

# Addressing the Barriers to Agile Development in DoD

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[MITRE Defense Agile Acquisition Guide](#)

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**MITRE**

# Purpose / Outline

**How DoD Acquisition professionals can apply Agile concepts within the unique and complex Defense Acquisition Environment**

- **DoD IT Acquisition Challenges**
- **Agile Overview**
- **Program Structure**
- **Requirements**
- **Contracting**



# DoD IT Acquisition Challenges

- **Change in IT technology and operations is outpacing DoD IT acquisition development**
- **IT programs are subject to extensive documentation, reviews, and oversight that inhibits speed and agility needed for IT**
- **Major DoD systems average 38% cost, 27 month schedule overrun with >\$1B/year spent on programs that are cancelled\***
- **Congress is demanding DoD to reform IT acquisition**
  - Early and continual user involvement
  - Multiple, rapidly executed capability releases
  - Early, successful prototypes; evolutionary approach
  - Modular open systems approach

**DoD: Delivering Yesterday's Technology Tomorrow**

\* Assessments of Selected Weapon Programs, GAO-14-340SP: Published: Mar 31, 2014

# Agile Acquisition

Small, dynamic, collaborative Gov't/Industry teams focused on:

## Small, Frequent Releases



Iteratively Developed

## Review Working Software



Vice Extensive Docs

## Responsive to Changes



Operations, Technology, Budgets

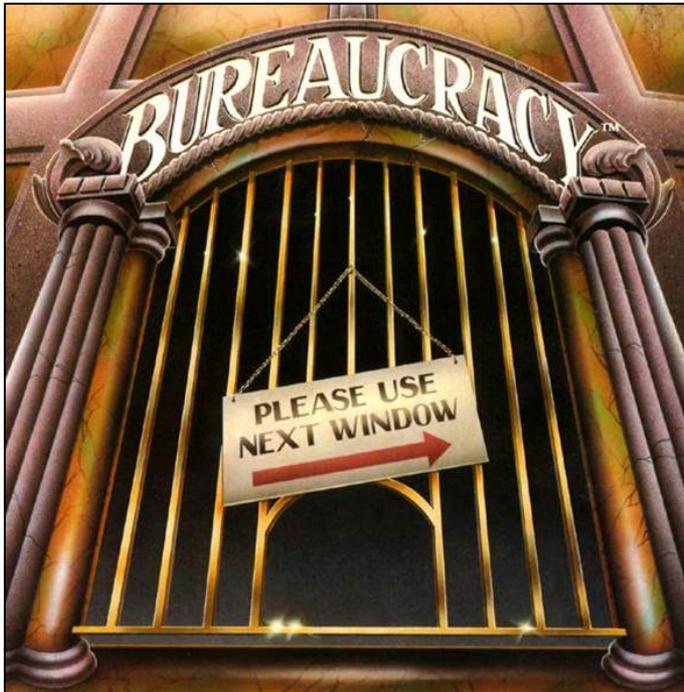
## Active User Involvement



To Ensure High Ops Value

# DoD Barriers to Agile Acquisition

- Heavily regulated environment of acquisition policies and laws
- Bureaucratic, laborious, and slow processes
- Command-and-control governance structure and authorities



## Agile Runs Counter to DoD's Acquisition Environment

- Iterative releases vs big bang waterfall
- Working software vs extensive docs
- Respond to changes vs upfront plans of budgets, requirements, designs

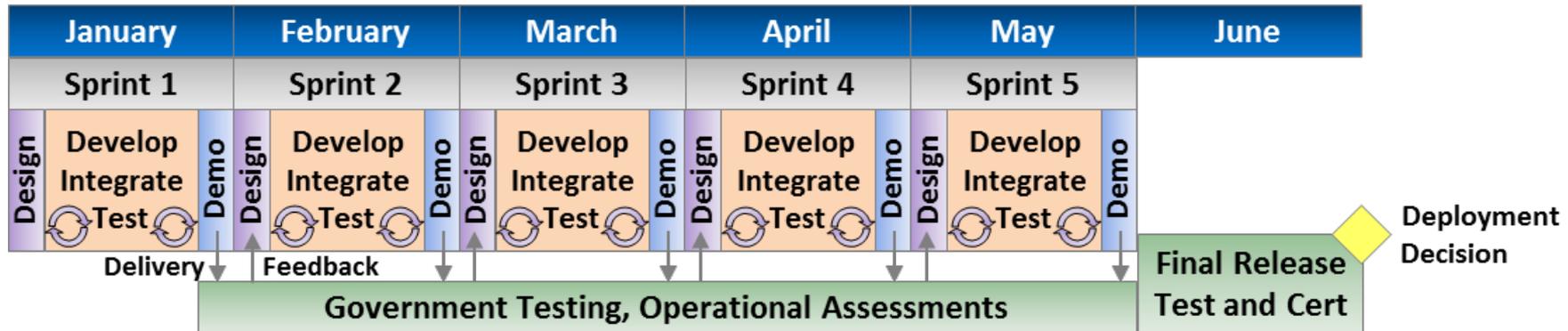
# Programs Should Consider Agile When...

- Requirements can be decomposed into small tasks
- Ops environment supports small, frequent capability deliveries
- Users can engage in development on CONOPS and feedback
- Programs can use existing infrastructure, focus on applications
- Industry has relevant domain expertise in Agile practices
- Decision authority supports Agile and tailored processes



# Structuring an Agile Program

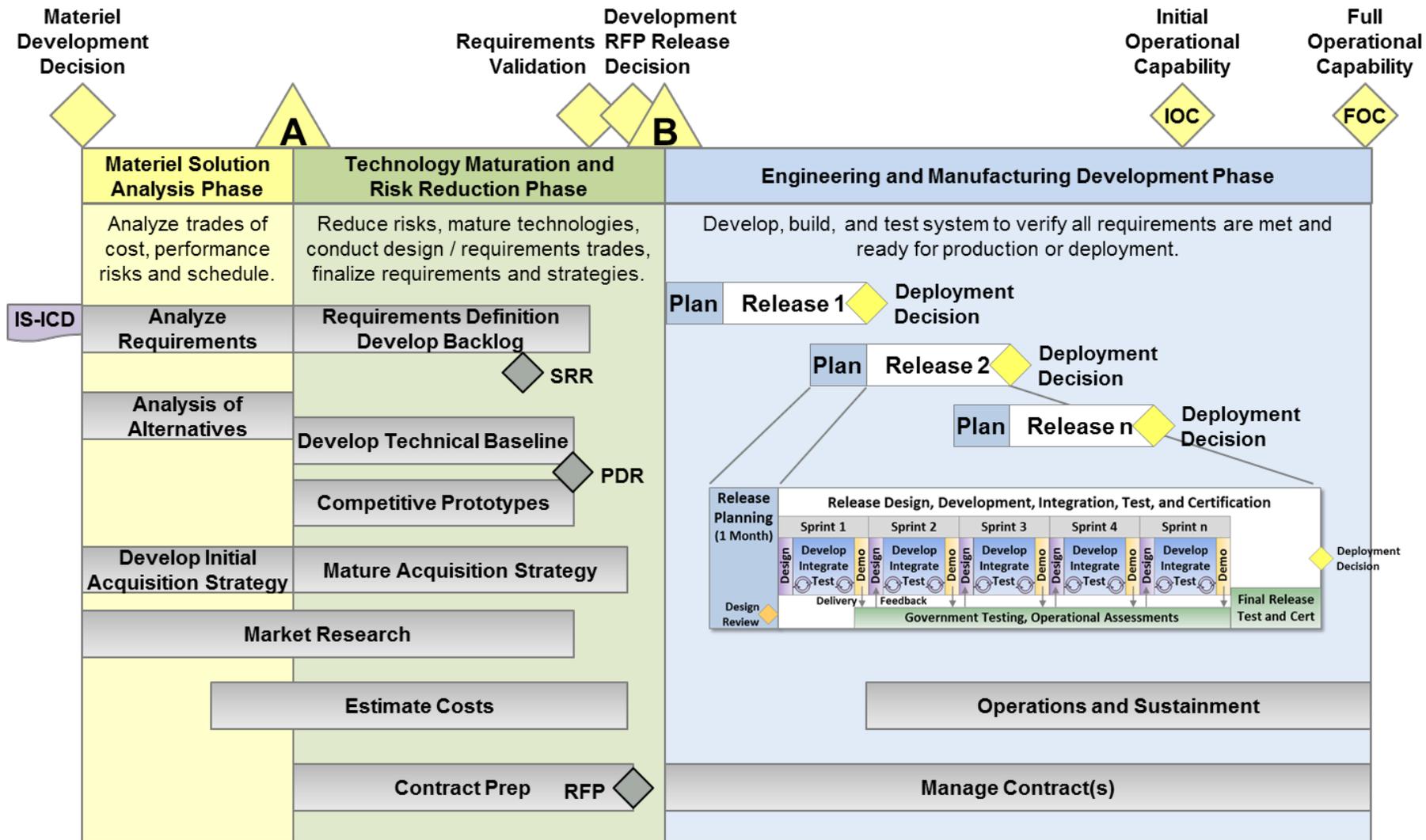
## Time Boxed Release



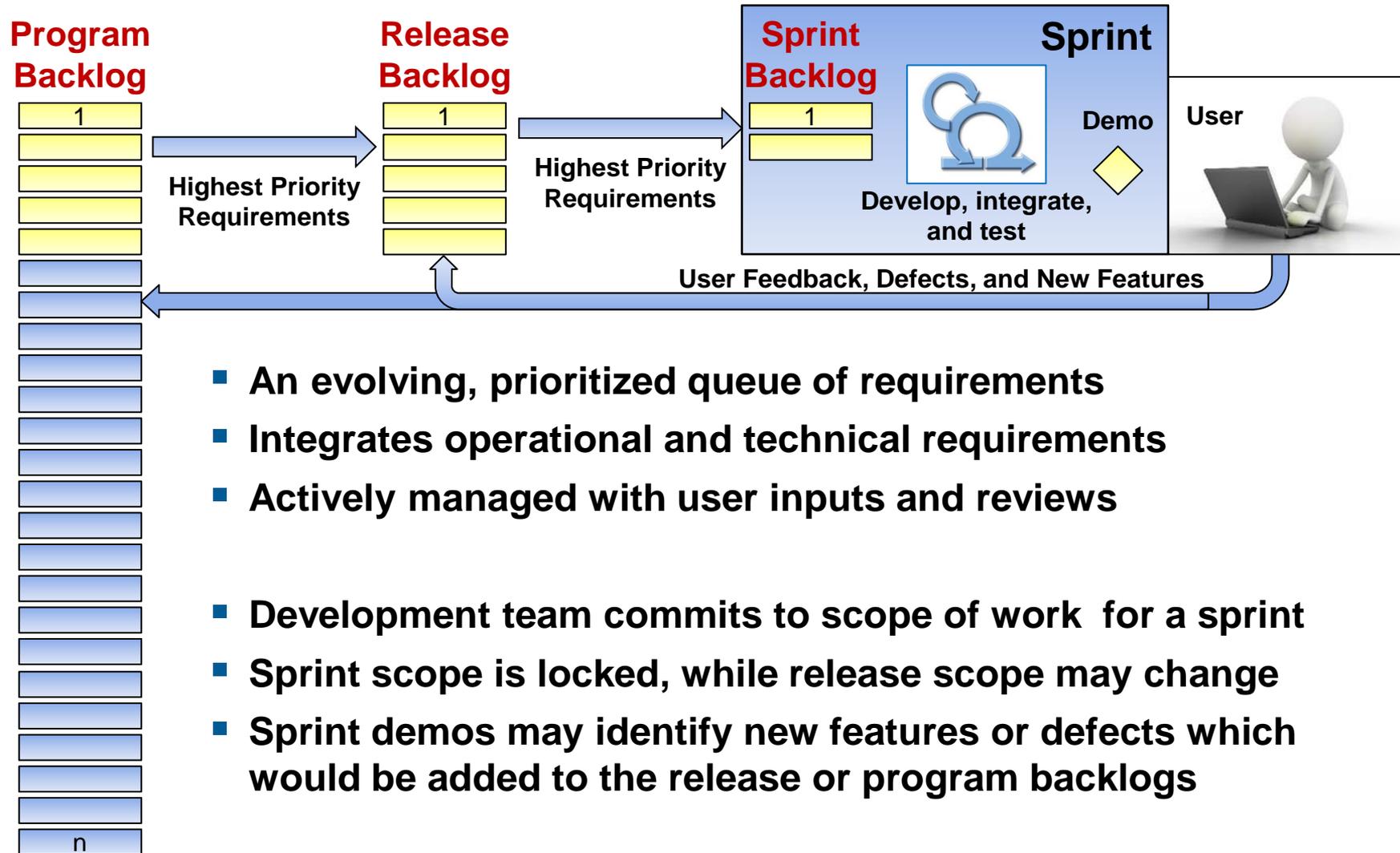
- **Notional: 6 Month Release with 4-Week Sprints**
  - Continual development, integration, and testing
  - Monthly demonstration of capabilities to users
- **Gov't testers, certifiers, and users involved early and often**
  - Minimizes work and surprises at the end of the release

**Release Length Based on Program, Ops, and Technical Risk**

# Potential Agile Structure

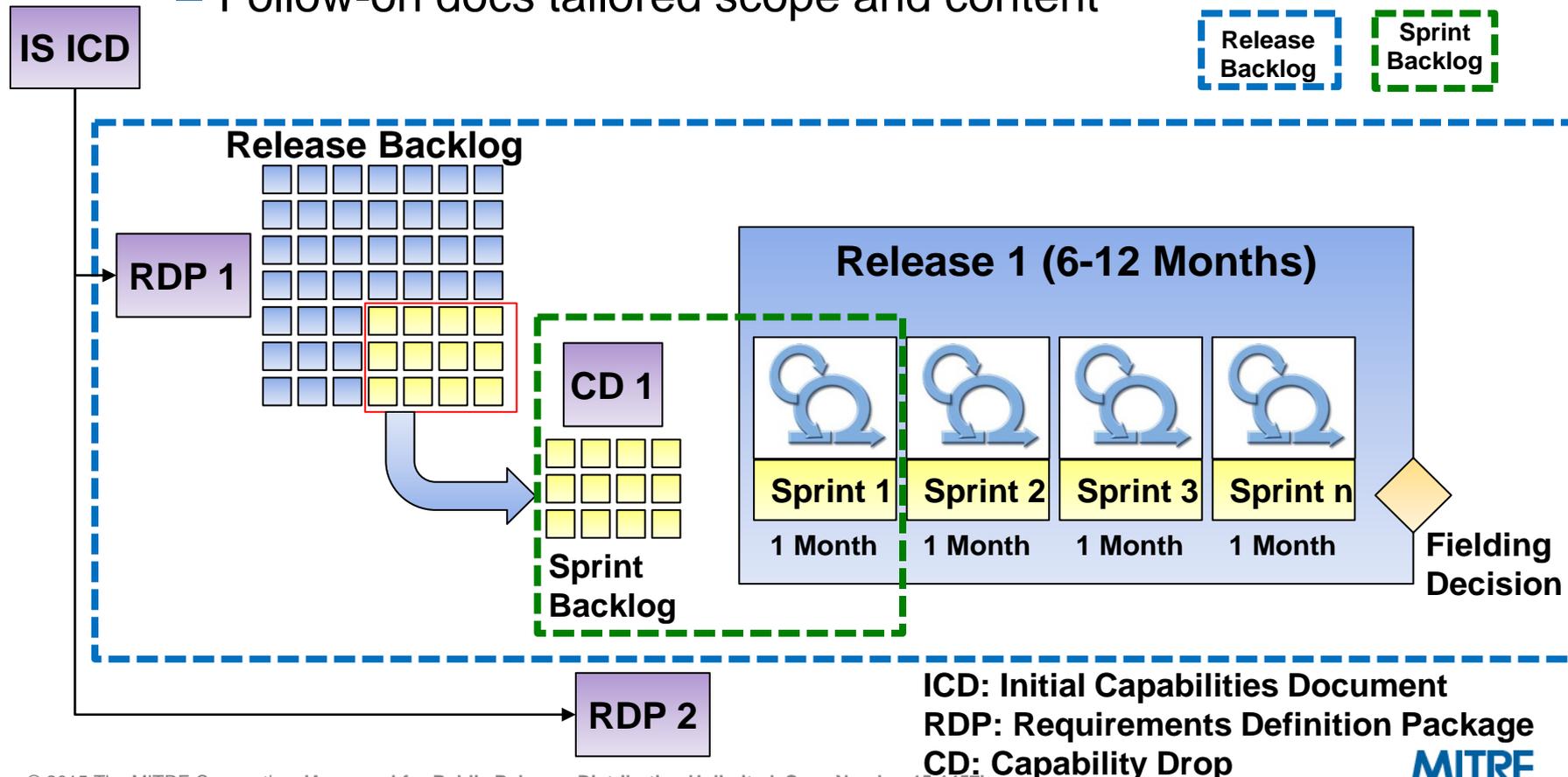


# Agile Requirements Backlog



# JCIDS IT Box Model

- Streamlined requirements process for software >\$15M
- JROC approves IS-ICD – delegates approvals of follow-on docs
  - Follow-on docs tailored scope and content



# Contract Vehicles

## Multiple Award Contract



**IDIQ contract awarded to multiple contractors who compete for work via task orders**

## Single IDIQ Contract



**IDIQ contract awarded to single contractor with task orders to develop releases**

## GSA BPA



**Existing GSA Schedule contract (eg. Sched 70) w/releases developed via call orders**

- **Consider a PEO, portfolio, or enterprise-level contract vehicle**
  - Streamlined contracting processes result in faster awards, deliveries
  - Standardized, effective, and efficient contract management

# Contracting for Agile – Service vs Product

| Services (FAR Part 37)   | Product-based  |
|--|--|
| <p><b>Pay for the time and expertise of an Agile development contractor</b></p>  | <p><b>Contract for a defined software delivery product</b></p>   |
| <ul style="list-style-type: none"> <li>• Fixed priced</li> <li>• Cost-reimbursement term</li> <li>• T&amp;M</li> </ul>   | <ul style="list-style-type: none"> <li>• Firm Fixed Price</li> <li>• Cost-reimbursement completion</li> </ul>  |
| <ul style="list-style-type: none"> <li>• Contractor is selected based on the strength of the development team</li> <li>• Enables a teaming environment between the Government and contractor</li> <li>• Appropriate when the Government wants to drive the development strategy</li> <li>• Responsive to requirements changes</li> <li>• Close collaboration required to ensure an integrated solution is delivered</li> </ul> | <ul style="list-style-type: none"> <li>• Contractor selected on technical solution</li> <li>• Requires upfront requirements definition for contractor cost estimates</li> <li>• Difficult to hold contractor accountable for delivery by directing Agile methods</li> <li>• Requirements changes requires contract negotiation, ECPs, and/or mods</li> <li>• Diminishes flexibility and negotiation power of the Government</li> </ul> |
| <p><b>Best option for Agile</b></p>  | <p><b>Very difficult for Agile</b></p>   |

# Services Contract Type

| Contract Type                                    | Pros   | Cons   |
|--|--|--|
| <b>FFP Services</b>                              | <ul style="list-style-type: none"> <li>• Generally preferred contract type in DoD</li> <li>• Easiest contract type to manage</li> </ul>                                    | <ul style="list-style-type: none"> <li>• Requires deliverables for payment (e.g., monthly report) unless progress payments are authorized</li> <li>• Contract amount cannot be changed without contract modification</li> <li>• Cannot easily change labor mix and # of hours</li> </ul>   |
| <b>Cost Reimbursement Term (Level of Effort)</b> | <ul style="list-style-type: none"> <li>• Flexibility to change labor mix and hours under contract ceiling</li> <li>• Does not require a deliverable for payment</li> </ul> | <ul style="list-style-type: none"> <li>• Contract ceiling may be difficult to establish, which can affect upfront fee determination</li> <li>• Requires closer Gov't monitoring</li> <li>• Requires a certified cost accounting system among other FAR requirements</li> <li>• Less incentivize for contractor to control</li> </ul> |
| <b>Time-and-Material (T&amp;M) (Labor Hour)</b>  | <ul style="list-style-type: none"> <li>• Flexibility to change labor mix and hours under contract ceiling</li> <li>• Does not require a deliverable for payment</li> </ul> | <ul style="list-style-type: none"> <li>• Unpopular contract type across the Gov't</li> <li>• Requires close Gov't monitoring</li> <li>• Contractor is not incentivized to control costs</li> </ul>   |

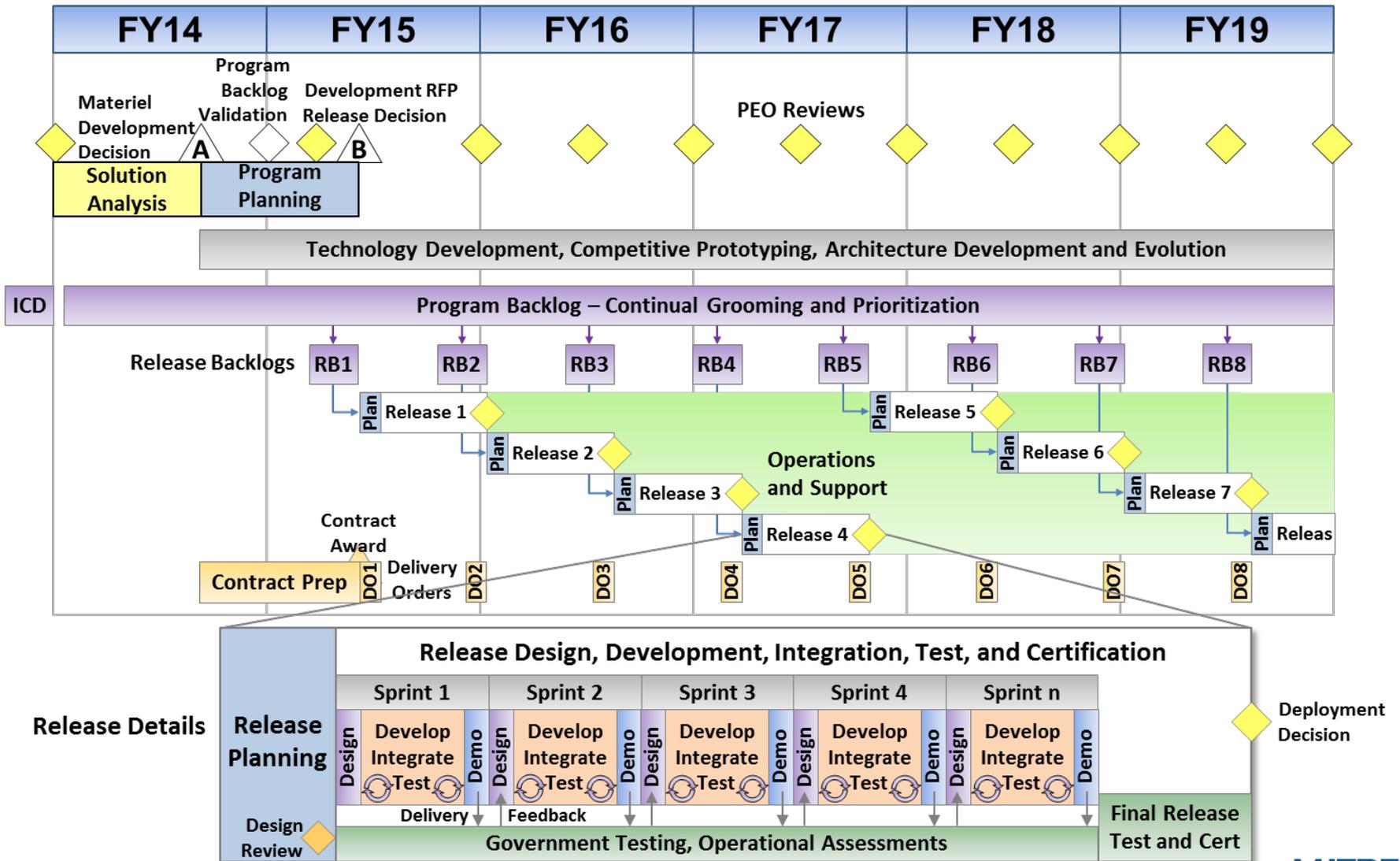
# Summary

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- **Using Agile development is an attractive option for IT programs**
  - Regular capability deliveries
  - Responsive to changes in operations, tech, and budgets
  - Active user involvement and empowered teams
- **Structure 6-12 month releases and tailor processes**
- **Dynamic and iterative requirements management**
- **Portfolio services contracting for industry partnership**
- **Tailoring DoD acquisitions to enable Agile adoption, successful IT**
- **For additional info, see [MITRE Defense Agile Acquisition Guide](#)**

# BACKUP SLIDES

# Potential Agile Structure



# Potential Contract Construct

- **Portfolio-level agile development contract**
  - Quick execution of orders for each release (e.g., 6 months)
  - Single award for quick orders and consistent contractor
  - T&M for max flexibility (transition to FFP or CR after initial period)
  - Scope/requirements can adjust over time
  
- **Services-based contract**
  - Contract for the services of the development team
  - Cost-boxed and time-boxed releases and sprints
  - Requirements in product backlog are flexible
  - Structure releases (e.g. 6 months) via separate task orders

# Agile Overview

- **Leading software methodology – begin in 2001**
  
- **Core Elements**
  - Small, frequent capability releases
  - Valuing working software over comprehensive documentation
  - Responding rapidly to changes in ops, technology, and budgets
  - Actively involving users throughout development
  
- **Small, empowered, collaborative teams**
  - Follow disciplined process
  - Dynamic, tailored, and evolving
  - Continual process improvement



# Five Prerequisites for Agile Acquisition

- 1. Small, frequent capability releases**
- 2. Embrace change**
- 3. Partnership: requirements, acquisition, contractor**
- 4. Small, empowered, high-performing teams**
- 5. Leverage a portfolio structure**

