

**Adaptive Automation** [**Engineering Roadmap Baseline**](https://fusion.mastercard.int/confluence/display/TAUTO/QE+Roadmap+Baseline)



Below is the template for the (Adaptive Automation) projects to help define and follow the Engineering Roadmap timelines for specific projects. This will be used to track the progress and impediments of your project.

**Project Name| PO | Delivery Manager| Scrum Master | Dev lead | SETs | TEs**

**Milestones**

Design specifications🡪 Initiatives defined in ALM🡪 Acceptance Criteria Defined🡪 Stake holders defined🡪 ALM Compliance Guidelines implemented🡪

Test Plan Defined🡪 Code Base Setup in GIT/ Bit-bucket🡪 SONAR Analysis Setup🡪Test Automation Framework Setup (e.g. - REST-Assured)

🡪 CI/CD Jenkins Pipeline Defined(Test)🡪 CI/CD Jenkins Pipeline Defined(Integrated with Dev Pipeline)🡪 Jenkins and SONAR web hook integration🡪 PCF Cloud Environment Setup🡪 PCF and Jenkins Integration Pipeline Setup🡪All ALM initiatives moved to DONE by PO🡪 Code freeze done for release🡪 Release 1.0 done🡪 Product Support Phase

**Software Engineer in Test (SET)**

Responsible for enabling technical quality. This role helps delivery team with automation strategy, tooling in CI/CD (Continuous Integration/Continuous Delivery), labs, test data set ups, code quality and component level performance checks, security checks, and automation.

* Code Quality: Quality of our products are only as good as the quality of our foundation.  SETs will focus on ensuring proper design patterns, unit testing and peer reviews are conducted on a regular basis.  Target goals should be to get the teams to 80%, or higher, unit test coverage, zero critical/major errors (Sonar) and establishing a reject process (Build Breakers) for code that does not meet these standards.
* Continuous Integration / Continuous Delivery: Speed and efficiency are critical steps in the quality process.  We need to ensure we have automated checks in place to provide quick responses on code commits.  Once software features/enhancements have been validated as meeting standards they should then be automatically promoted to the next environment for further evaluation.
* Labs: Environment requirements and setup must be determined and established to support automation and performance needs.
* Test Data Setup: Test data requirements for each story needs to be evaluated and documented for each environment where automation will executed.  Plans need to be establish to ensure the correct data is in place for automation execution.  Tooling should be leveraged, as needed, to accomplish this task.
* Performance Checks: Similar to automation, performance tests (both unit and functional) need to be established to ensure we are on target to meeting/exceeding SLAs.
* Security Checks: Scans and tests need to be established and executed to ensure vulnerabilities do not hinder Mastercard or its customers.  SETs should help establish scanning processes using tools (Fortify) and work with Information Security to established penetration testing.
* Automation: Creating/supporting automation is integral to the SET role.  They should coaching (peer reviews), supporting (page object creation), and assisting in writing automation throughout the lifecycle of the project.

**Test Engineer (TE)**

Responsible for customer quality. This role works with product owners and puts focus on business feature acceptance and customer journeys. TEs are also responsible for integration testing, ALM best practices, and automation programming.

* Feature Acceptance: TEs will work with the Product Owner to ensure requirements have been met and suitable validations are in place.
* Customer Journeys: Focus on the customer journeys is essential to ensure our products meet the needs for our customers.  These end-to-end tests should cover critical paths end users will face when interacting with the product.
* Integration: Checks (stuff in/stuff out) should be in place to ensure live integration of other products/services are performing as intended.
* ALM Best Practices: Test Cases, Test Sets and Test Folders will be managed by the TE to properly map scenarios with the role they play.
* Automation: Writing automation to cover all these scenarios so they can be executed as part of each quality gate as software migrates from development to production.

**Performance Engineer (PE)**

Responsible for end-to-end performance strategy, performance testing, capacity modeling, tuning, and SLAs compliance. A senior performance consultant will be assigned at program level to help with architecture analysis and tuning.

* Performance Strategy: A strategy is documented to ensure the proper tools are being identified allowing us to best gauge and monitor product performance throughout the lifecycle of the product.
* Performance testing: Tests are created (smoke, stress, load, and capacity, soak, spike and break tests) to validate various scenarios that can/will occur once a product is publicly available.
* Capacity Modeling: Documented needs of the product, for scaling purposes, over the next 12 months, 1 year, 3 years and 5 years of the product.
* Tuning: Validating configurations of supporting systems to ensure they are operating at peak performance (web servers, JVMs, etc.).
* SLA Compliance: Monitoring system performance to meet, and exceed, established SLAs.  Helping isolate and resolve discovered issues.

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