



Savannah River
NUCLEAR SOLUTIONSSM



Adding Agile Guidance to the standard

NQA-1 Update

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April 20, 2021

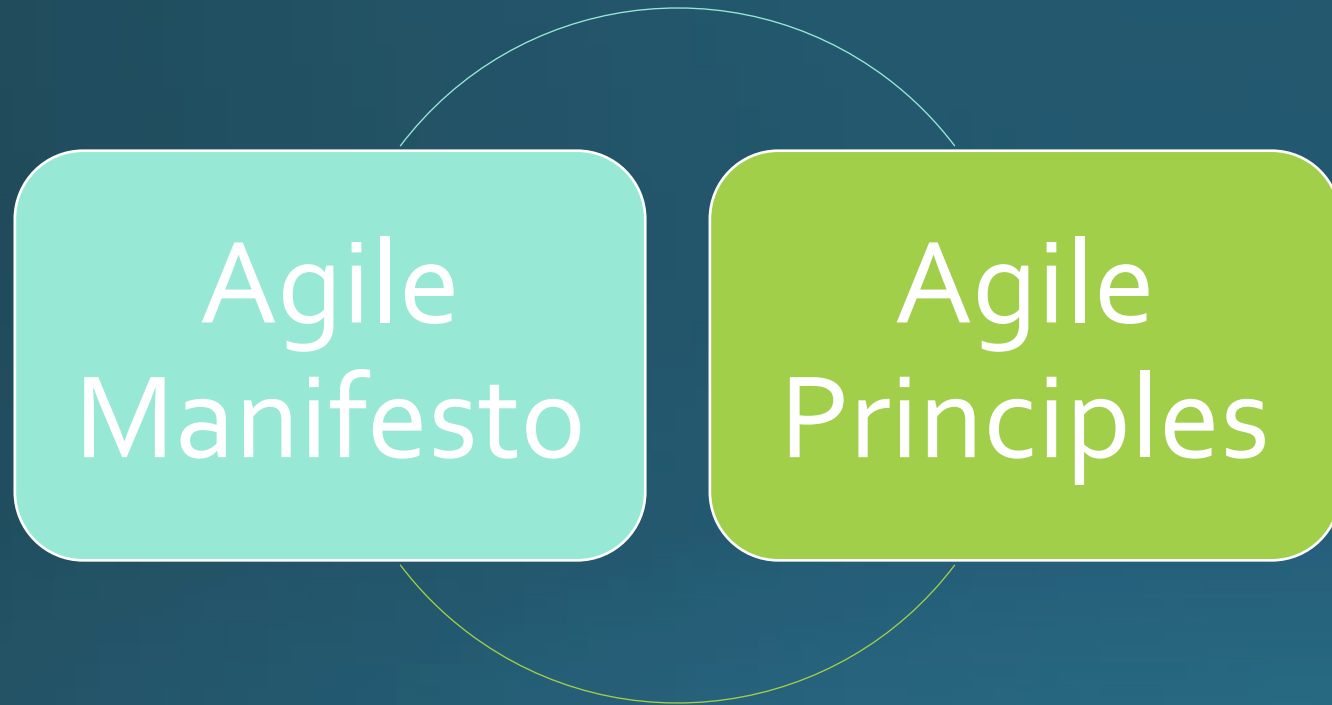


Disclaimer



*In My
Opinion*

- This presentation has not been reviewed by nor does it necessarily represent the opinions of ASME NQA-1 or the SQA subcommittee
- Nor does it represent the opinions of SRNS
- Lance made it up



Background

Manifesto for Agile Software Development

We are uncovering better ways of developing software by doing it and helping others do it. Through this work we have come to value:

- **Individuals and interactions** *over* processes and tools
Working software *over* comprehensive documentation
Customer collaboration *over* contract negotiation
Responding to change *over* following a plan
- That is, while there is value in the items on the right, we value the items on the left more.

The Fears



No processes and tools

No documentation

No plan

The Reality



Processes and tools should **enhance**, not drive, development

Documentation should be **"right-sized"** to the project

Plans - Estimates and schedules are **communication tools**. The goal is working software that meets customer needs. Adjust plans and communicate accordingly.



Principles behind the Agile Manifesto

- Our highest priority is to satisfy the customer through early and continuous delivery of valuable software.
- Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage.
- Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.
- Businesspeople and developers must work together daily throughout the project.



Principles behind the Agile Manifesto

- Build projects around motivated individuals. Give them the environment and support they need and trust them to get the job done.
- The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.
- Working software is the primary measure of progress.
- Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.



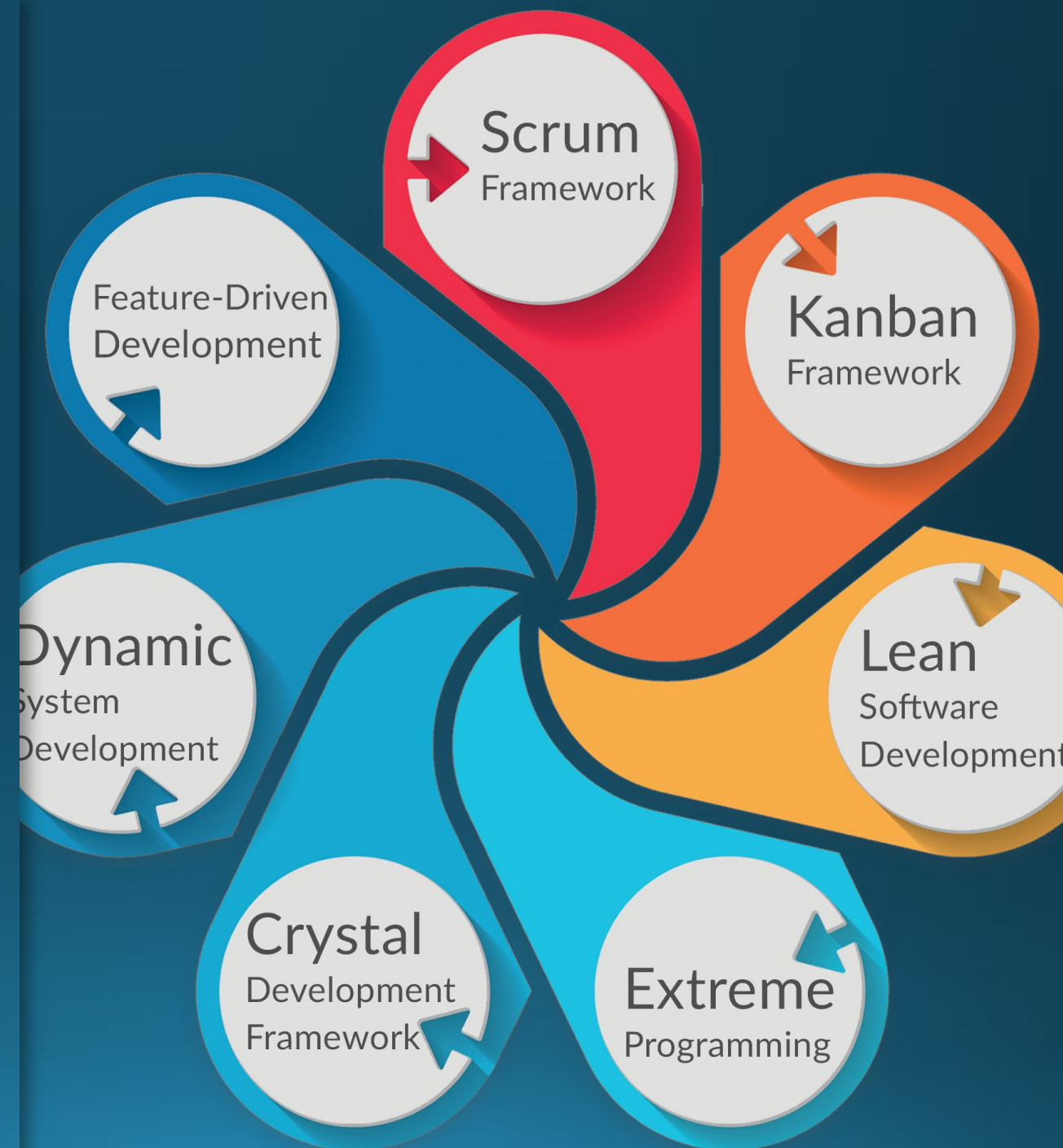
Principles behind the Agile Manifesto

- Continuous attention to technical excellence and good design enhances agility.
- Simplicity--the art of maximizing the amount of work not done--is essential.
- The best architectures, requirements, and designs emerge from self-organizing teams.
- At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly.

Creating guidance – the challenges

- What's not to like in Agile?
- What conflict with NQA-1?

- What should the guidance look like?
- Which Agile framework should be referenced?



NQA-1 Agile Guidance

- There was a TPN (Task Proposal Notice) issued, and a team formed
- A couple of initial drafts have been prepared which did not meet the expectations of some members of the subcommittee



Reset Expectations

- NOT a mapping of every “shall” statement in subpart 2.7
- NOT a matrix of “all” Agile frameworks
- NOT a tutorial in Agile, Scrum, Kanban, DevOps, Extreme Programming, Lean SW development, ...



Starting Point



The NQA-1 Standard is intended to be flexible with respect to the software engineering methodology chosen.

Part II, Subpart 2.7 section 400 SOFTWARE ENGINEERING METHOD describes several deliverables as part of the software lifecycle activities but is rarely prescriptive in how or when these deliverables must be produced.



Plan for Guidance

- Identify key deliverables from section 400 and how they may be achieved using an Agile framework.
- There are several Agile frameworks in use in industry. Each instantiation of a framework is often unique and tailored to the team therefore, it is not possible to produce specific guidance for every instantiation or even each framework.
- Will use an example of a Scrum framework to present how compliance to NQA-1 may be achieved for the key deliverables using the software engineering method.