

# ***Ground System Architectures Workshop***

Leaping into New Space:  
How to Leverage and Integrate  
with Traditional Aerospace

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February 26–29, 2024  
Renaissance Los Angeles Airport Hotel  
Classified Session—February 29, 2024

*Working Group C Outbrief*

*Agile Anti-Patterns with  
Government Programs and  
Contracts*

*Brook Cavell And Timmie McArthur,  
The Aerospace Corporation*

*February 29, 2024*



## ***Session Goals***

An “anti-pattern” behavior is a process or technique that someone uses because they think the repeated technique or process is correct - but is not and creates a hindrance to accomplishing their goal.

The purpose of the workshop is to create a forum where workshop participants can share their experiences and raise their questions about anti-pattern behavior in Agile programs, and workshop subject matter experts (SMEs) can facilitate a discussion to identify best practices in dealing with anti-pattern behavior.

As a workshop, a high level of interaction, conversation, and debate were expected of the participants (and the participants did not disappoint!)



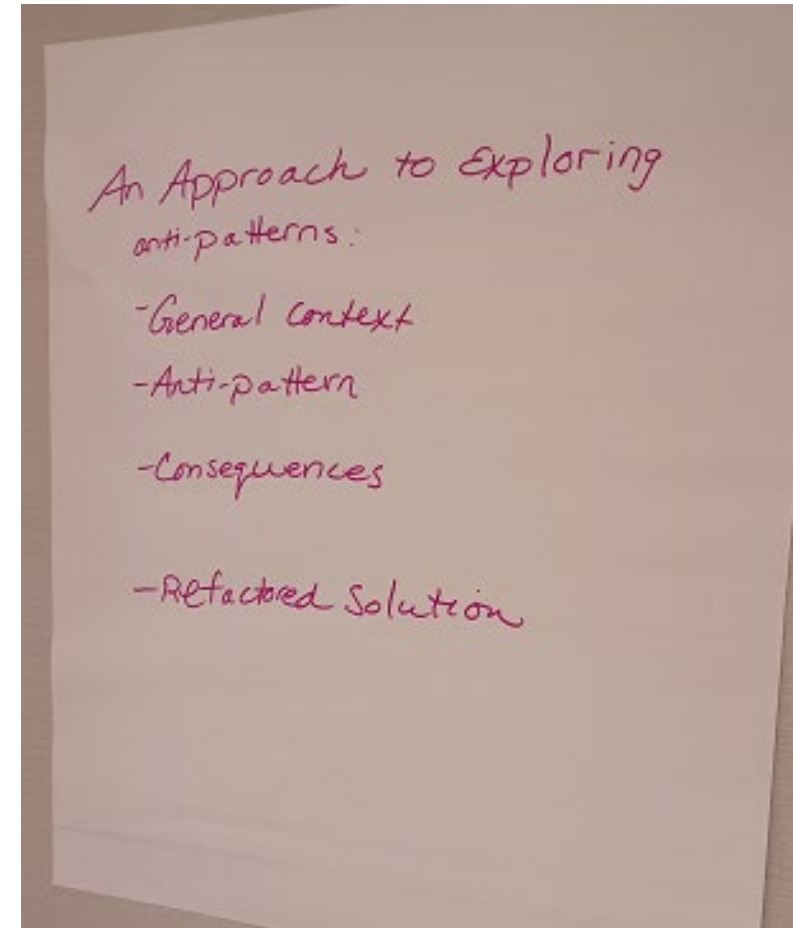
# Working Group Facilitators/Support



- *Brook Cavell* - Brook Cavell is a Senior Engineering Specialist in the Systems Engineering Division at The Aerospace Corporation. He is a PMI Agile Certified Practitioner (PMI-ACP®) and a Project Management Professional (PMP). Brook started his career as an agile developer doing extreme programming, then became a program manager for a government software portfolio. Currently, Brook is a costing engineer with an eye for programmatic troubleshooting.
- *Timmie McArthur* – Timmie McArthur is a Senior Engineering Specialist in the Systems Engineering Division within the Engineering Technology Division at the Aerospace Corporation. She has over 35 years' experience supporting the Federal Government across a spectrum of customers, including 8 years advising the government on agile and scaled agile topics. She has been a certified SAFe Agilist since 2016.
- **Backplane support:** *Curt Holmer* – Curt Holmer is a Senior Project Leader with the Infrastructure Services and Operation Division in the National Security Group of The Aerospace Corporation. He has 30 years of experience in system and software engineering supporting industry and federal agencies. Mr. Holmer is certified in several programming languages, holds Project Management Institute certifications for both Project Management Professional (PMP) and Agile Certified Practitioner (ACP), and is a certified ScaledAgile Framework Program Consultant (SPC).

# Key Points

- Level Setting, What does Agile Want? What does Government Want? What does Agile Government Want?
- Initial Concept Overview of an Anti-Pattern
- Simple approach to exploring Anti-Patterns
  - *General Context*
  - *Anti-pattern*
  - *Consequences*
  - *Refactored Solution*
- Split up into groups and work on an Anti-pattern
- Brief out to the Workshop



# Conclusions

- Outcome:
  - Good exercise to understand the traps of Agile Antipatterns
  - Opportunity to network, discuss and debate the problems
  - Group understanding and comments on the refactored solutions that could solve problems
  - Gathering wisdom and experience of all participants!

Working Group C

CONTEXT  
EVOLVING ARCHITECTURE  
FFP DEVELOPER CONTRACT

ANTI PATTERN  
\* BUDGET DRIVING DEVELOPMENT/  
DELIVERY

CONSEQUENCES  
PRODUCT WON'T WORK

BDUF

General Context:  
Multiple developers  
no coord mechanisms  
Antipattern - BDUF to be

SCHEDULE #1

CONTEXT: ACQUISITION PROCESS DOMINATES  
RFP / CONTRACT TIMING

ANTI PATTERN: CONTRACT INCENTIVE PERIODS NOT  
ALIGNED WITH DELIVERY CADENCE / MILESTONES

CONSEQUENCES: PERFORMANCE INCENTIVES NOT LINKED TO  
MEASURABLE PERFORMANCE / CAPABILITY

- AMBIGUOUS / ARBITRARY FEEDBACK CRITERIA
- DELAYED FEEDBACK TO DEVELOPER
- DELAYED URGENCY IN SUPPORTING  
CRITICAL DECISION POINTS

REFACTORED SOLUTION:

- ALIGN PERIOD OF PERFORMANCE + AF POPS  
TO ALIGN TO KEY PROGRAM MILESTONES /  
DELIVERY CADENCE
- DEFINE AF CRITERIA WITH CADENCE  
INCREMENTS IN MIND

Reg's + Contracts

General Context: FAR + gov budget

- \* Perception of impacts in being  
in S&S.
- \* Fear of change orders
- \* Budget + cost estimation

Anti-pattern: Defining How not what  
at a very low level

Consequences:

- Premature commitment
- Not optimal solution / Removing ability to solution
- Lack of Innovation  
manpower - low value work

Solution:

- Outcome based contracts
- Incremental prioritized outcomes
- Use far / non-far Core of contracting
- State Clearly Collaboration Strategy
- Incremental milestone exit criteria