



SpARC™ White Paper

SLI's Process for Agile in a Regulated Context

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SpARC™ – SLI's Process for Agile in a Regulated Context

Most IV&V and QA methodologies are designed to assess traditional Waterfall system development lifecycles (SDLC) even as new iterative SDLCs like Agile are increasingly becoming the norm. Agile Software Development values working software over documentation. Federal certification and State oversight requirements rely on documentation and deliverables that are typical to a Waterfall approach but are not Agile work products. This often causes a division between Agile development and Federal & State oversight.

SLI is the premiere Quality Assurance and Independent Verification and Validation organization for Agile development projects. We have developed a proprietary set of Agile process guidelines to enhance quality assurance activities on an Agile software development effort.

Most importantly, we focus our resources on monitoring those characteristics of Agile development that are important factors to the success of an Agile project. This includes meeting the planned velocity of each Sprint and making sure that each User Story has a clear definition of done. Our Agile specialists work with the state management team and the development team(s) to report on software development metrics that are aligned with the Agile development approach.

As a component of SLI's ISO certified Quality Management framework, **SQM³**, SLI applies our proprietary approach, **SpARC – SLI Process for Agile in a Regulated Context**, to Agile/SCRUM quality reviews.

SpARC is designed to re-connect development and oversight.

SpARC allows our Agile specialists to evaluate the development team's Agile/SCRUM work products to ensure quality outcomes. The **SpARC** approach checks multiple aspects of the development team's ability to apply its Agile process in the context of the software project.

SpARC is a suite of integrated practices, approaches, artifacts, quality assurance checklists and process guidelines that SLI has specifically developed to assess, monitor, and support Agile development projects.

SpARC enables state project team(s) to successfully anticipate and manage potential project risks that can arise when working with Agile/SCRUM processes.

SpARC applies a multi-dimensional approach to assessing the maturity of the development team's Agile methodology. Among the key aspects, SLI explores whether the Agile/SCRUM processes:

- Incorporate generally accepted Agile manifesto/lean development standards
- Provide a road map to complete all of the scope of the project in the planned timeframe
- Measure software development progress rate (known as velocity in Agile) for each Sprint, and assures a process exists to complete any outstanding User Stories from prior Sprints

SpARC enables SLI to gauge the development team's readiness to apply their process within the State Project's infrastructure and in working with the state business and technical staff. SLI leverages the **SpARC** protocol to assess the development team's ability to practically apply and utilize its Agile process on a state project. If the development team lacks "ready to apply" practical application expertise in one or more support capability areas, this opens up potential



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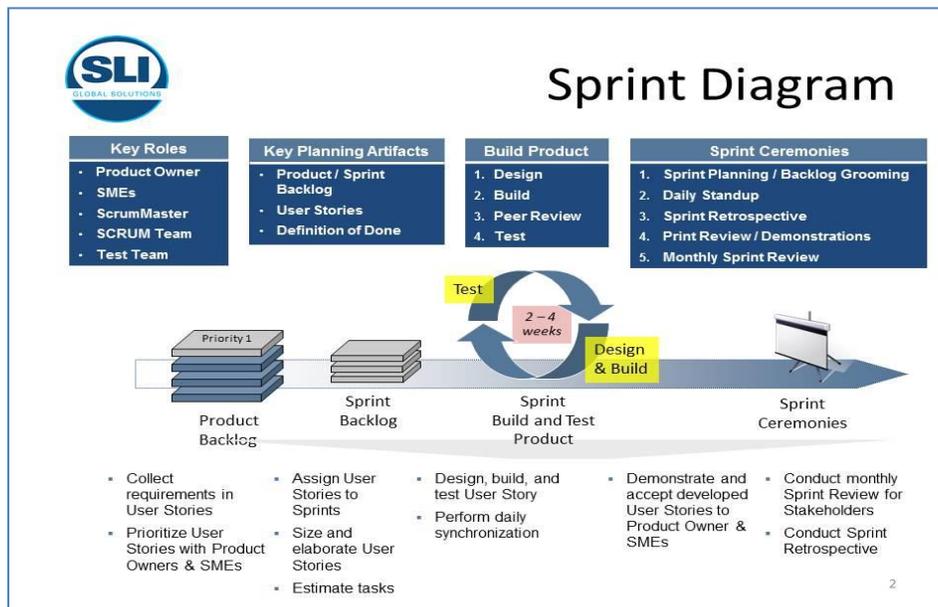
risks in a development team’s ability to deliver the project with the required quality, on schedule, even if the Agile/SCRUM methodology is itself well rounded and well documented.

SLI uses **SpARC** to evaluate the Application Lifecycle Management (ALM) toolset, which is the software tool or tools (such as Rationale Team Concert or Team Foundation Server) that is used to manage and store the Agile process information. To achieve this, SLI investigates several support and deployment capabilities including:

- The development team’s capabilities for providing Agile/SCRUM and traditional PMI project management
- The development team’s skilled resource pool to staff the project Day 1, and additional skilled resources, if needed
- Application Lifecycle Management (ALM) toolset’s suitability to Agile operations

SLI’s initial review is focused on assessing the development team’s ability to apply their Agile process to the type of project a client has initiated. We begin here to clarify how well the development team’s Agile processes are suited to the project, particularly in the area of configuring/tailoring an existing product for state deployment.

The following Sprint Diagram depicts the four primary areas where the SLI focuses our initial quality reviews – Key Roles, Key Planning Artifacts, Build Product, and Sprint Ceremonies.



SLI Sprint Diagram. The Sprint Diagram depicts the main Agile/SCRUM process areas that the SLI team reviews and evaluates for process improvements.

SpARC verifies the development team’s project management capabilities. Agile development does not lessen the need for effective project management. The development team must be fluent in both Agile process and traditional PMI-based project management practices.

SpARC enables the development team managers to be an effective management conduit between the State management team and the SCRUM teams, handling the on-going software



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updates and revisions that occur at a rapid pace, while also providing a timely and accurate project status view to the State management team.

SpARC assesses whether the development team’s choice of ALM toolset is well suited to Agile process development activities and also their expertise in configuring the ALM toolset. Both are important to a state’s project success.

Key success factors regarding the suitability of an ALM toolset are the availability of pertinent data attributes and flexible configuration during installation. Of equal or even greater importance are the development team’s experience in configuring and aligning the ALM toolset to the particular needs of the project. Experience shortfalls in either area can trouble the project throughout its schedule, producing performance drags on SCRUM teams’ delivery rates.

SpARC spans the development team’s Agile/SCRUM methodology and their repertoire of implementation support capabilities for deploying and implementing its Agile methodology.

SLI evaluates processes to support the SCRUM teams such as Agile process coaching, environments management and project configuration/release management as necessary “support capabilities” to the Agile/SCRUM methodology. Support capabilities include:

- Agile Champion support and training of SCRUM team leads
- Environments/Technical team
- ALM/Test Tools Support team
- Release management/build delivery team
- Network/Connectivity team

A key benefit of **SpARC** is that it provides a “whole-cloth” view of the development team’s Agile-development approach. Another key benefit of **SpARC** is that it provides a straightforward mechanism for cross-checking fundamental concepts, standards and approaches, and uniform terminology across the Team’s Agile-related processes, technologies and materials.

Agile is heuristics-based there is no “standard” for a methodology that prizes innovation in software process as the best route to rapid software delivery. As such, **SpARC’s** verification of a development team’s Agile toolbox involves evaluating heuristics operations; beginning with Sprint planning, release management, through the build process to effective Sprint ceremonies.

This enables a responsive quality assessment instead of lock-step checks of individual points. This supports the SCRUM team’s ability to spot key gaps the first time, and then recommend effective remedies.

SpARC Verifies a Project’s Process Maturity Levels in 5 Agile Process Area Domains

- Congruence between the development team’s Agile process and its support capabilities to perform Agile process tasks.
- Balance between the development team’s Agile process and the corresponding work activities in the Agile support capabilities.
- Clear agreement about timelines for task completion across the Agile process and support capabilities



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- Uniformly sourced or defined terms between the Agile process, support capabilities and any software product being modified by the project
- If there are standards with which a State Project must comply, there must be clear recognition by the development team that such standards compliance is not optional.

Congruence between the development team’s Agile process and their support capabilities is crucial because if the operational basics are not aligned, having a common set of Agile processes will not solve the resulting productivity problems.

SpARC verifies that, at a minimum, no single support capability operates “out-of-sync” with the development team’s Agile/SCRUM methodology or the other support capabilities. In an Agile software development project, the highest potential risk areas are the development team’s skilled technical staff/resource pool and the development team’s ALM toolset, both of which are difficult to adequately align with the Agile methodology.

Unless these areas are “*congruent on project day 1*”, the project will likely incur an unnecessarily longer productivity “ramp-up” while the project establishes that alignment.

Clear agreement about task scheduling and completion timelines focuses on how support tasks are scheduled for completion relative to the development team’s Agile/SCRUM methodology Sprint duration. All such tasks can have an impact on SCRUM team productivity.

By taking this multi-tier approach to verifying consistency across your Agile projects process components and work efforts, **SpARC** provides a simple, unified and powerful diagnostic capability to uncover gaps and disconnects, along with simple, coordinated recommendations for improvement.

SpARC adds Value to Agile

- Agile development teams are not required to create documentation solely for oversight consumption
- Oversight is tailored to Agile, not the reverse
- Oversight provides immediate feedback to SCRUM/development teams
- Feedback is specifically focused on Agile process improvement and performance



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