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Automating USMC Software Releases for TSOA
A DoD DevOps Case Study

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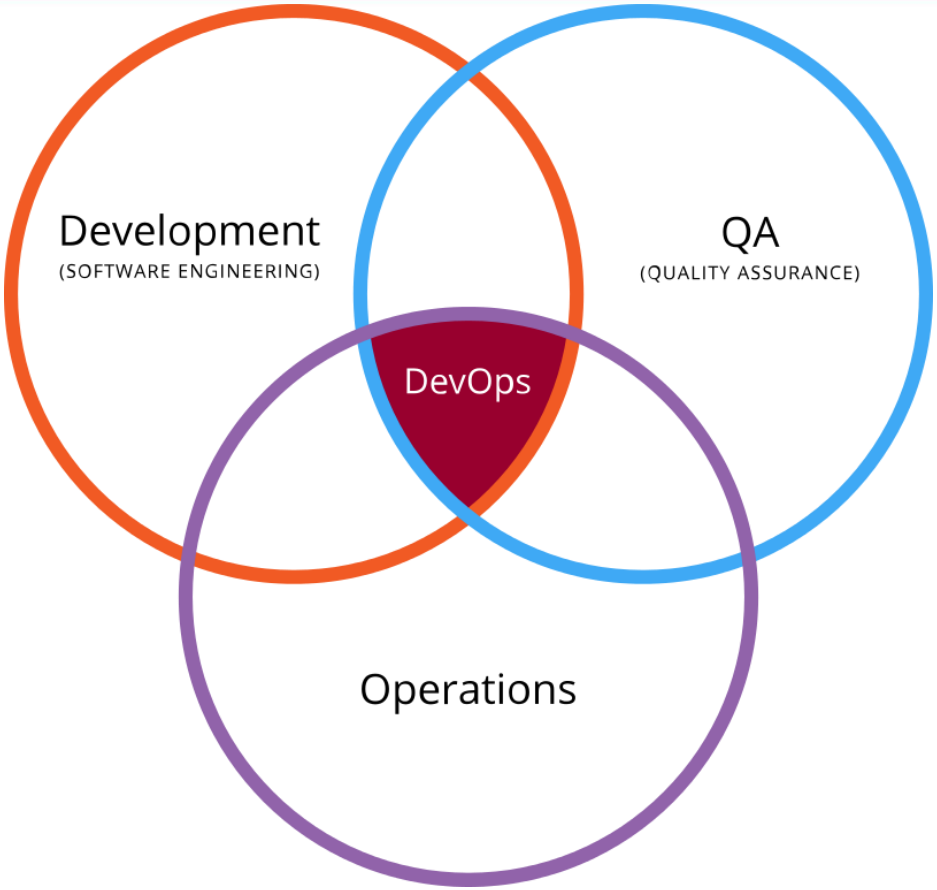
Unlimited Distribution

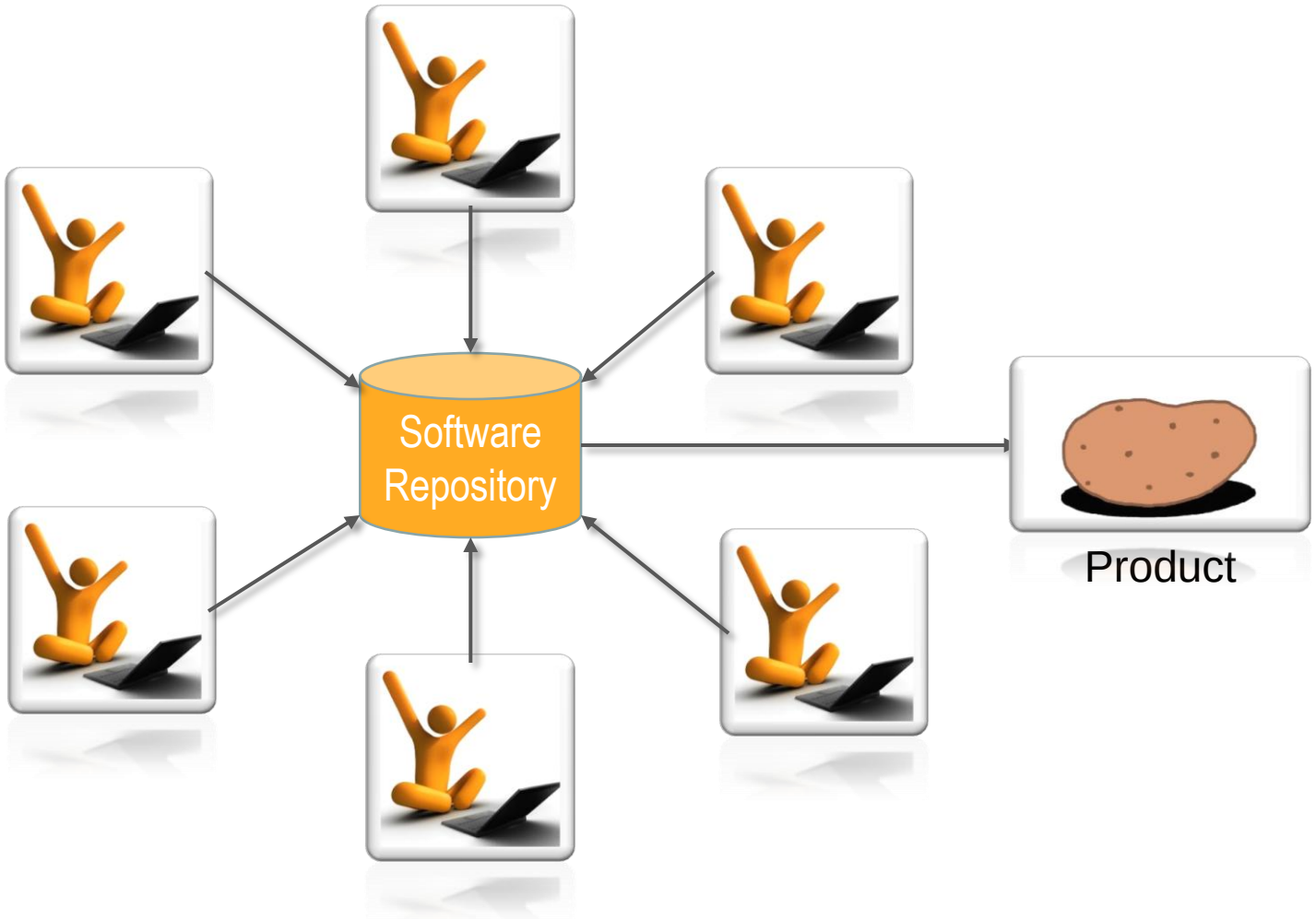
DevOps Summary and Goal



DevOps Goal

Push-Button Releases To End-Users

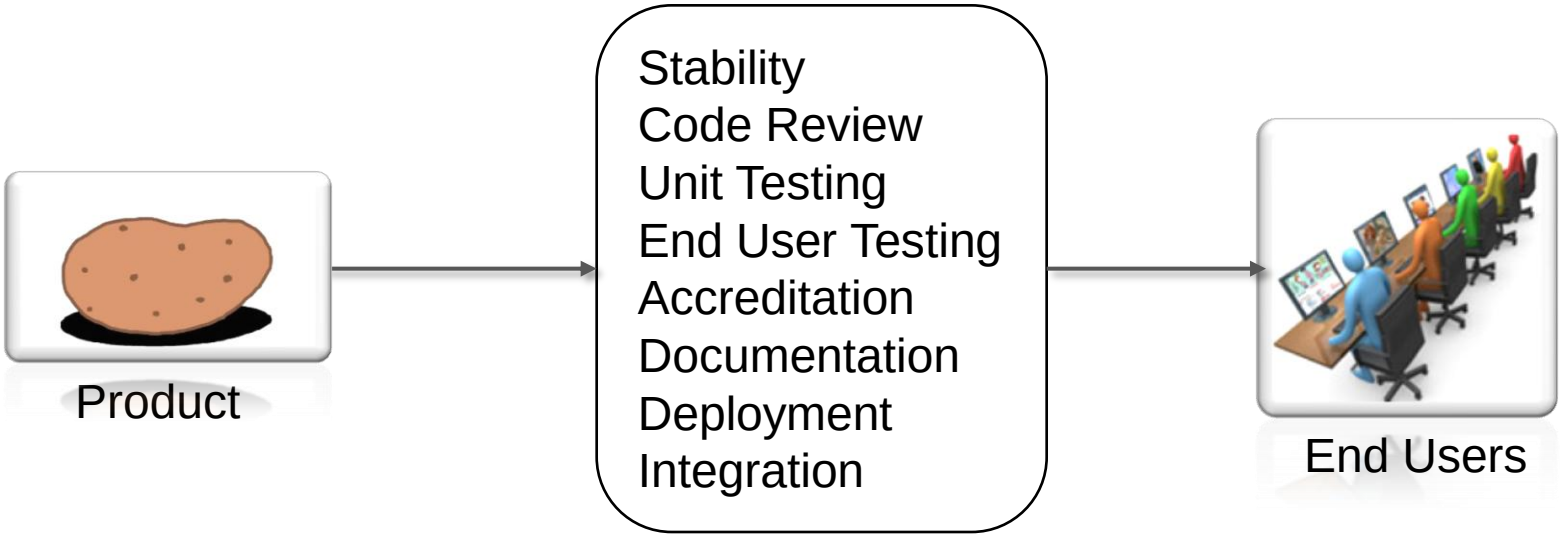
Software Development Workflow (2011)



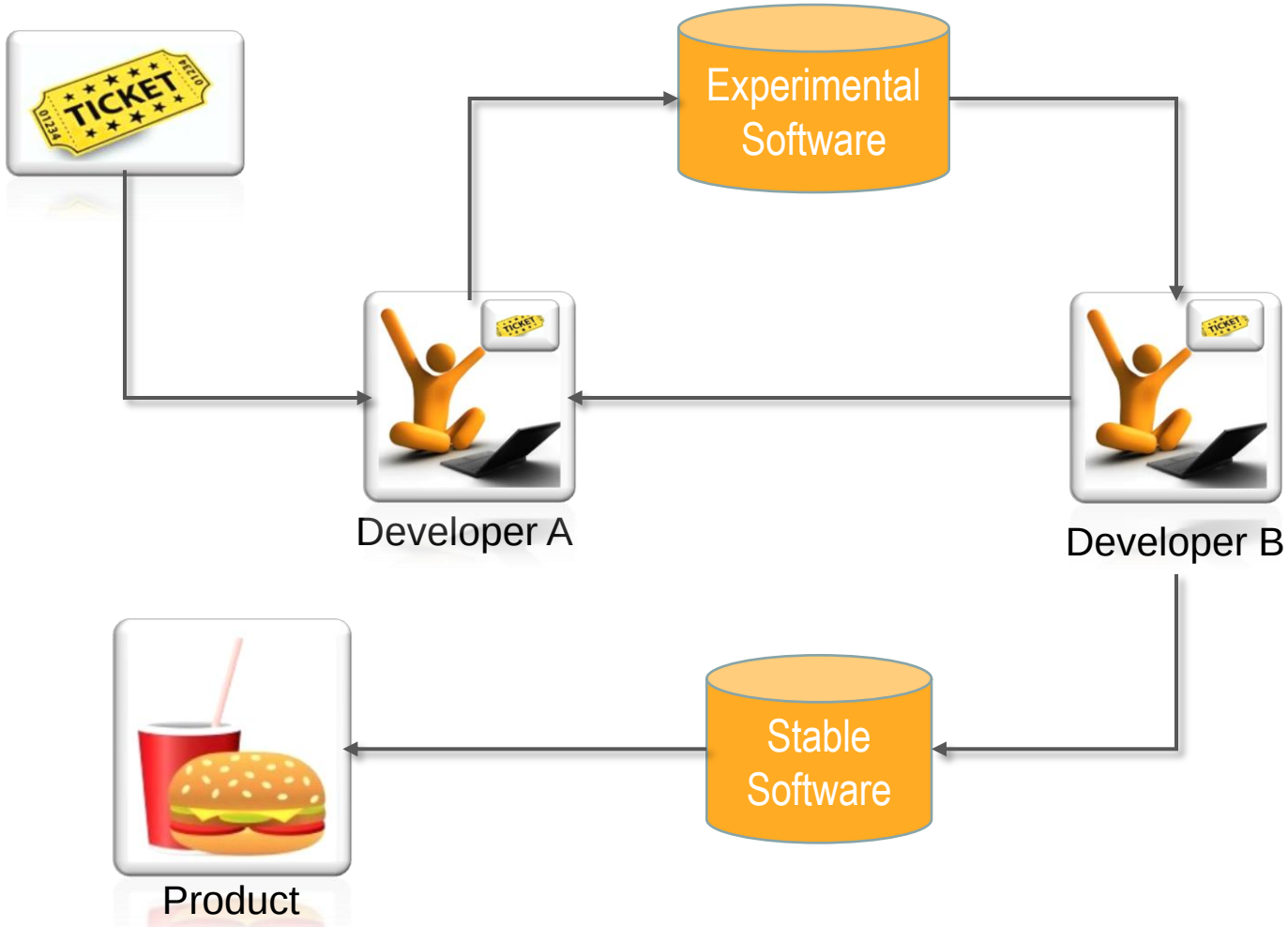
Software Development (2011)

Software Development Process

- DevOps consists of only revision control
- Unstable, unreliable code in main/production branch
- Little to no Continuous Integration (CI)
- Lots of post-development cleaning
- Lots of breath-holding at SCRUM demonstrations



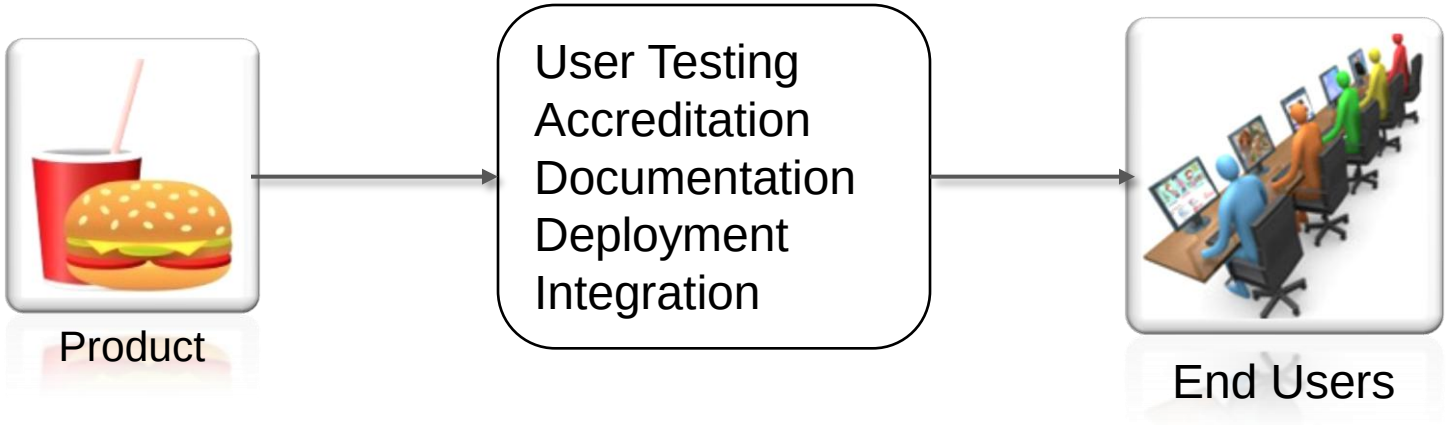
Software Development Workflow (2014)



Software Development (2014)

Software Development Process

- Every line of source code must be related to a ticket/tracker
- All development occurs on experimental branches, not production
- All software must be reviewed before merging with production
- Reviewer shares responsibility with original developer



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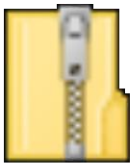
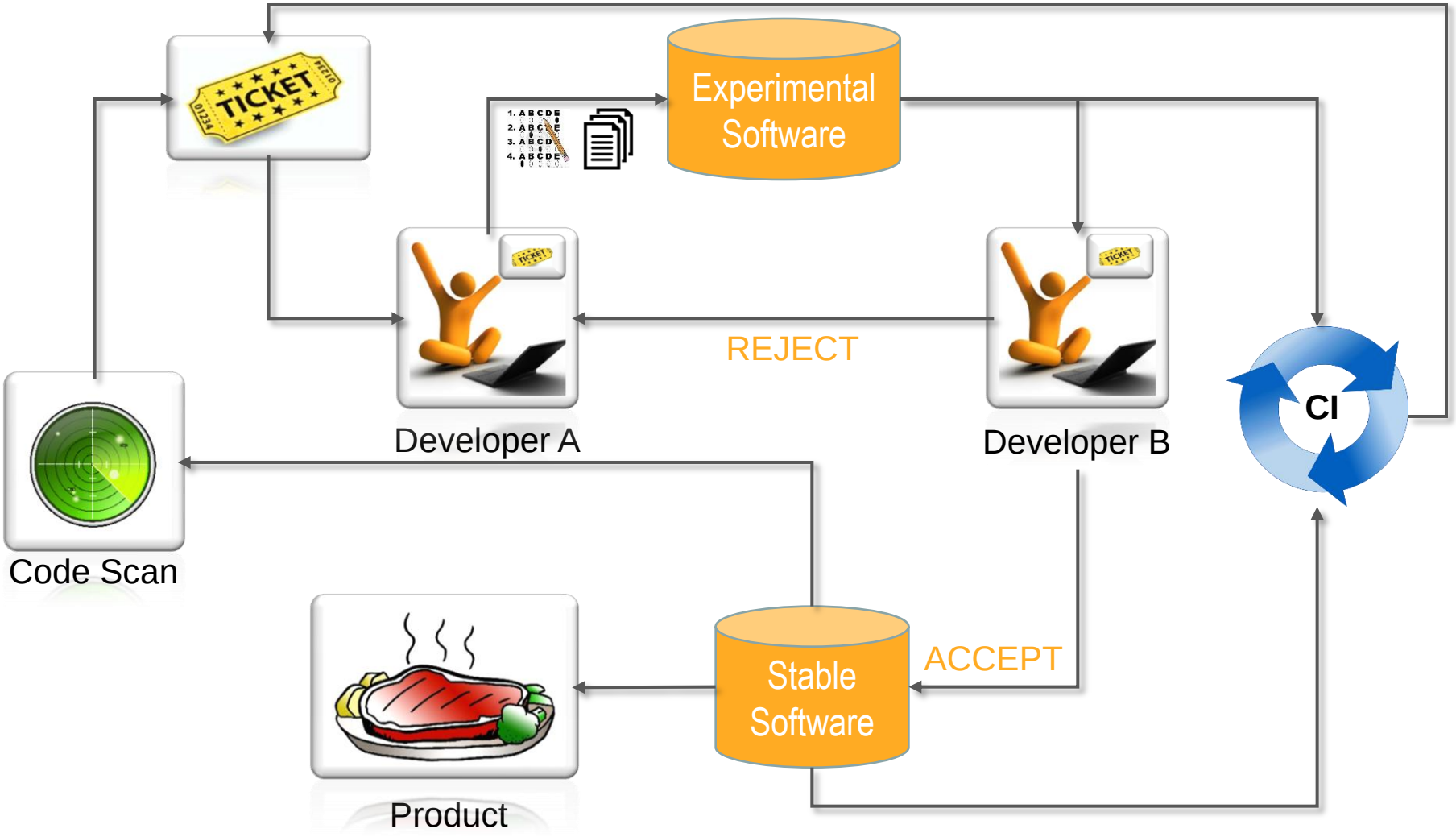
Workflow Leave-Behind

- Attached zip file contains the workflow project from 2014. Please feel free to try this out on your software development efforts.



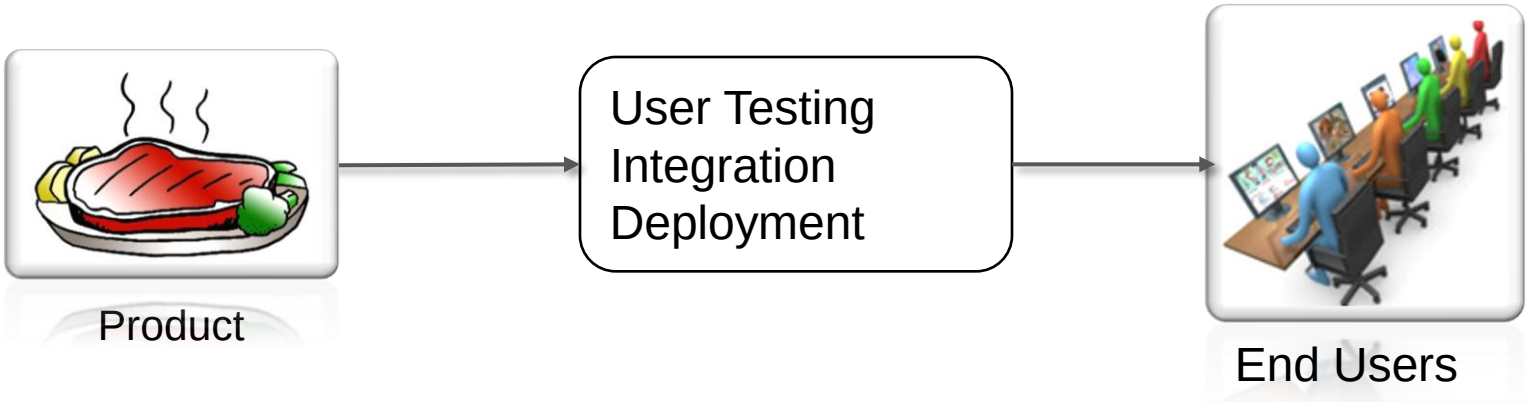
workflow.zip

Software Development Workflow(2016)



Software Development (2016)

- Adding Accreditation to the pipeline
  - Include IA representatives at all relevant SCRUM meetings
  - Incorporate Daily HP Fortify Scans
- Adding Documentation to the pipeline
  - Migrated all documentation from MS Office to LaTeX
  - Documentation lives in repository along-side source code
  - End-User PDFs and In-Product documentation are developed from the same source



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Enhancements for 2017

- Automated End-User Testing
- Automated TSOA Integration
  - R2I DevOps are local at SSC Pacific
  - Other supporting organizations have their own internal DevOps processes
  - Final integration for the USMC TSOA project is still a manual process

TSOA Integration (2017)

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TBD: DevOps Operations

- USMC software release approval is still a paper-driven process
- Digital distribution is partially solved by Marine Corps Software Resource Center (MCSRC)
- Nature of Defense work complicates some DevOps Operations
  - Software Updates
  - Software Configuration on the deployed system
  - Feedback from end-systems (Metrics/Health)

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Thank You

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