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"DoD Application Store: Enabling C2 Agility?"

19th International Command and Control Research Symposium
"C2 Agility: Lessons Learned from Research and Operations"
Track: 3

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Outline

- Information: Key Warfighting Domain
- Defense Acquisition System Challenges
- Overview of Recommended Solution
- Conclusion

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Information: A Key Warfighting Domain

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"[T]he Navy will create a fully integrated C2, information, intelligence, cyberspace, environmental awareness, and networks operations capability and wield it as a weapon and instrument of influence."

U.S. Navy Information Dominance Vision
United States Navy, Information Dominance Corps
May 2010

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Warfare Domains

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"The Navy is pursuing improved information-based capabilities that will enable it to prevail in the higher-threat, information-intensive combat environments of the 21st Century."

U.S. Navy Information Dominance Roadmap
United States Navy, Information Dominance Corps
March 2013

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Two Challenges

In a world of information overload, how do we ensure we get the right information to right warfigther at the right time?

In a world of budget constraints, how can we agilely shift our mission, and the C2 capabilities needed, to respond to a new demand?

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Defense Acquisition Challenges

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Challenge

- Industry has already fine-tuned its use of widgets and mobile applications
  - Rapidly evolving software development paradigm
  - A driving force in delivery of web-based dynamic content
- Using standard acquisition processes in DOD, by the time new solutions are deployed to the warfighter, the technology is obsolete
- Several programs within the DOD have started similar initiatives that hold the promise of reducing the “heavy lifting” required as part of the current acquisition process

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Defense Acquisition System Challenges

- Defense Acquisition System was designed to purchase “big ticket” items like aircraft carriers and fighter planes
- Excessive development and update cycles
  - Private sector cycles are 12 -18 months
  - Defense IT systems routinely require 48 - 60 months

Average Build Time: 7+ years

Average Build Time: 18 mos.

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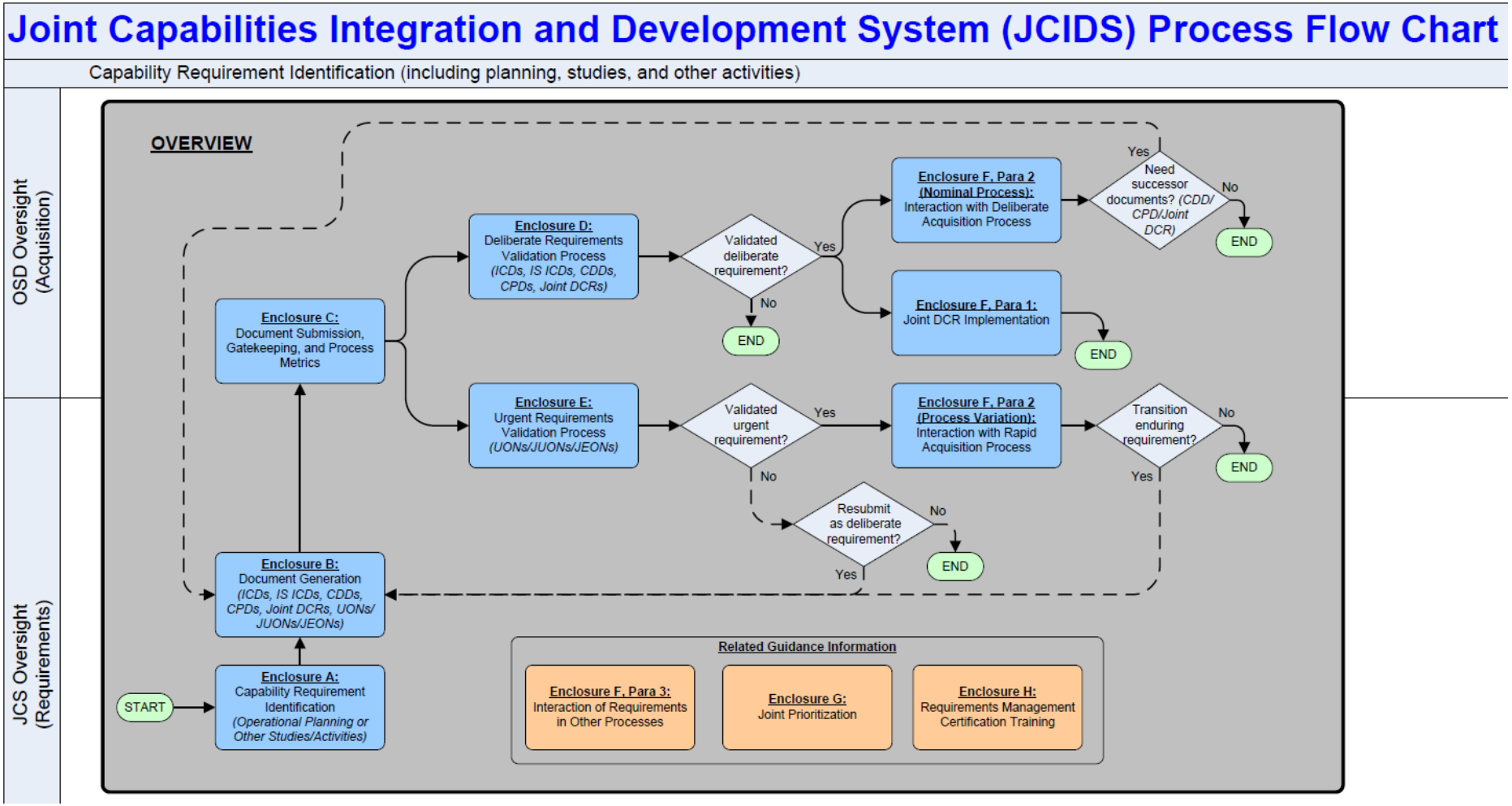
The Current Process

Joint Capabilities Integration and Development System (JCIDS) Process Flow Chart



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Overview of Recommended Solution

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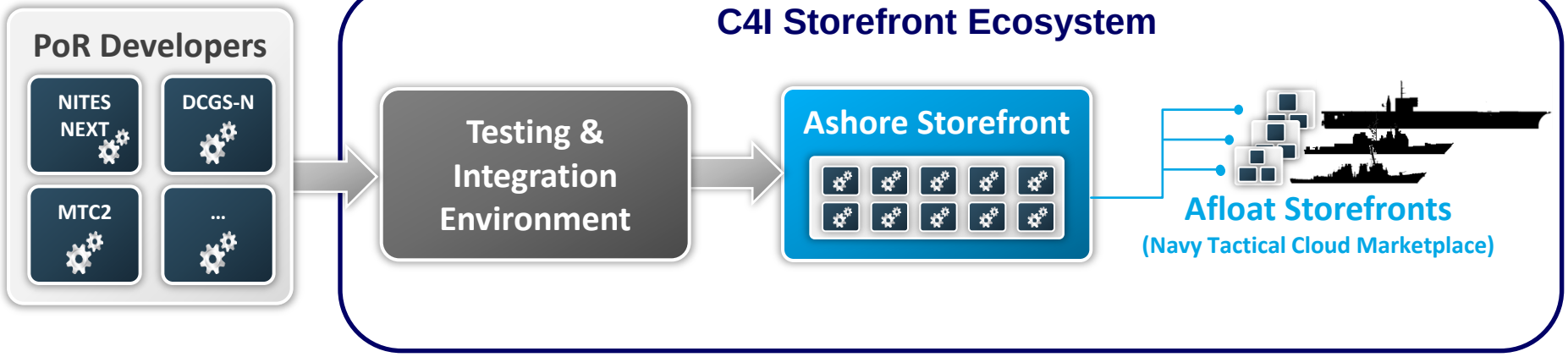
Overview of Recommended Solution

- A lightweight web application test and integration (T&I) environment
  - Needed to model, test, exercise, and perform certification and accreditation of widget capabilities
- A Widget T&I environment is required for widget technology development throughout the DOD
- A widget T&I environment is needed that incorporates the unique and common aspects of Navy widget environments

PEO C4I Storefront
Overview and Benefits



Increased Speed to Capability

CAPABILITY DEVELOPMENT
Current *(12 – 18 Months)*
Proposed *(6 Months)*

TESTING (OT & IA)
Current *(6 – 8 Months)*
Proposed *(2 – 3 Weeks)*

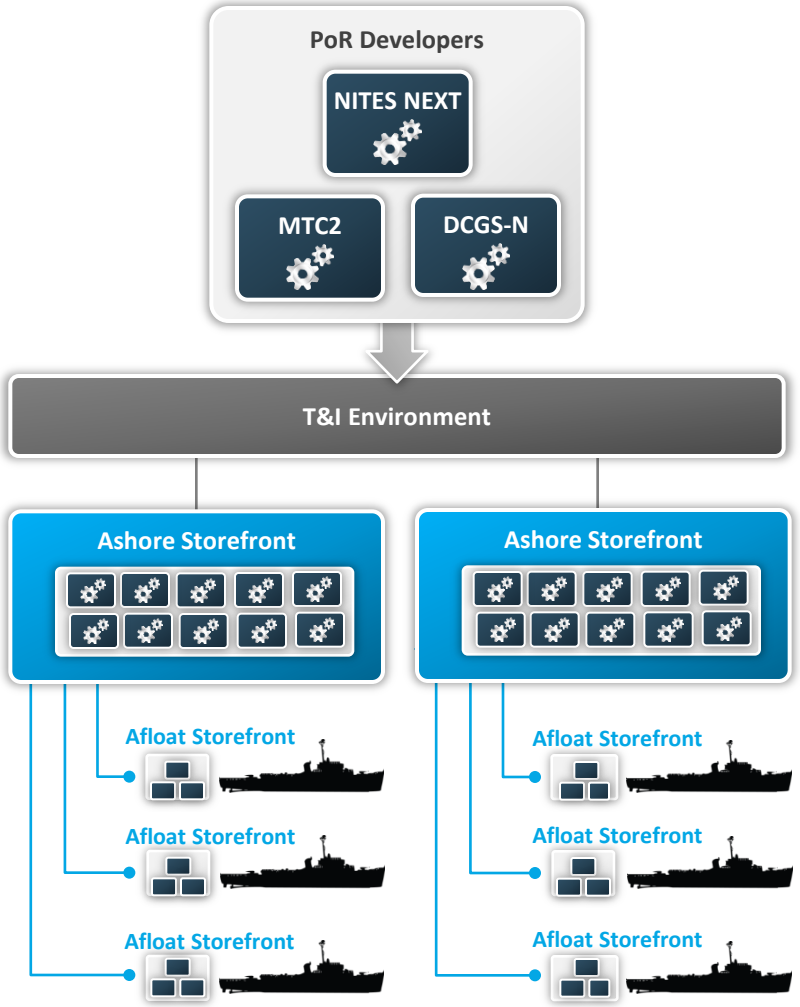
FIELDING
Current *(2 Weeks)*
Proposed *(Days)*

Reduced Total Ownership Costs

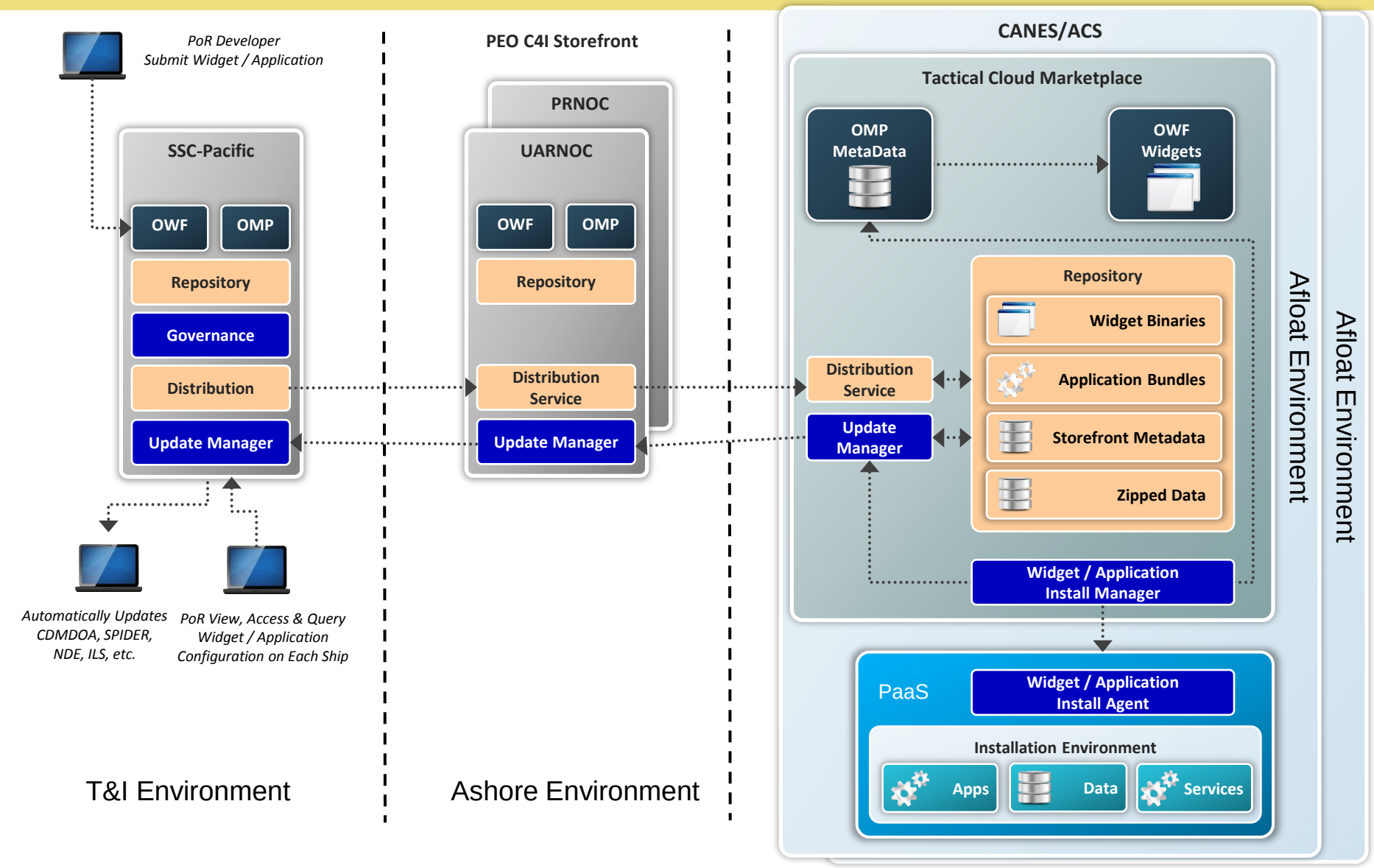
- Cost per app rather than per platform
- Fielding cost down
  - Upload once; available for all approved platforms
  - Automate delivery of widgets, applications, and services
  - No tech visit necessary for installation
- Sustainment cost down
  - Automate distribution of updates / patches

New OV-1

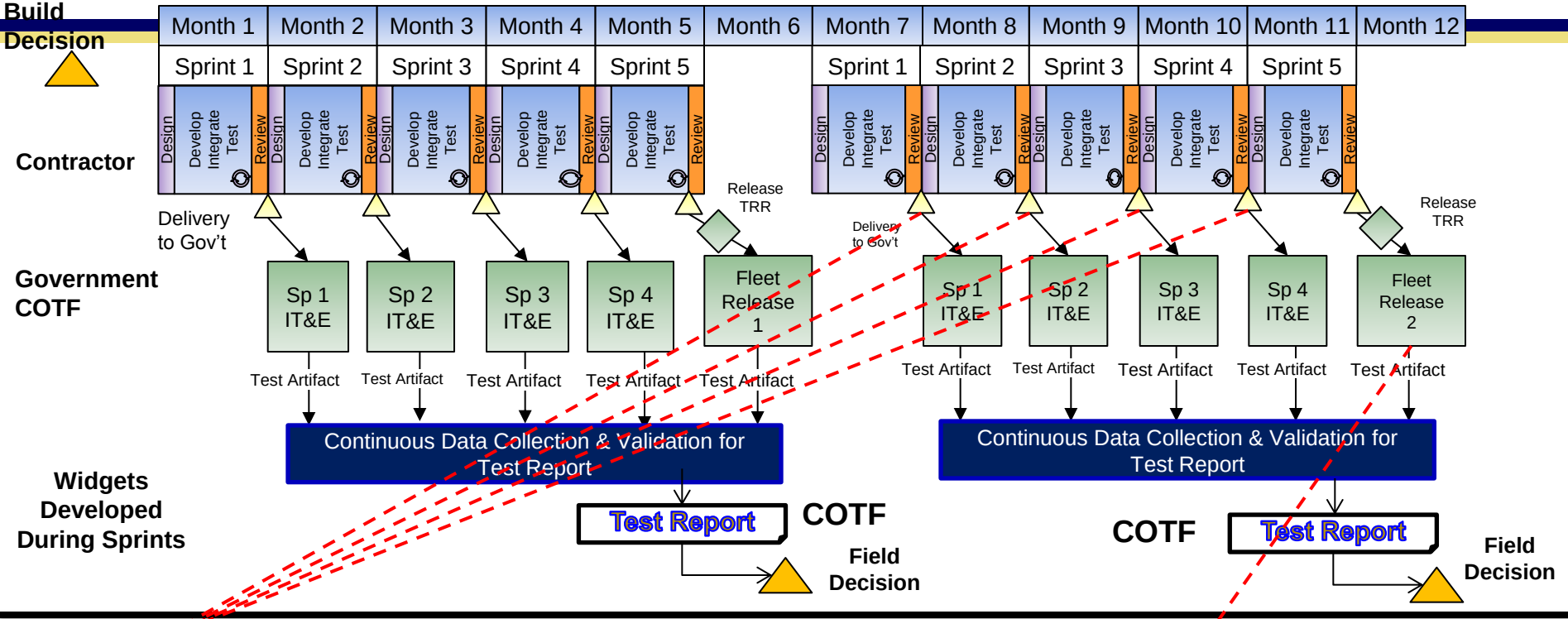
- The Storefront T&I environment provides:
  - Automated submission of new warfighter capabilities
  - Manual and automated integration, functional, and IA testing of widgets and applications
  - Rapid approval process to push new warfighter capabilities to the operational environment
- The PEO C4I Storefront provides:
  - PEO C4I capabilities to ashore users
  - Distribution of PEO C4I capabilities from ashore to the tactical environment
- The Navy Tactical Cloud Marketplace provides:
  - Afloat users the ability to discover, access, and use PEO C4I capabilities
  - Provides feedback on capabilities received, updated, and installed back to the PEO

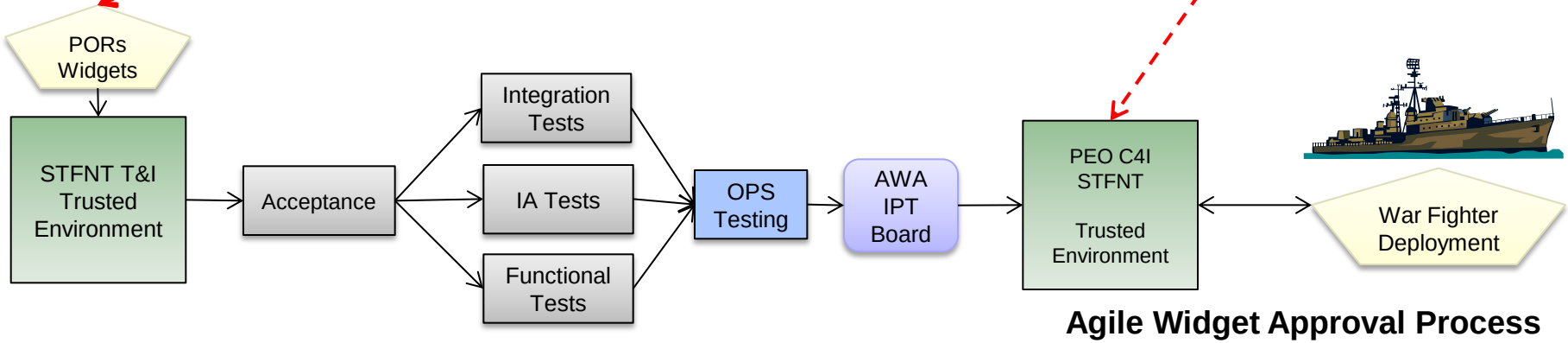


Navy App Store Enterprise



Rapid IT Process & Agile Widget Process





Agile Widget Approval Process

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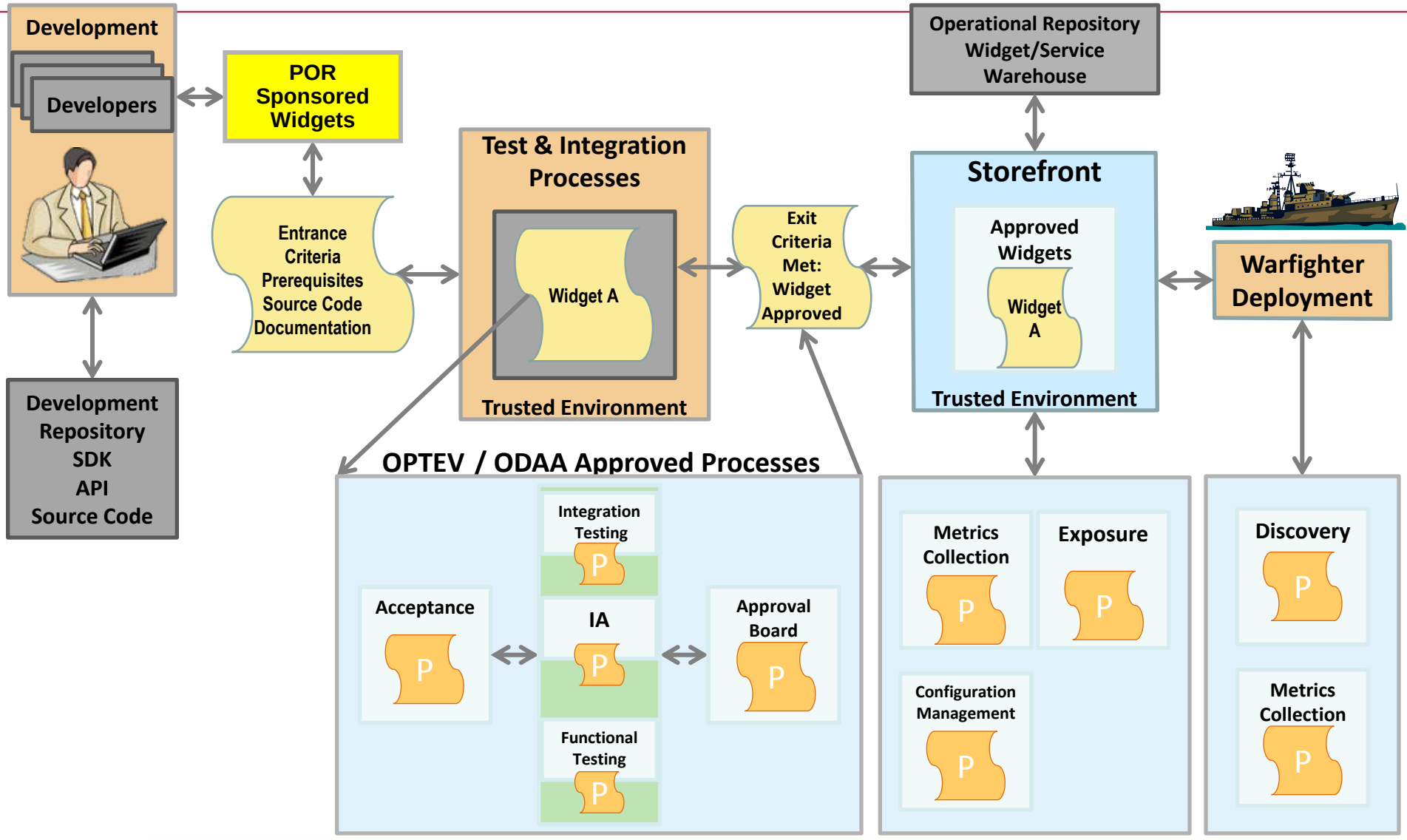
Proposed Widget Governance Process



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Conclusion

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Conclusion

- Rapid IT acquisition is a way to provide the warfighter with composeable C2
- Composeable C2 capabilities enable our warfighters to innovate in theater to provide the right information, to the right people, at the right time

"The only response to change is innovation."
– John Kao

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BACKUPS

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Industry Approach

- Current acquisition rules required for POR systems have caused a major gap between the technology available to the warfighter and that which is available commercially
  - Exacerbated by capabilities of smartphones and tablet computers
  - Greater gap for younger service members raised on commercial technologies and then forced to use outdated systems
- Apple and Google are both known for their mobile operating systems and the applications (or “apps”) that run on them
  - Both companies have “app” stores that allow developers to rapidly deploy applications, but they do so in very different ways

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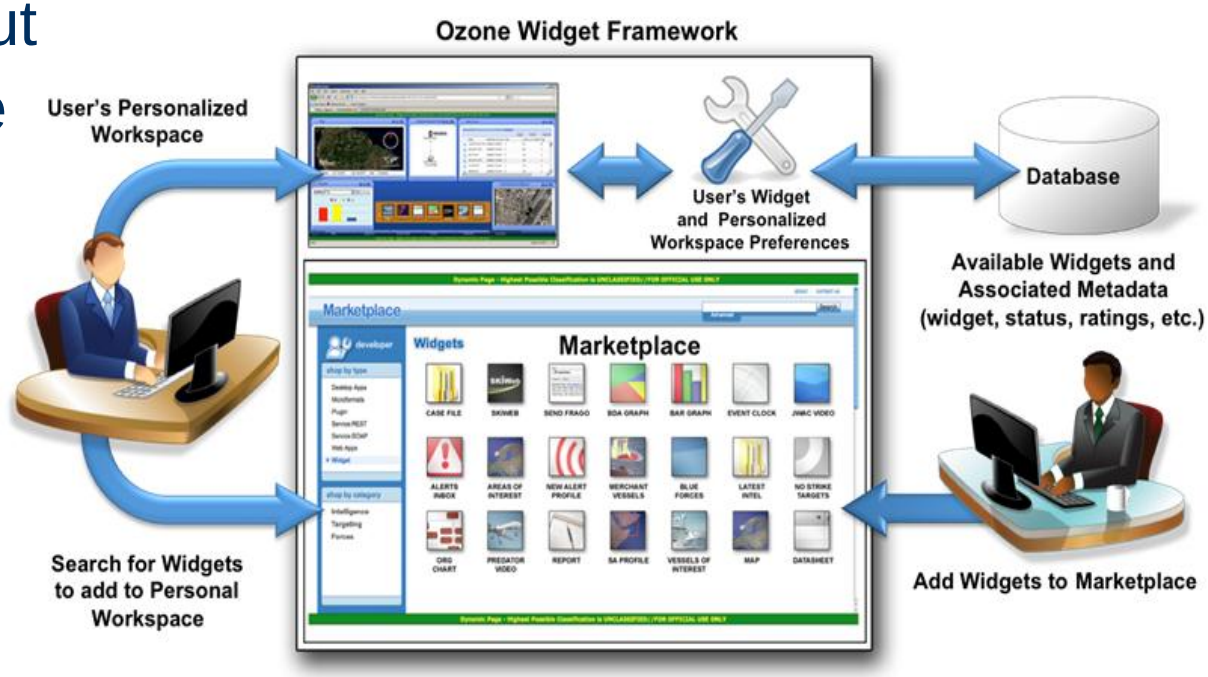
Ozone Widget Framework

- A platform that offers infrastructure services to simplify the development of workflows and presentation-tier application integration

- It is also a layout manager for the operation of widgets on a single web page



PEO C4I Storefront
Vision

- Warfighters access *all* C4I capabilities via a *single*, browser-based C4I Storefront
  - Widgets
  - Applications
  - Updates / Patches
- Common PoR processes and a standard mechanism for deployment
- Positive control and visibility into the C4I systems and version available on the network

*iPhone is a registered trademark of Apple, Inc., 1 Infinite Loop, Cupertino, CA 95014

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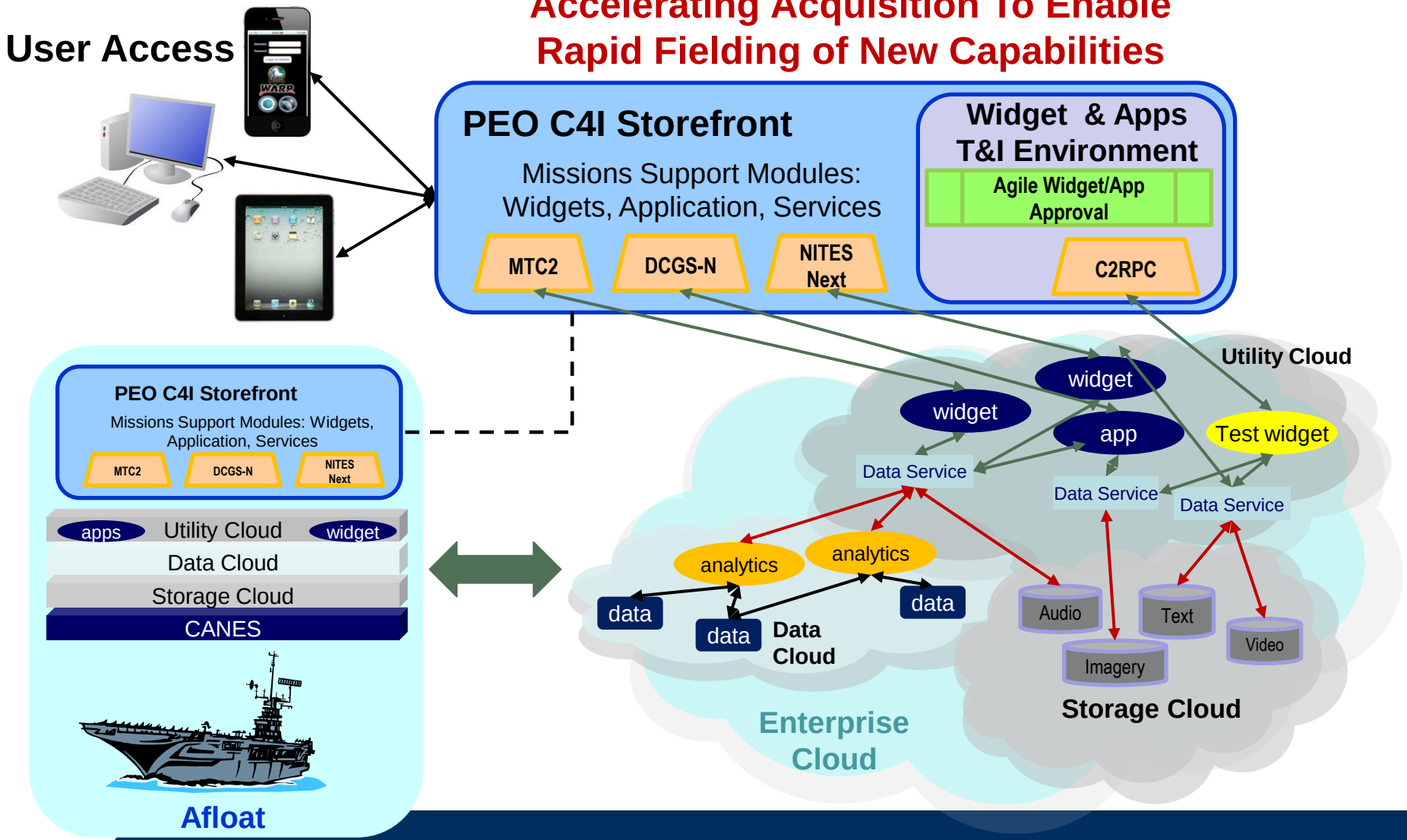
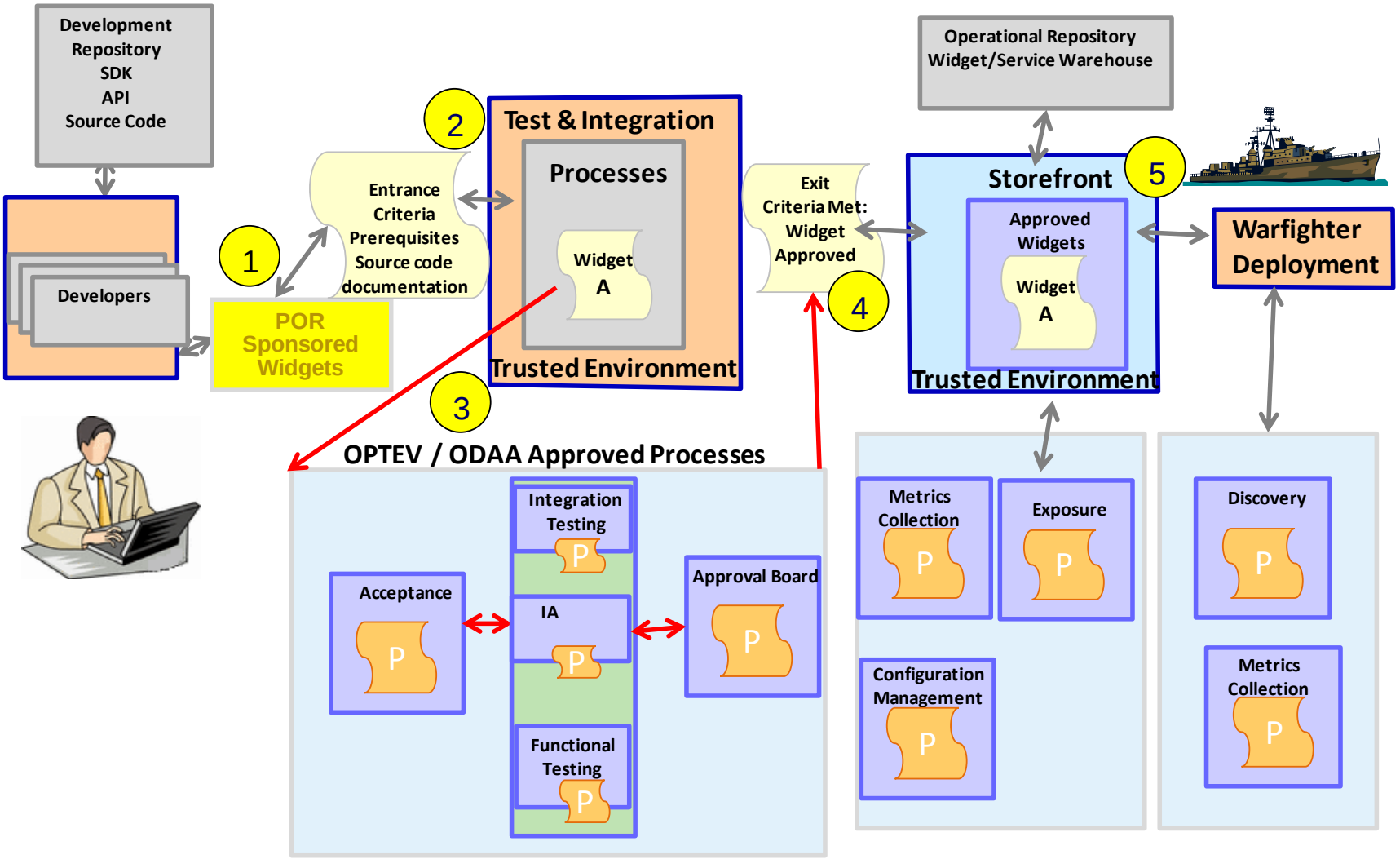
PEO C4I Storefront & Navy Cloud

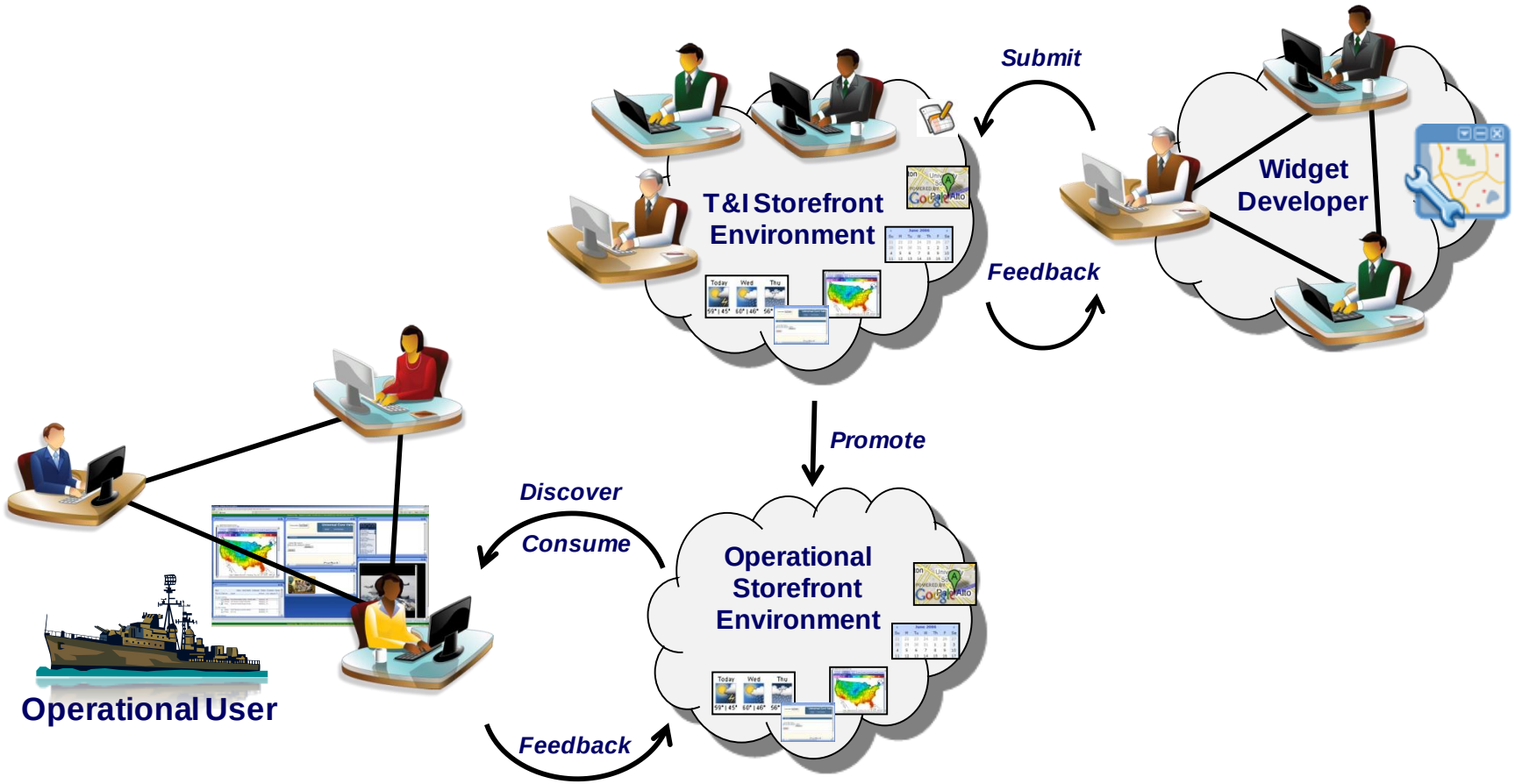
Accelerating Acquisition To Enable Rapid Fielding of New Capabilities



Widget Governance Process Overview



Storefront Operational Concept



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What is a Widget?

- Lightweight
- Single-purpose
- User configured
- Web-enabled application
- Provides summary information or a limited view into a larger application
- Also used alongside related widgets to provide an integrated view

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Better Buying Power and Culture Change

Better Buying Power 2.0

- Control Costs Throughout the Product Lifecycle
  - Supports the rapid IT widget governance process
- Eliminate Unproductive Processes and Bureaucracy
  - Supports the widget governance process with increased user input
- Promote Effective Competition
  - Encourages the creation of more widgets