designated performance metrics for *earned value* (3.1.26)

3.1.13
control account plan
cost account plan
management tool for organizing work within one or more work or *planning packages* (3.1.91)

3.1.14
control period
established time frame in which the actual *project* (3.1.57) or *programme* (3.1.53) results are compared with the *performance measurement baseline* (3.1.51) to assess performance and take management action, if needed

3.1.15
control point
point in the processes of *project* (3.1.57) or *programme management* (3.1.54) that can serve as a decision time or gate and can be further defined by one or more individual *activities* (3.1.2)

3.1.16
corrective action
direction and *activity* (3.1.2) for modifying the performance of work to bring performance in line with a plan

[SOURCE: ISO/TR 21506:2018, 3.15]

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3.1.17
cost management system
set of tools for estimating, allocating and controlling costs in a *project* (3.1.57) or *programme* (3.1.53)

3.1.18
cost performance index
measure of the *actual cost* (3.1.3) efficiency of a *project* (3.1.57) or *programme* (3.1.53)

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3.1.19
cost variance
measure of cost performance on a *project* (3.1.57) or *programme* (3.1.53)

Note 1 to entry: Actual cost compared to planned cost.

3.1.20
critical chain project management
scheduling method for planning and managing a *project* (3.1.57) or *programme* (3.1.53) that focusses on resource availability to complete project or programme *activities* (3.1.2)

3.1.21
critical path
sequence of *activities* (3.1.2) that determines the earliest possible completion date for a *project* (3.1.57), *programme* (3.1.53) or phase

[SOURCE: ISO 21502:2020, 3.8, modified — "programme" has been added to the definition.]

3.1.22
data tracing
activity (3.1.2) of end-to-end to performance data quality checks

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3.1.23
decomposition
iterative process to incorporate an increased level of detail as identified during the *lifecycle* (3.1.43) of a *project* (3.1.57) or *programme* (3.1.53)

Note 1 to entry: Decomposition can be accomplished through a hierarchal, functional or other method to achieve a manageable set of elements.

3.1.24
demonstration review
check for compliance with the *governance* (3.1.35) of *earned value* (3.1.26) criteria on a new or modified *earned value management system* (3.1.30)

3.1.25
earned schedule
time-based technique used to provide status and predictions regarding the schedule, using earned value data

Note 1 to entry: Earned schedule is analogous to the use of cost to determine earned value.

Note 2 to entry: Earned schedule is also a measure of the number of time periods in the *performance measurement baseline* (3.1.51) in which the earned value is greater than the *planned value* (3.1.52).

3.1.26
earned value
value of completed work expressed in terms of the budget assigned to that work

Note 1 to entry: Earned value is also known as budgeted cost of work performed.

[SOURCE: ISO 21508:2018, 3.1.5]

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3.1.27
earned value management
method that integrates the *project* (3.1.57) or *programme* (3.1.53) scope, *actual cost* (3.1.3), budget, and schedule for the assessment of progress and performance

[SOURCE: ISO 21508:2018, 3.1.6]

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3.1.28
earned value management methodology
approach that permits progress achieved to be objectively measured

3.1.29
earned value management planning
delineation of steps, methods and reporting necessary for the creation and tracking of the *performance measurement baseline* (3.1.51)

3.1.30
earned value management system
earned value management tool
selected toolset that integrates the *project* (3.1.57) or *programme* (3.1.53) scope, *actual cost* (3.1.3), budget, and schedule for assessment of progress and performance

3.1.31
earned value measurement
earned value metrics
metrics used to determine the *earned value* (3.1.26) of *projects* (3.1.57) or integrated *programmes* (3.1.53)

3.1.32
estimate at completion
forecasted total cost to accomplish the work on a *project* (3.1.57), *programme* (3.1.53), *work package* (3.1.91) or *activity* (3.1.2)

[SOURCE: ISO 21508:2018, 3.1.7]

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3.1.33
estimate to completion
forecasted cost of the work remaining in a *project* (3.1.57), *programme* (3.1.53), *work package* (3.1.91) or *activity* (3.1.2)

[SOURCE: ISO 21508:2018, 3.1.8]

3.1.34
feeding buffer
time cushion placed at the end of a sequence of tasks that lead into the critical chain

3.1.35
governance
principles, policies and framework by which an organization is directed and controlled

[SOURCE: ISO 21502:2020, 3.10]

3.1.36
integrated baseline review
assessment to establish a common understanding of the *performance measurement baseline* (3.1.51) for verification of the technical content of the *project* (3.1.57) or *programme* (3.1.53)

[SOURCE: ISO 21508:2018, 3.1.9]

3.1.37
integrated baseline review handbook
document that compiles guidance for the preparation, conduct and closeout of an integrated *baseline* (3.1.6) review

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3.1.38
issue
event that arises during a *project* (3.1.57) or *programme* (3.1.53) needing resolution for the project or programme to proceed

[SOURCE: ISO 21502:2020, 3.11, modified — "or programme" has been added to the definition.]

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3.1.39
issue register
document to record *issues* (3.1.38), responses and other relevant issue information

3.1.40
lag
attribute applied to a logical relationship to delay the start or end of an *activity* (3.1.2)

[SOURCE: ISO/TR 21506:2018, 3.28]

3.1.41
lead
attribute applied to a logical relationship to advance the start or end of an *activity* (3.1.2)

[SOURCE: ISO/TR 21506:2018, 3.29]

3.1.42
lessons learned
knowledge gained throughout a *project* (3.1.57), *programme* (3.1.53) or portfolio that shows how events were addressed or should be addressed for the purpose of improving future performance

[SOURCE: ISO/TR 21506:2018, 3.30]

3.1.43
lifecycle
systematic and organized grouping or staging of necessary *activities* (3.1.2) to be completed to provide the expected deliverable or outcome of a *project* (3.1.57) or *programme* (3.1.53)

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3.1.44
management reserve
amount of budget or schedule external to the *performance measurement baseline* (3.1.51), withheld for management control in response to unforeseen events or *activities* (3.1.2) that are a part of the scope

[SOURCE: ISO 21508:2018, 3.1.10, modified — "or schedule" has been added to the definition.]

3.1.45
milestone
significant planned, or to be planned, point in a *project* (3.1.57), *programme* (3.1.53) or portfolio

[SOURCE: ISO/TR 21506:2018, 3.34]

3.1.46
organizational breakdown structure
decomposition (3.1.23) of the management team of an organization or decomposition of the management team that performs the work of a *project* (3.1.57) or *programme* (3.1.53)

Note 1 to entry: The organizational breakdown structure can include partnering or subcontracting. It is used to illustrate the relationship between project and programme activities and the organizational units that will manage or perform the work activities.

[SOURCE: ISO 21511:2018, 3.5]

3.1.47
parent element
work that is decomposed into two or more lower level elements of work

[SOURCE: ISO 21511:2018, 3.6, modified — Note 1 to entry has been deleted.]

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3.1.48
performance management framework
basis for the assignment of management responsibility for *project* (3.1.57) or *programme* (3.1.53) performance to the project or *programme management* (3.1.54) team

3.1.49
performance management methodology
formalized methods governing *earned value management* (3.1.27)

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3.1.50
performance measurement
quantitative units of measure that are placed to track progress

[SOURCE: ISO 21508:2018, 3.1.12]

3.1.51
performance measurement baseline
total time-phased scope of work and budget plan against which *project* (3.1.57) or *programme* (3.1.53) performance is measured, not including *management reserve* (3.1.44)

[SOURCE: ISO 21508:2018, 3.1.13]

3.1.52
planned value
time-phased budget (3.1.80) authorized for the work scheduled

Note 1 to entry: Planned value is also known as budgeted cost of work scheduled.

[SOURCE: ISO 21508:2018, 3.1.14]

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