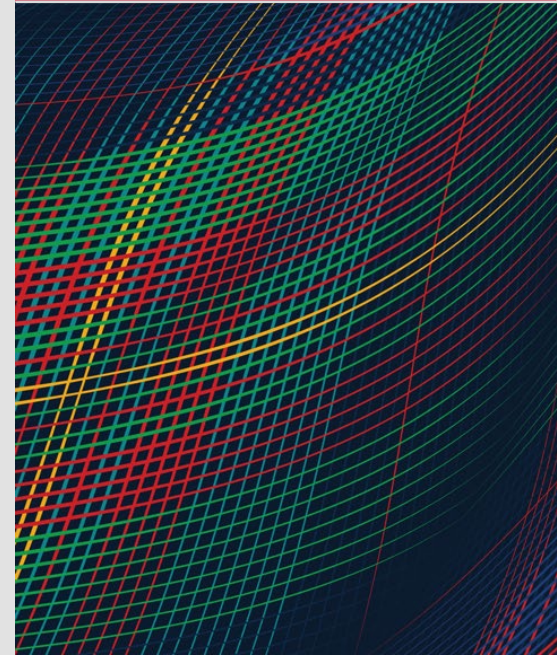


The Value of an Agile Approach to Independent Verification & Validation (IV&V) for Acquisition

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Document Markings

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What are we going to discuss?

- Independent verification & validation (IV&V)
- Challenges Agile presents
- Adopting values and principles
- Benefit for acquisitions
- Observations
- Conclusions

Independent Verification & Validation (IV&V)

- Software IV&V is a second set of eyes on the software
 - Technically, managerially, and financially independent
- Can be mandated or voluntarily chosen
- Risk mitigation approach
- Assurance is the product
- How is it done:
 - Document reviews
 - Code inspections and analysis
 - Independent testing

Agile Challenges with IV&V

- Traditionally built on waterfall development
 - Requirements, design, implementation, test
- “Timing” challenge for IV&V
 - With an iterative approach, the phases mentioned above are happening quicker and repeatedly
- Being “in phase” becomes evident if IV&V is to provide value and make an impact

Adopting Values and Principles

- Mindset shift
- Backlog of work
- Visualization of work
- Planning
- Stand-ups
- Retrospectives



Benefit for Acquisitions

- Independent Perspective
- Transparency
 - Insight into IV&V work
 - Better understanding of what developer is doing
- Early Detection of Issues
- Getting inside the developer's OODA loop (Observe, Orient, Decide, and Act)
- Risk Mitigation

Observations



- Agile IV&V approach has been implemented at NASA and DoD
- Beware the “us vs them” mentality
- Stick to the facts
- Rely on the evidence

Conclusions & Recommendations

- Approach focuses on continuous improvement
 - Transparency and communication
 - Will get program office more insight - earlier
 - Get inside developers OODA loop
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- Ultimately program offices acquiring the software product from a developer will have to make a final call on acceptance of that software



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