

# Software Integration Modeled after the Scaled Agile Framework

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# 2014 Census Test Software Lessons Learned

SUCSESSES	CHALLENGES	IMPROVEMENTS FOR 2015
<ul style="list-style-type: none"> <li>• <b>Near “end-to-end” testing</b> performed for the Non-Response Followup Operation (NRFU) systems</li> <li>• Excellent testing participation from NRFU systems and stakeholders</li> <li>• Successful, on-time deployment of systems</li> <li>• Very few issues during production</li> <li>• <b>Successful agile software development</b> and requirements processes</li> </ul>	<ul style="list-style-type: none"> <li>• Needed a system development integration plan</li> <li>• Needed better integration of agile and waterfall development methodologies</li> <li>• Needed better integration of software and hardware teams</li> <li>• Needed better communication of changes</li> <li>• Output data was reviewed late (not until User Acceptance Testing)</li> <li>• No fully integrated, established, software development environment</li> </ul>	<ul style="list-style-type: none"> <li>• Improve integrated software development</li> <li>• Identify a Vision Owner for the program</li> <li>• Maintain program vision throughout software development life cycles</li> <li>• Integrate early and regularly to mitigate interface challenges</li> <li>• Communicate regularly:               <ul style="list-style-type: none"> <li>• Changes</li> <li>• Issues</li> <li>• Dependencies</li> </ul> </li> <li>• Increase transparency of project and program progress</li> <li>• Validate data sooner</li> </ul>

# 2015 Census Test Software Development Goals

**Goal:** to improve software development and integration for the 2015 Census Test.

- **Synchronize** each of the separate software development efforts
- **Integrate** regularly to identify and mitigate integration challenges
- **Communicate** changes across each of the development efforts
- **Transparency** into each of the software development projects

**Scope:** all planning, coordination, development and testing activities required to integrate and align the multiple NonResponse Followup Up project teams into a single program solution.

# Approach

- Modeled after the Scaled Agile Framework (SAFe)
- Release a “potentially shippable” integrated software solution every 8 weeks
- Receive prioritized features and guidance from the Program Owner to plan each Release
- Commit to Release Objectives as a Program based on feature priorities
- Status integration issues twice-weekly; troubleshoot as needed
- Demonstrate integration progress regularly at weeks 3 and 5
- Demonstrate the integrated program solution to the Program Stakeholders every 8 weeks
- Inspect and adapt the process

# Organization

## Program Team:

**Vision Team:**  
Program Owner,  
Product Owners

**Integration Team:**  
Release Coordinator  
Integration Engineers  
Business Analyst  
Solution Architect  
Technical POCs

## Project Teams:

ARMS

Automated  
Training

CHEC

Comm.  
Manager

COMPASS

DAPPS

MAF/  
TIGER

MOJO

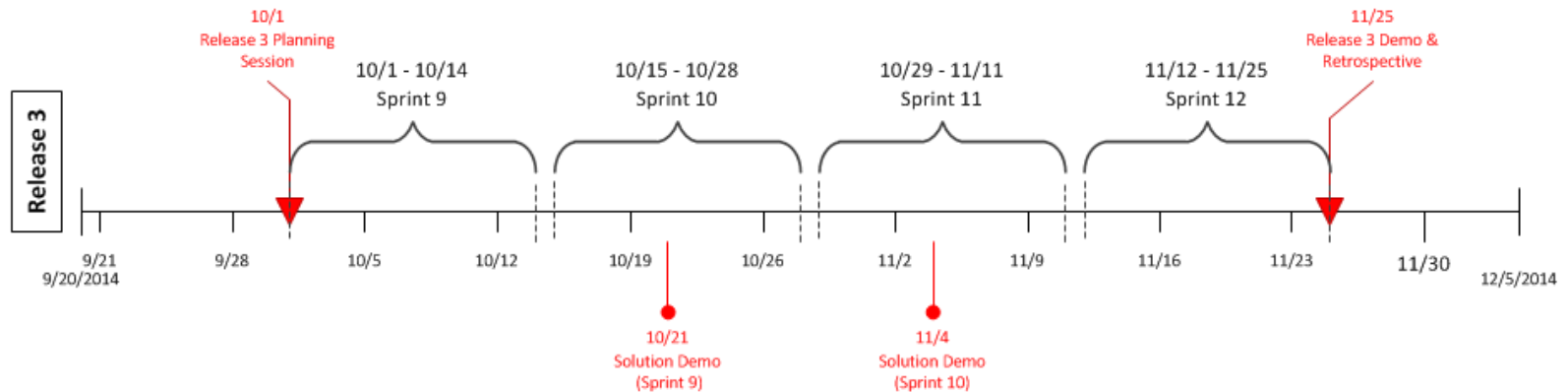
NRFU DO

RTOCS

TCO

UCRM

UTS



# Accomplishments and Lessons Learned

## Accomplishments

- Established and demonstrated integrated development and testing environments
  - prior to scheduled systems testing activities
- Stakeholders began data validation prior to UAT
- Partial implementation of code promotion software to support continuous integration
- Proved scalability
  - New approach was well received
  - Growing solution provider participation
  - Increased scope of functionality to support additional follow-up operations

## Lessons Learned

- Continue to engage additional interfacing systems, stakeholders, management and IT resources
- Focus release demonstrations around integrated software functionality and business value added

# Opportunities to Increase Success

- Enforce clear lines of escalation to program oversight
- Continued environment and IT support
- Incorporate coordinated integration testing into the framework

# Questions