

## Custom Application Development for Agile Methodology Standard

### Introduction

Custom software development projects must be managed according to agile methodologies when building a new customer application or adding features to an existing application at the State of Oklahoma. Agile projects are broken up into short cycles where demands and solutions evolve through the collaborative effort with cross-functional team and customers for rapid production and constant revision, and each sprint is evaluated after completion.

### Purpose

This document establishes requirements for planning, design, development, enhancements and the maintenance of custom developed applications and integrations for agile methodology within the State of Oklahoma.

### Standard

All custom software development must follow agile methodologies unless an exception is approved. When an exception is approved, custom software development would follow waterfall methodologies ([Custom Application Development for Waterfall Methodology](#)).

- Kickoff meeting.
  - All stakeholders are invited.
  - The meeting agenda includes introductions, problem overview, the customer identifying the problem(s), deadlines, duration of sprints, role definitions (i.e., product owner or scrum master) and general or housekeeping information relevant to the project.
- Planning.
  - Decisions on where an application is hosted (on-premises, in the cloud, or a hybrid) is identified in the planning phase.
  - The team defines requirements, writes user stories, prioritizes stories, estimates length of time to complete stories and adds to the product backlog.
- Develop/code.
  - Developer(s) write a code base and complete tasks defined in a user story, and the specifications for acceptance criteria are defined in user stories.
  - Convert decisions made in design into interfaces to be interacted and tested.
  - All custom codes must be added and maintained in Git for versioning control and hosted in GitHub.
- Testing.
  - Large projects require a quality assessment and may include automated testing throughout subsequent sprints.
  - Small projects require user acceptance testing.
  - All data used for testing must be carefully selected, protected and controlled to ensure only test or dummy data is used in cases that use sensitive data in the application(s).
- Deployment.
  - The deployment environment is a staging environment for developments made during a sprint.
  - Deployments must follow deployment policies.

- Tiered environments.
  - Custom applications must have a separation between production and non-production environments.
  - At a minimum, there must be development, test and a production environment for custom developed applications. In some cases, for small integrations or applications, the development environment can be the developer's workstation.
  - Role-based control must be created for access to each environment. A production environment will only be granted on an as-need basis.
- Code-related artifacts: All code artifacts produced during custom application development must be version controlled using Git and hosted on GitHub.
- Maintenance.
  - After deployment, a product must be monitored and managed to ensure a smooth operation, resolve software bugs or issues and monitor continuous integration builds as a pre-alert to dependency issues. This requires adjustments from system environmental changes or business process changes.
  - Downstream dependency changes may prompt a need for changes.
  - Refactoring may occur after better techniques are discovered and improving efficiency as the volume of data the application processes increases.
- Change management: Once a product is released into a production environment, all change management policies must be adhered to when updates require changing the code in that environment arise.

### Compliance

This standard shall take effect upon publication and is made pursuant to Title 62 O.S. §§ 34.11.1 and 34.12 and Title 62 O.S. § 35.8. OMES IS may amend and publish the amended standards policies and standards at any time. Compliance is expected with all published policies and standards, and any published amendments thereof. Employees found in violation of this standard may be subject to disciplinary action, up to and including termination.

### Rationale

To coordinate and require central approval of state agency information technology purchases and projects to enable the chief information officer to assess the needs and capabilities of state agencies as well as streamline and consolidate systems to ensure that the state delivers essential public services to its citizens in the most efficient manner at the lowest possible cost to taxpayers.

### References

- [Custom Application Development for Waterfall Methodology.](#)

### Revision history

This standard is subject to periodic review to ensure relevancy.

<b>Effective date:</b> 01/18/2022	<b>Review cycle:</b> Annual
<b>Last revised:</b> 05/24/2022	<b>Last reviewed:</b> 07/26/2023
<b>Approved by:</b> Joe McIntosh, Chief Information Officer	