

Automation of Structural NDT Tracking NSRP Planning, Production Processes & Facilities Panel Meeting October 9-10, 2019

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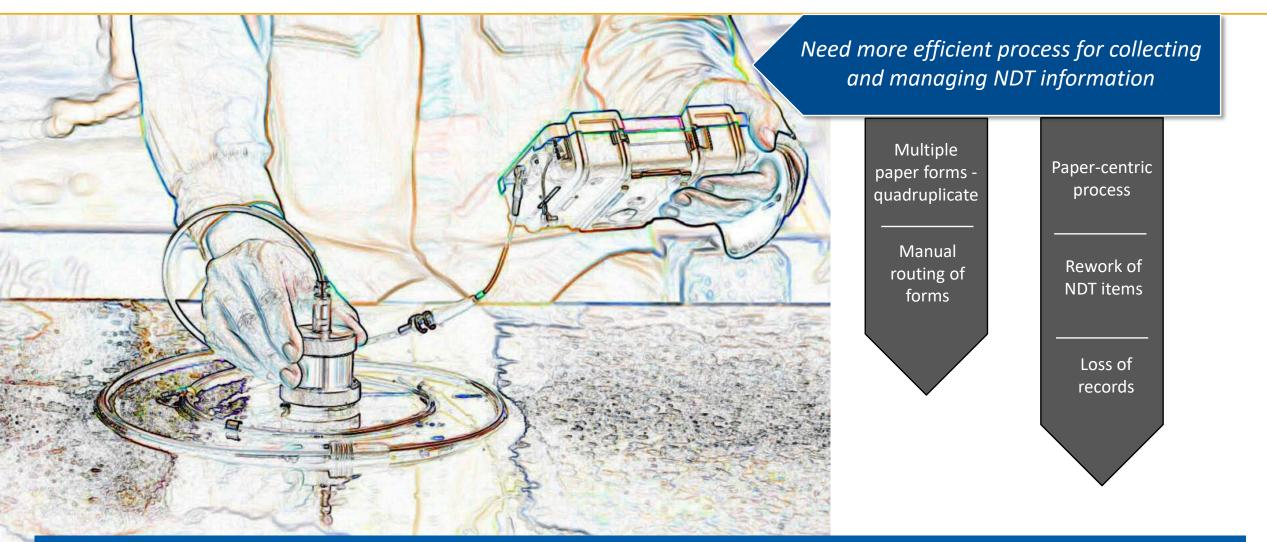








What Is The Issue?



Quality department needs a new, more efficient process for tracking NDT









Objectives Defined

Create a new optimized electronic process for request, execution, processing, and archiving of Non-Destructive Testing

Electronic

routing & workflow

Automated

record retention

Reduced Rework

Automated population of NDT process elements

Streamlined

process

Expedited approval process

Increased efficiency









What Did We Do?

- *Conducted* extensive assessment with stakeholders:
 - ↗ Discovery of all current structural NDT processes
 - ↗ Mapped current NDT process
 - ↗ Developed future process
- Compiled detailed requirements set for functional development
- *Defined* architecture based on functional requirements

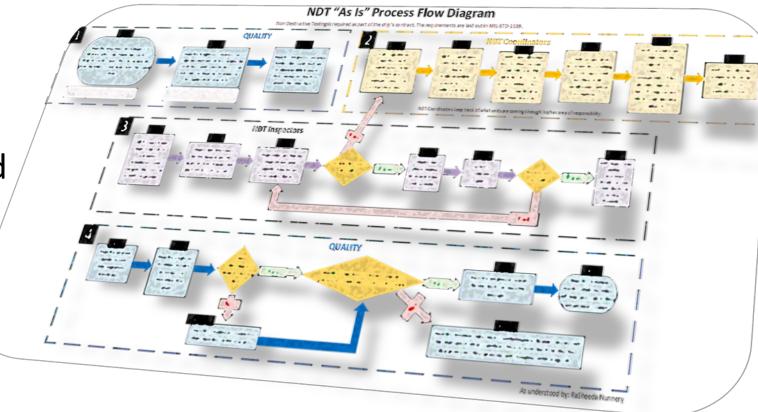








 Identify all current structural NDT products, producers, and consumers



Map the extent of the current process









Technical Approach – What Did We Do?

- Technology Assessment
 - iOS device selected for mobile application
 - Expansion of existing web-based Quality Information System for workflows and record retention



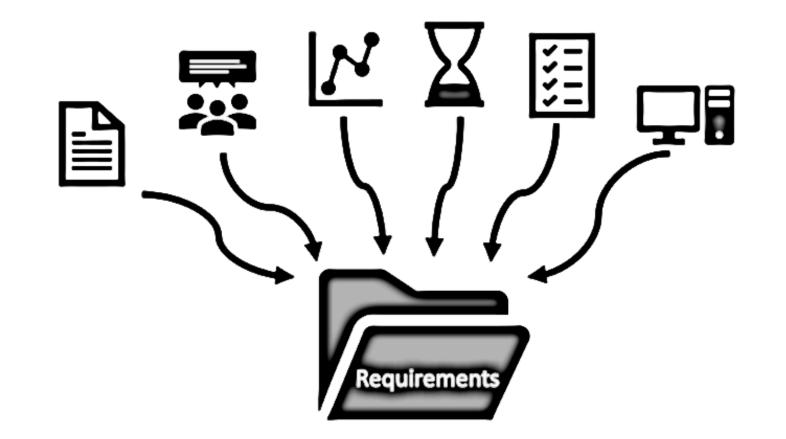
Technology outcome ultimately based on current in-use technology











Create detailed process requirements set

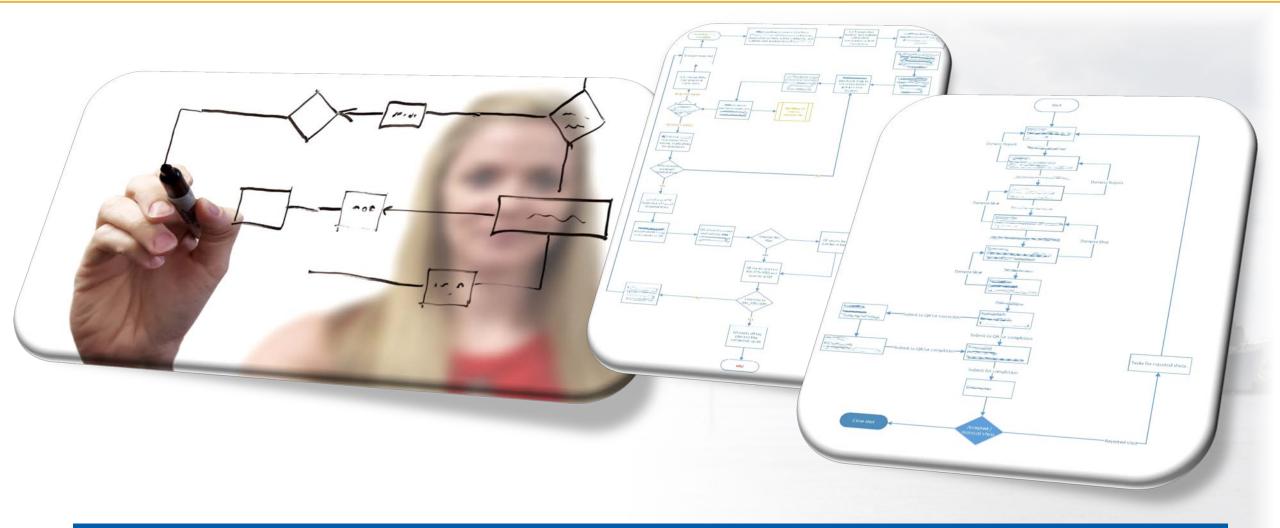








Technical Approach – What Did We Do?



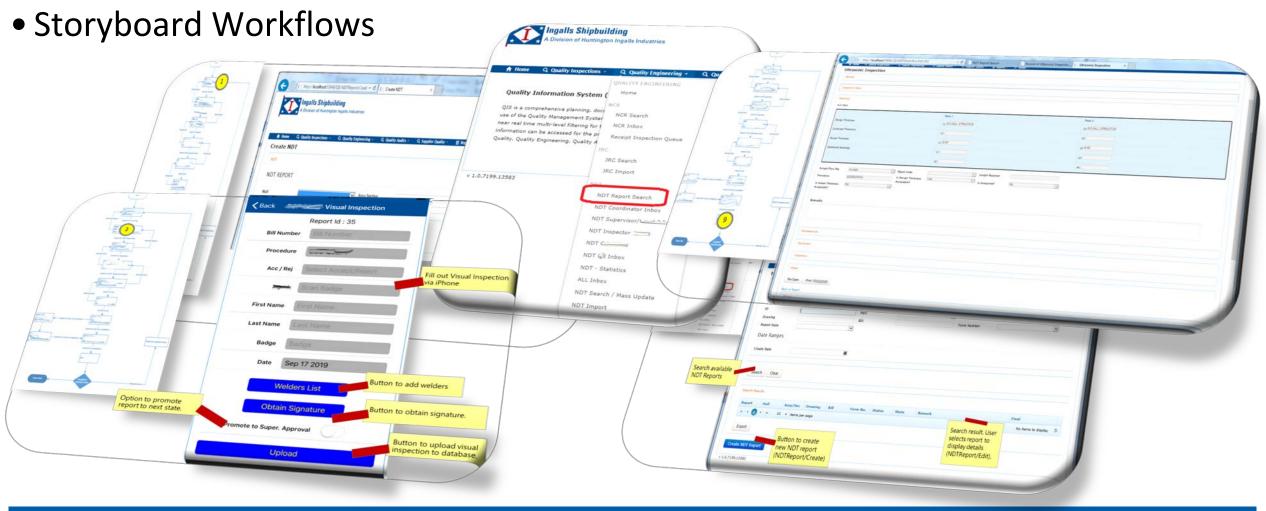
Create new process and architecture











Create mock-ups to refine design approach for user interaction with new process/electronic systems



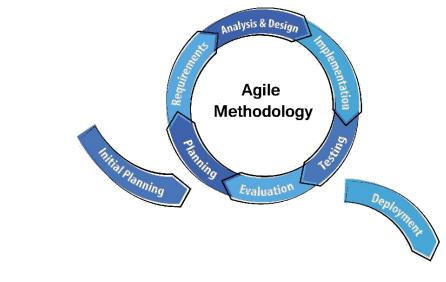


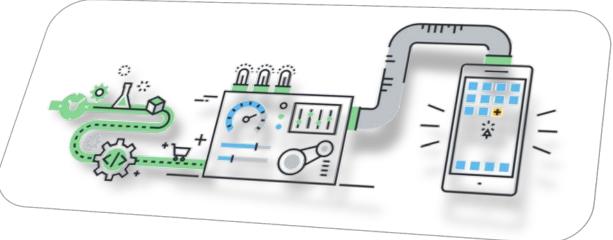




Create new NDT tracking tool

- Develop web forms
 - Develop the NDT tracking tool as a single repository for all NDT data
 - Creating electronic workflow
 - Alert to users when NDT items have progressed
- Develop iOS Application
 - Data integration with web forms













iOS Application















- Successful Pilot Execution
 - Performed over the course of three days
 - Fourteen participants (Quality Analysts, Quality Engineers, NDT Supervisors, NDT Coordinators, and NDT Inspectors)
 - All test scripts "PASS"
- Great feedback from end-user community
 - "This is really going to help us"
 - "This will make a huge difference"
 - "I was skeptical at first, but it has really come together"







- New digital NDT tracking process utilizes a single data management tool across all ship programs
- Existing Quality Information System provided an excellent foundation
 - Lifecycle, workflow, user management, data management, and email/notification management are already integrated
- Similar concepts can be employed for other processes to drive additional value
- Developing mobile applications for use within a Mobile Device Management (MDM) system can be challenging
 - Lots of interactions to be accounted for, especially when there is data exchange involved









Questions?









