How Much Configuration Management is Good Enough?

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Presented at CM Trends
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Agenda

- Quick Introductions
- Scientific Methods
- Closer look at CM targets
- How to Begin with SAE-EIA-649C
- Conclusions

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Introductions

- About CMstat
  - www.cmstat.com
  - https://cmstat.com/cmsights-news-posts
- About Lisa
  - VP Product Development – CMstat
  - Adjunct Instructor – CMPIC
  - Participating in SAE G-33 and IEEE Standards Reviews

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How much CM is Enough?

- Are you doing ‘good enough’ CM?
- The Federal Information System Controls Audit Manual (FISCAM)
  - US Government guide for conducting audits of Information Systems
  - Calls for every government agency to establish the ‘**minimally acceptable**’ system configuration requirements and ensure compliance with them.
- Can we do this for CM? Should we do this for CM?
- Are the 40 principles of SAE-EIA-649C our ‘bare minimum’ definition of CM?

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Let’s Begin the Investigation

- In developing this presentation, I reviewed the 40 principles in the standard and rewrote them in my own words. I then went back and highlighted words that were key concepts that the principles addressed.
- From that I’ve come up with the starting point of elements and concepts that are needed to cover what the standard is looking for.

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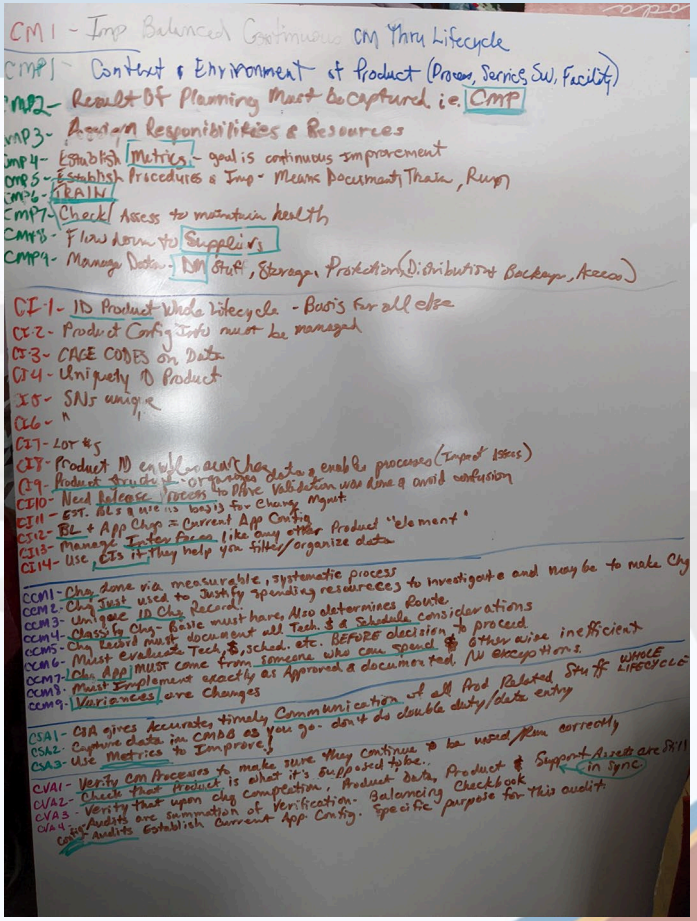
Showing my work



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Word Cloud Analysis

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Lisa's Analysis

These are the crucial functions within the 5 pillars for 'Good CM'

- **Planning** for **Environment** over whole **Lifecycle**
- **Metrics**/Measure Product and CM Processes
- **Training** of CM and CM-related processes
- **Verification** – do the Checks!
- **Data** Management (See SAE-EIA-859) is **Configuration Information** Management
- **Supplier** Management
- **Interface** Management
- **Unique Identification** – Product and Configuration Information

It was then that I realized……

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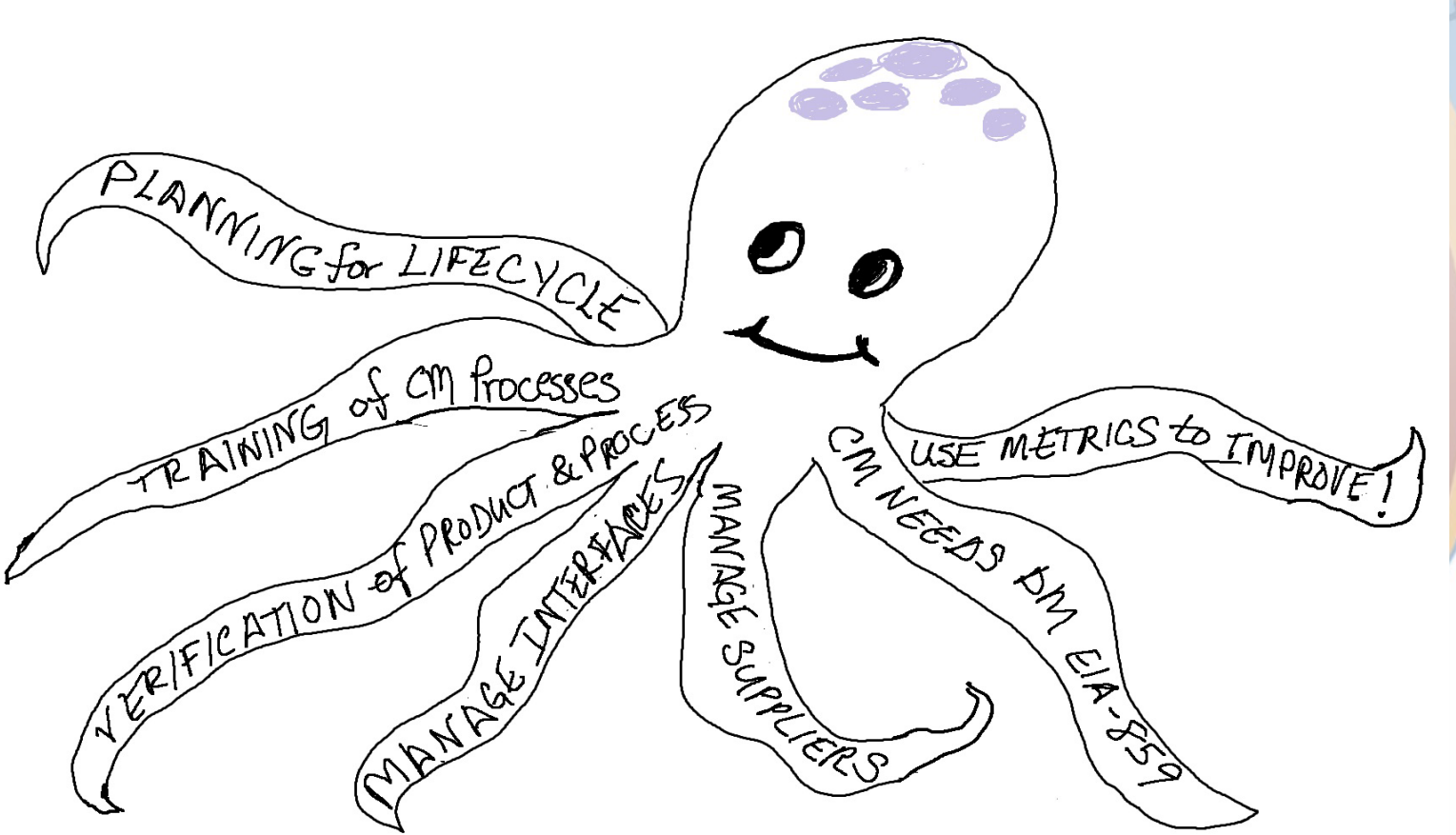
CM is an Octopus!



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As I should have expected…

- These key words came from the CM 1 and the Planning and Management principles
- Remaining principles support these key ideas

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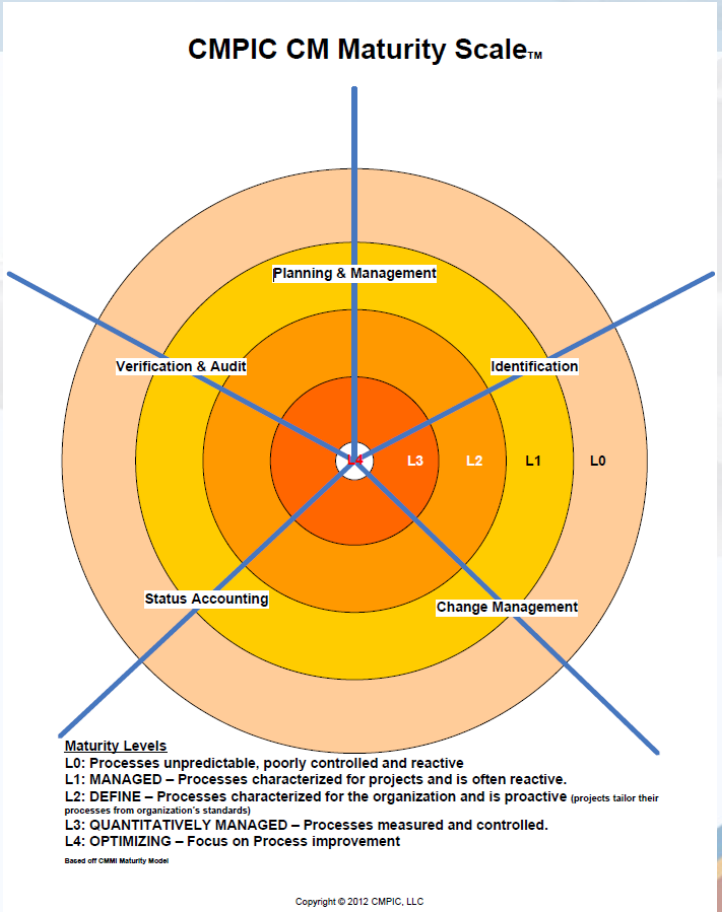

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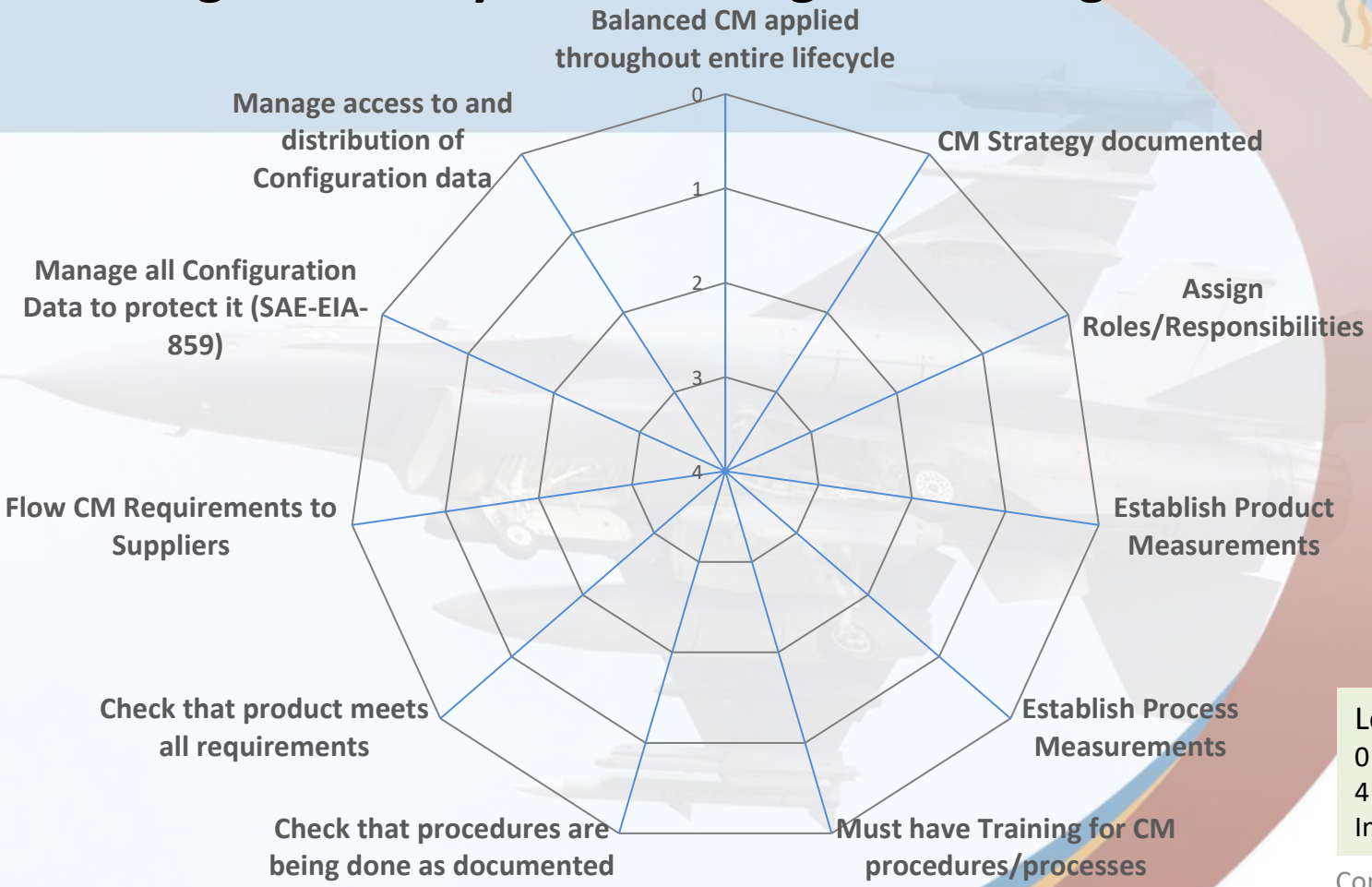
Aiming for Bullseyes – Planning and Management



Legend:
0 – does not exist
4 – Continuous Improvement ongoing

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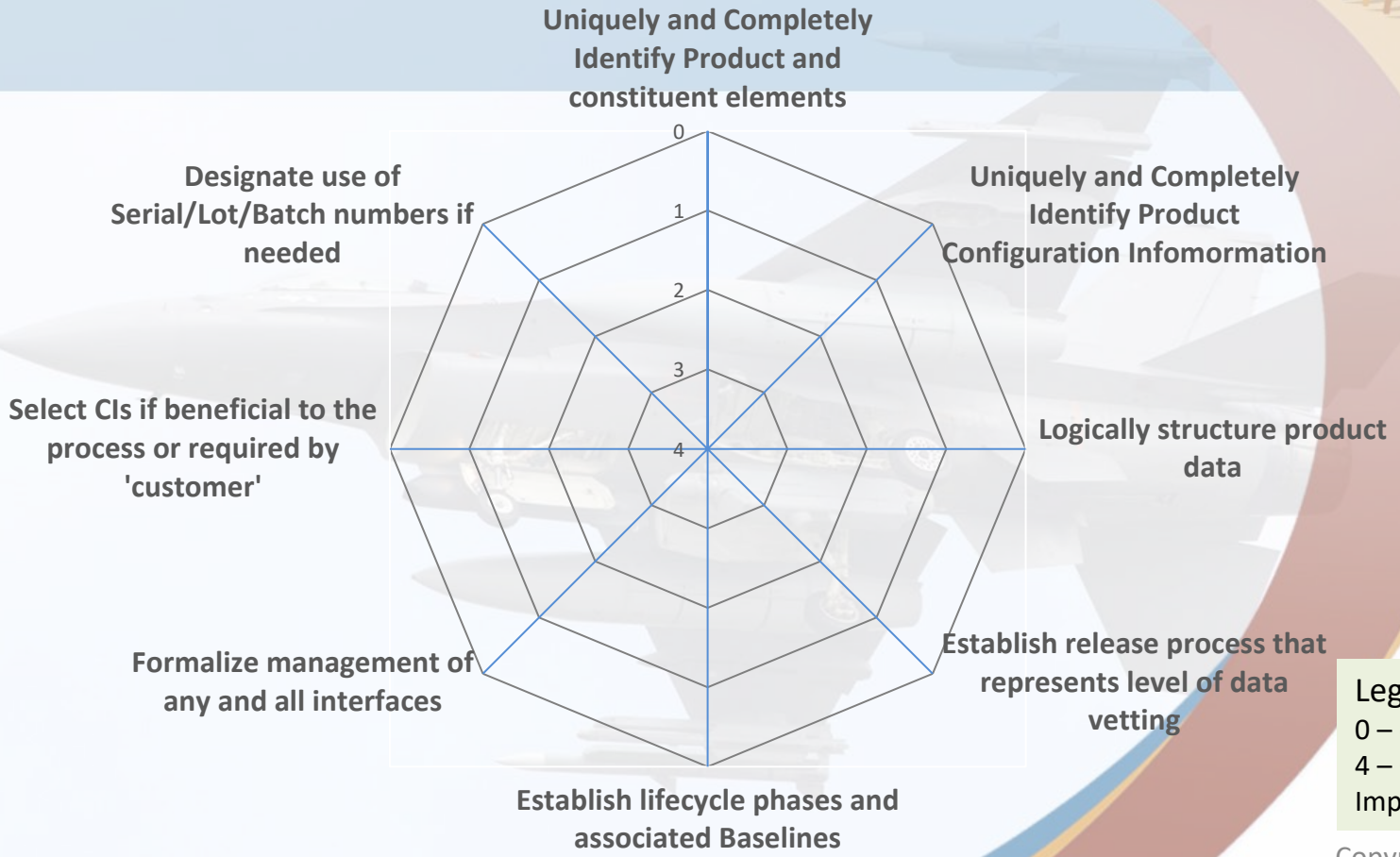
Aiming for Bullseyes -Configuration Identification



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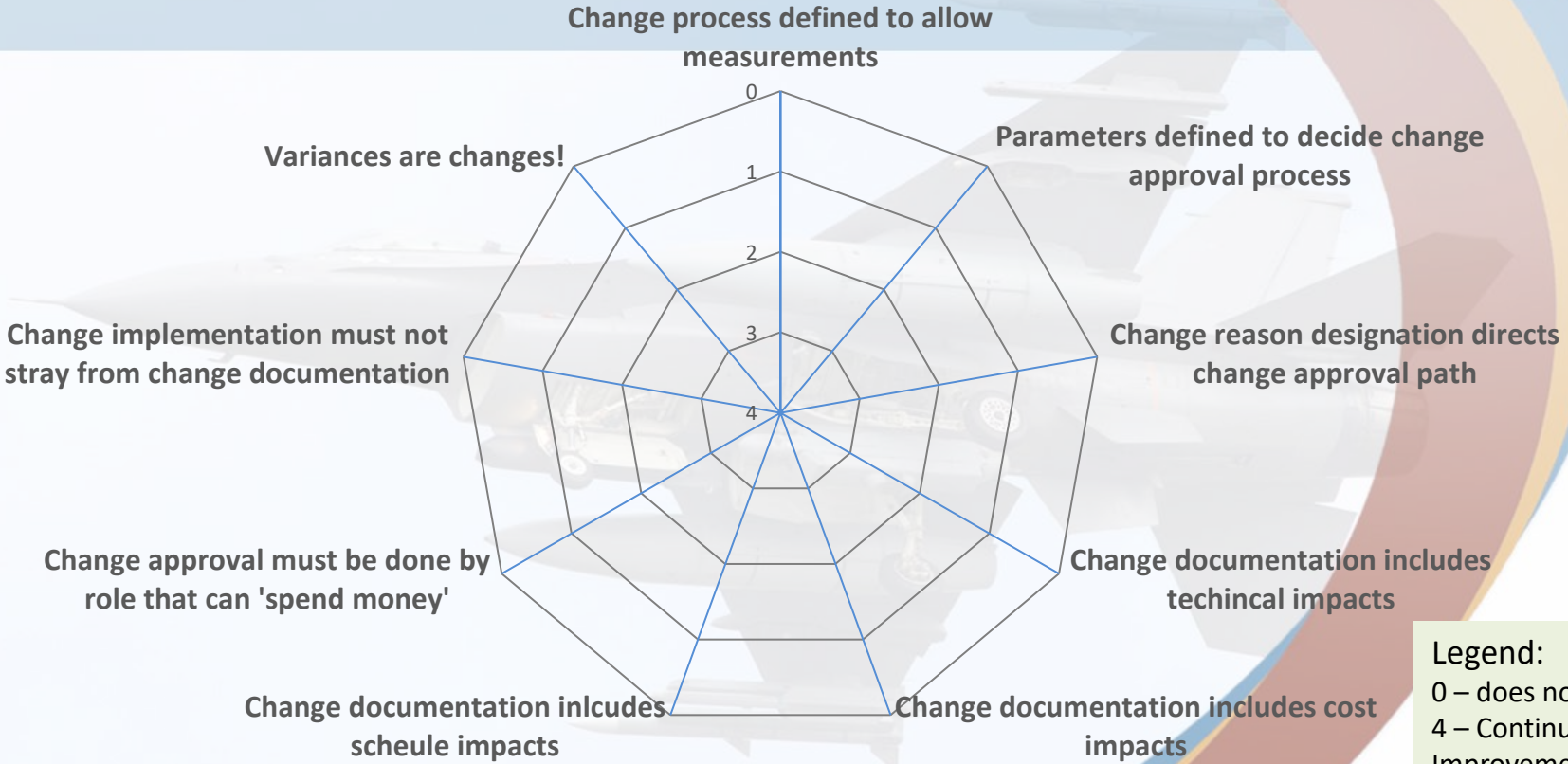
Aiming for Bullseyes – Configuration Change Management



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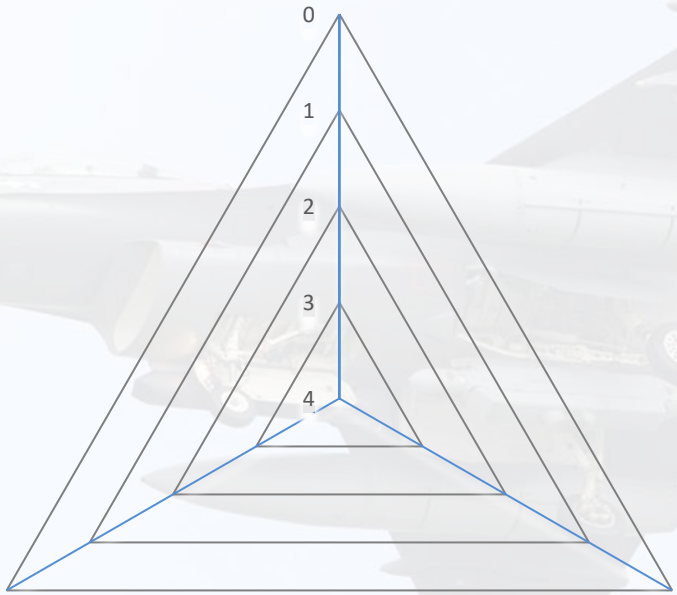
Aiming for Bullseyes – Status Accounting



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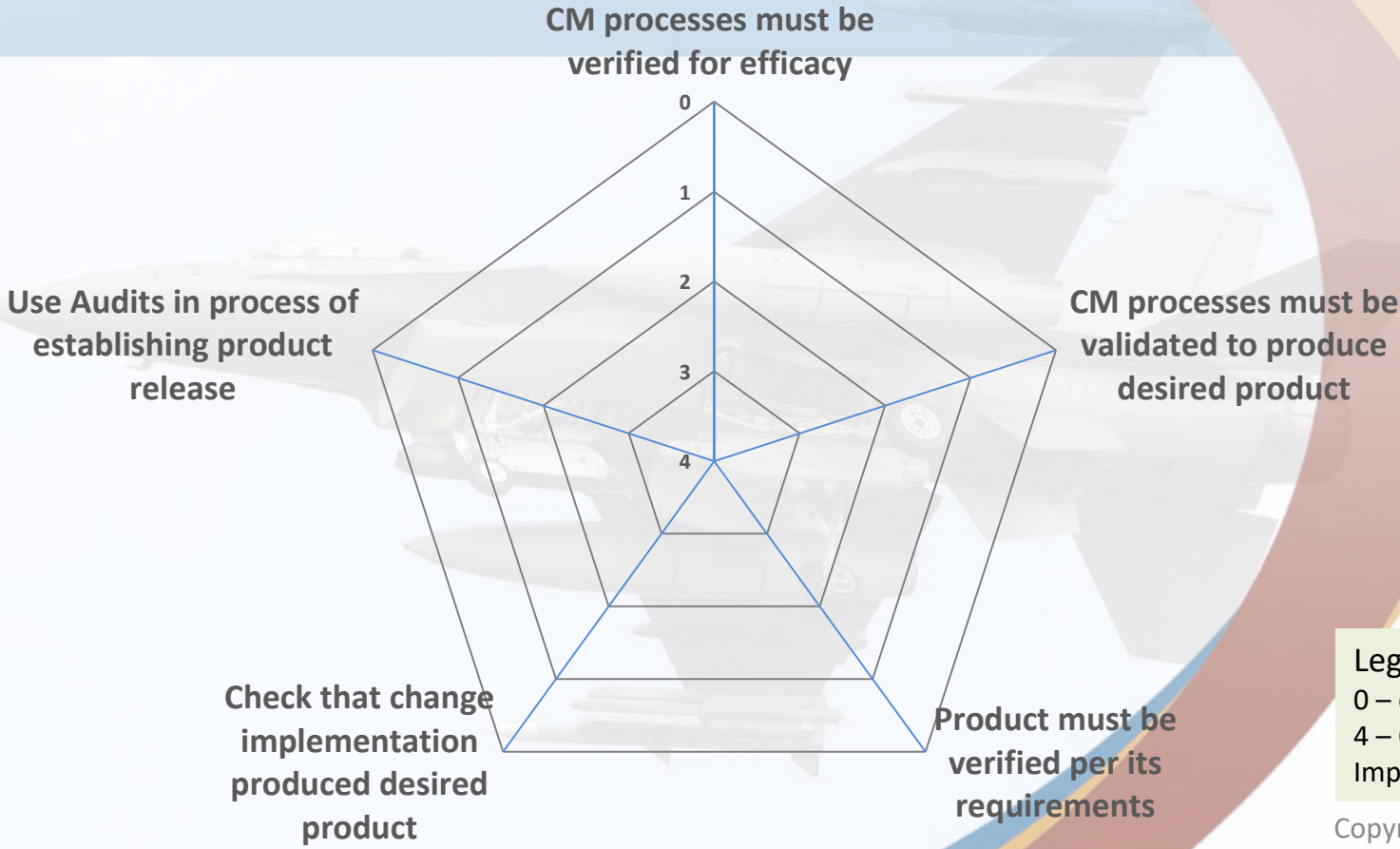
Aiming for Bullseyes – Verification & Audit



Legend:
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So how do we get started?

1. Define the Lifecycle
2. Determine Context and Environment
3. Identify all applicable regulations
4. Then use Planning principles to begin laying out the roadmap
5. Use remaining principles for each of the pillars to flesh out the processes

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“With a little help from my friends”

-John Lennon and Paul McCartney, 1967

- Keep in mind that CM does not have to own all of these processes – some may be taken care of by Quality, IT, DM, etc.
- Each of these elements of CM are like onions… they have layers. There is always improvement to be made.

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Conclusions

- SAE-EIA-649C Planning principles identify high-level Best Practices for CM
- Any missing links in CM functions break the continuity needed for establishing Truth, Trust, and Traceability. Making digital thread, MBSE impossible AND puts the product at risk. Which is why….
- There is no ‘Minimally Acceptable’ level for CM. The principles in SAE-EIA-649C give us all of the pieces that fit together like LEGOs to form a resilient, comprehensive strategy for the best possible resulting ‘product’
- ‘Minimally Acceptable’ would imply a static state but ‘Good CM’ needs the opposite – an ever-evolving improving set of processes.
- So begin with defining the lifecycle and then use the principles as a guide
- CM is an Octopus that needs all of its tentacles!

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Thank You!

For more on this and other CM topics, watch for our CMSights Blog:

https://cmstat.com/blog/

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