

OpenUP Summary

<http://epf.eclipse.org/wikis/openup/>

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Introduction

The Open Unified Process (OpenUP) is an iterative software development process which affirms the values of the agile philosophy¹. The history of the OpenUP started in 2005 when IBM Rational published parts of the Rational Method Composer and the Rational Unified Process (RUP) ® under the Eclipse Public License². OpenUP 1.0 was released in August 2007³ and the current version is 1.5.1.4 from May 2012⁴. As the basic concepts of OpenUP and RUP are the same, this OpenUP summary refers to RUP descriptions if they provide a better understanding.

OpenUP separates the software life cycle into four phases: Inception, Elaboration, Construction and Transition. Each phase consists of a number of iterations⁵ and is finished when the milestone for its respective objectives has been reached. The milestone for the Inception phase is a conceptual prototype (Lifecycle Objectives Milestone), for Elaboration it is an architectural baseline (Lifecycle Architecture Milestone), for Construction a beta release (Initial Operational Capability Milestone), and for Transition it is the final delivery of the software to the customer (Product Release Milestone)⁶. Opposed to the waterfall model the Unified Process proclaims that the different software engineering disciplines are required in all the phases but with varying emphasis⁷.

Beside the process description, the OpenUP contains a comprehensive set of best practices, roles, work products, tasks and guidance. However, the adoption of too many artifacts and activities is considered as a bad practice⁸. The process needs to be tailored for each individual project and for each artifact the right level of formalism is to be chosen. The only fixed factors are the phase milestones⁹. Furthermore, the RUP provides a set of guidelines to determine a successful application of the process, known as "The Spirit of the RUP"¹⁰.

“RUP is a very large collection of practices and is really a process framework rather than a process. Rather than give a single process for software development it seeks to provide a common set of practices for teams to choose from for an individual project. (...) I've seen descriptions of RUP usage that range from rigid waterfall with 'analysis iterations' to picture perfect agile.”

– Martin Fowler¹¹

The four pages below consist of direct quotations from the linked OpenUP wiki pages.

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- 1 See OpenUP core principles:
http://epf.eclipse.org/wikis/openup/publish.openup.base/customcategories/core_principles_category_B7B55076.html?nodeId=83e6e074
 - 2 See <http://www.enterpriseunifiedprocess.com/essays/history.html> for a comprehensive time line of the Unified Process.
 - 3 See <http://www.ibmssystemsmag.com/aix/trends/opensource/Deploying-the-OpenUP-Open-Source-Process/>
 - 4 See footer
http://epf.eclipse.org/wikis/openup/core.default.nav_view.base/customcategories/release_info_CE8EB92A.html?nodeId=d5f363b2
 - 5 One to six weeks timeboxes which result in an internal or external software release. See http://epf.eclipse.org/wikis/openup/core.mgmt.common.extend_supp/guidances/concepts/iteration_C20B1904.html
 - 6 See Kroll & Kruchten, p. 164 and Wiki: Delivery Processes - OpenUp Lifecycle
http://epf.eclipse.org/wikis/openup/process.openup.base/deliveryprocesses/openup_lifecycle_EE511F3A.html?nodeId=d8da8029
 - 7 See http://ptgmedia.pearsoncmg.com/images/chap3_0201791668/elementLinks/03fig01.gif
 - 8 See Kroll & Kruchten, p. 244
 - 9 See Kroll & Kruchten, p. 89
 - 10 <http://www.ibm.com/developerworks/rational/library/content/RationalEdge/dec01/TheSpiritoftheRUPDec01.pdf> and Kroll & Kruchten, p. 27 ff.
 - 11 Martin Fowler – <http://martinfowler.com/articles/newMethodology.html>

Inception¹²

The purpose in this phase is to achieve concurrence among all stakeholders on the lifecycle objectives for the project.

Phase Objectives

- Understand what to build
- Identify key system functionality
- Determine at least one possible solution
- Understand the cost, schedule, and risks associated with the project

Work Breakdown¹³

- [Initiate Project](#)
- [Plan and Manage Iteration](#)
- [Identify and Refine Requirements](#)
- [Agree on Technical Approach](#)

Lifecycle Objective Milestone¹⁴

– *Conceptual Prototype*

The Lifecycle Objectives Milestone is the first major project milestone. During the iteration [assessment](#), the following evaluation criteria should be met [\[KRO03\]](#):

- Stakeholder concurrence on
 - scope definition
 - initial cost and schedule estimates
 - definitions and priorities for initial set of requirements
 - risks identified and mitigation strategies proposed.

Note:

The project may be aborted or reconsidered if it fails to reach this milestone.

12 http://epf.eclipse.org/wikis/openup/process.openup.base/deliveryprocesses/inception_phase_iteration_1EFD4B4F.html_desc.html?proc=_SuWj4dOPEdyqlogshP8l4g&path=_SuWj4dOPEdyqlogshP8l4g_8tQrUVQvEd2i9JHp7xurvw_kYVSUdOP_EdyqlogshP8l4g

13 http://epf.eclipse.org/wikis/openup/process.openup.base/deliveryprocesses/inception_phase_iteration_1EFD4B4F.html_wbs.html?proc=_SuWj4dOPEdyqlogshP8l4g&path=_SuWj4dOPEdyqlogshP8l4g_8tQrUVQvEd2i9JHp7xurvw_kYVSUdOP_EdyqlogshP8l4g

14 http://epf.eclipse.org/wikis/openupsp/openup_basic/deliveryprocesses/lifecycle_objectives_y1uwgBOKEduCNqgZdt_OaA.html?proc=_0uyGoMlgEdmt3adZL5Dmdw&path=_0uyGoMlgEdmt3adZL5Dmdw_y1uwgBOKEduCNqgZdt_OaA

Elaboration¹⁵

Essentially, the main objectives for Elaboration are related to better understanding the requirements, creating and establishing a baseline of the architecture for the system, and mitigating top-priority risks.

Phase Objectives

- Get a more detailed understanding of the requirements
- Design, implement, validate, and baseline an architecture
- Mitigate essential risks, and produce accurate schedule and cost estimates

Work Breakdown¹⁶

- [Plan and Manage Iteration](#)
- [Identify and Refine Requirements](#)
- [Develop the Architecture](#)
- [Develop Solution Increment](#)
- [Test Solution](#)
- [Ongoing Tasks](#)

Lifecycle Architecture Milestone¹⁷

– *Architectural Prototype*

The Lifecycle Architecture Milestone is the second major project milestone. During iteration [assessments](#) in Elaboration, you should keep these evaluation criteria in mind [[KRO03](#)]:

- Stability of Vision, requirements and Architecture.
- Major risk elements addressed and resolved by testing and evaluating executable prototypes.
- Construction iterations planned in sufficient detail and credibly estimated to allow the work to proceed.
- Agreement of stakeholders that the current vision can be met if plans are executed to develop complete system on top of current architecture.
- Resource expenditures versus planned expenditures are acceptable.

15 http://epf.eclipse.org/wikis/openup/process.openup.base/deliveryprocesses/elaboration_phase_iteration_579A68CE.html_desc.html?proc=_SuWj4dOPEdyqlogshP8l4g&path=_SuWj4dOPEdyqlogshP8l4g_ieYHIVQwEd2i9JHp7xurvw_51ewYdOP_EdyqlogshP8l4g

16 http://epf.eclipse.org/wikis/openup/process.openup.base/deliveryprocesses/Elaboration%20Phase_F6EBBC8B.html?proc=_SuWj4dOPEdyqlogshP8l4g&path=_SuWj4dOPEdyqlogshP8l4g_ieYHIVQwEd2i9JHp7xurvw&nodeId=e3f783be

17 http://epf.eclipse.org/wikis/openupsp/openup_basic/deliveryprocesses/lifecycle_architecture_16nd0BOKEduCNqgZdt_OaA.html

Construction¹⁸

Functionality is continuously implemented, tested, and integrated, resulting in builds that are more and more complete and stable.

Phase Objectives

- Iteratively develop a complete product that is ready to transition to the user community
- Minimize development costs and achieve some degree of parallelism

Work Breakdown¹⁹

- [Plan and Manage Iteration](#)
- [Identify and Refine Requirements](#)
- [Develop Solution Increment](#)
- [Test Solution](#)
- [Ongoing Tasks](#)
- [Develop Product Documentation and Training](#)

Initial Operational Capability Milestone²⁰

– *Beta Release*

The Initial Operational Capability Milestone is the third major project milestone. During iteration [assessments](#) in Construction, keep these evaluation criteria in mind [\[KRO03\]](#):

- Product release is stable and mature enough to be deployed in the user community.
 - The beta product is ready to be handed over to the users.
 - All functionality has been developed and all alpha testing (if any) has been completed.
 - In addition to the software, a user manual has been developed, and there is a description of the current release.
- Actual resource expenditures compared to planned expenditures are acceptable.

Note:

In case the project fails to reach this milestone, an iteration can be added to Construction, thus postponing Transition.

18 http://epf.eclipse.org/wikis/openup/process.openup.base/deliveryprocesses/construction_phase_iteration_5BD4A7D6.html_desc.html?proc=_SuWj4dOPEdyqlogshP8l4g&path=_SuWj4dOPEdyqlogshP8l4g_nfpBkVQwEd2i9JHp7xurvw_6togYdOP_EdyqlogshP8l4g

19 http://epf.eclipse.org/wikis/openup/process.openup.base/deliveryprocesses/construction_phase_iteration_5BD4A7D6.html?proc=_SuWj4dOPEdyqlogshP8l4g&path=_SuWj4dOPEdyqlogshP8l4g_nfpBkVQwEd2i9JHp7xurvw_6togYdOP_EdyqlogshP8l4g

20 http://epf.eclipse.org/wikis/openupsp/openup_basic/deliveryprocesses/initial_operational_capability_31E_YBOKEduCNqgZdt_OaA.html?proc=_0uyGoMlgEdmt3adZL5Dmdw&path=_0uyGoMlgEdmt3adZL5Dmdw_31E_YBOKEduCNqgZdt_OaA

Transition

In the Transition phase, the main objectives are to fine-tune the functionality, performance, and overall quality of the beta product from the end of the Construction phase.

Phase Objectives

- Beta test to validate that user expectations are met
- Achieve stakeholder concurrence that deployment is complete
- Improve future project performance through lessons learned

Work Breakdown²¹

- [Plan and Manage Iteration](#)
- [Develop Solution Increment](#)
- [Test Solution](#)
- [Finalize Product Documentation and Training](#)
- [Prepare for Release](#)
- [Provide Product Training](#)
- [Ongoing Tasks](#)
- [Deploy Release to Production](#)

Product Release Milestone²²

The Product Release Milestone is the last major project milestone. During iteration [assessment](#), you decide if the objectives were met, and then close the project. These are the evaluation criteria to keep in mind [[KRO03](#)]:

- Users satisfaction and product acceptance
- Stakeholder concurrence on acceptable resource expenditures compared to planned expenditures
- Product is in production; therefore, a new development cycle for enhancements or maintenance may start

21 http://epf.eclipse.org/wikis/openup/process.openup.base/deliveryprocesses/transition_phase_iteration_9880C0E.html_wbs.html?proc=_SuWj4dOPEdyqlogshP8l4g&path=_SuWj4dOPEdyqlogshP8l4g_pOgXIVQwEd2i9JHp7xurvw_7bg6EdOP_EdyqlogshP8l4g

22 http://epf.eclipse.org/wikis/openupsp/openup_basic/deliveryprocesses/product_release_5v0NwBOKEduCNqgZdt_OaA.html?proc=_0uyGoMlgEdmt3adZL5Dmdw&path=_0uyGoMlgEdmt3adZL5Dmdw_5v0NwBOKEduCNqgZdt_OaA

Appendix A: References

- OpenUP Wiki
<http://epf.eclipse.org/wikis/openup/>
- Kroll & Kruchten
The Rational Unified Process Made Easy – A Practitioner's Guide to the RUP; First printing, April 2003; Pearson Education; ISBN 0-321-16609-4
- Balduino:
Introduction to OpenUP (Open Unified Process)
<http://www.eclipse.org/epf/general/OpenUP.pdf>

Appendix B: Eclipse Public License 1.0

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