



SOFTWARE ENGINEERING STANDARDS & PRACTICES

Source Code Management Standards

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WHAT IS THIS?

This document presents Source Code management standards that apply to software solution projects created for ABB where ABB assumes Intellectual Property (IP) ownership. It describes the rules which makes Source Code base management efficient for both ABB and external Vendor.

The standard does NOT apply to software solutions where the Vendor or any other third party remains the Source Code Intellectual Property owner.

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THE PURPOSE OF THE SOURCE CODE MANAGEMENT STANDARDS

ABB reserves every right to control the quality of the Intellectual Property (IP) Vendor delivers as a result of the agreement made. Source Code is the primary medium of software Intellectual Property.

Regular Source Code evaluations during the software solution development process ensure any deviations from the agreed quality and specification is detected as early as possible and less expensive to correct, protecting both the Vendor and ABB from misalignment, project delays and financial loss.

SOURCE CODE MANAGEMENT PRINCIPLES

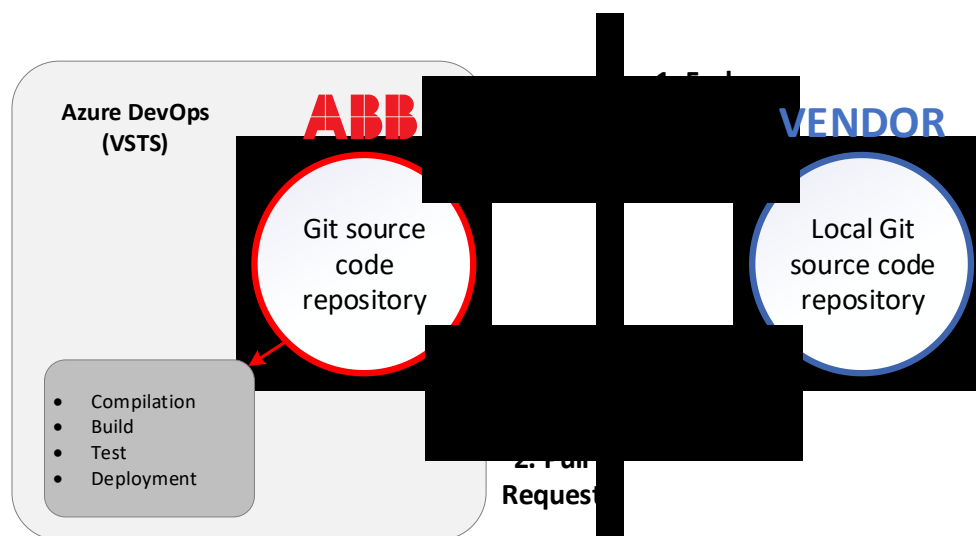
The following industry standard based process describes how the Vendor should deliver Source Code changes. It also covers branch permissions as well as the process of accepting and declining submitted Source Code changes.

Process steps:

1. ABB sets up Azure DevOps Services (VSTS) project code repository, Vendor project team is granted the following access to the Fork Source Branch:
 - a. Read the branch to create a Fork.
 - b. Create Pull Request (typically Master Branch) to deliver code changes.
2. Vendor delivery team is required to submit Source Code changes based on agreed schedule (milestones, checkpoints, reviews) or upon request.
3. Code changes are to be submitted by creating a Pull Request back to the ABB's Fork Source Branch.
4. Submitted Source Code must be complete, contain Unit Tests, database scripts (if applicable), deployment scripts, test scripts. Source Code must compile, scripts must run.
5. ABB runs automatic Continuous Integration, Continuous Testing and Continuous Deployment process to validate submitted Source Code changes. Manual checks may be performed as well.
6. Upon successful validation submitted Source Code changes are merged with Master Branch.
7. In case of validation failure Vendor will be notified, presented with findings, required to correct defects and resubmit Source Code changes.

Note: the above described process does NOT preclude the Vendor from using ABB Azure DevOps Services (VSTS) repository for daily software development, however access to the Master Branch shall NOT be granted.

Below diagram illustrates the described process.



REFERENCES

1. IS Standard for Code Repository Platforms - [9AAD133181](#)
2. Best Coding Practices - [9AAD135446](#)
3. C# Best Coding Practices - [9AAD134037](#)
4. C# Coding Standards - [9AAD134036](#)
5. C# Coding Standards - Field Guide - [9AAD134039](#)
6. Java Coding Standards - [9AAD135383](#)
7. SQL Server Coding Standards - [9AAD134842](#)

REVISION HISTORY

Rev.	Page	Change Description	Author(s)	Date
A	all	approved	Krzysztof Kabała, Tomasz Jastrzębski et al.	2019-04-09

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