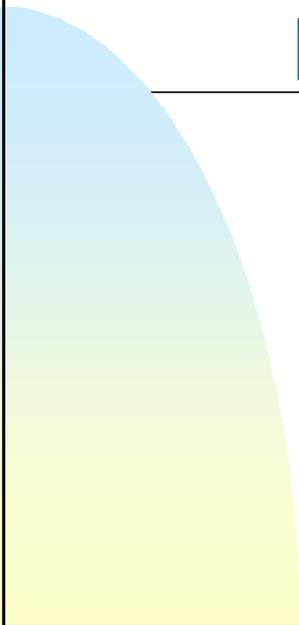


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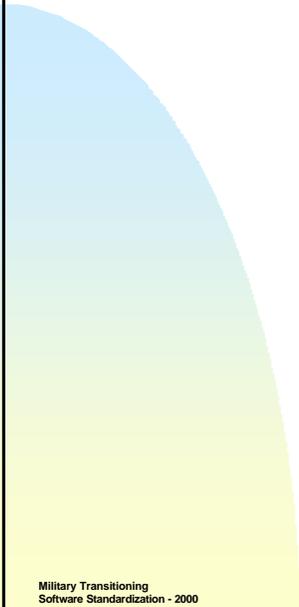
Military Transition



Military Transition

Understanding the environment
& differences

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Topics of Discussion

- Roles
- Context similarities
- Context differences
- Bridging the gap

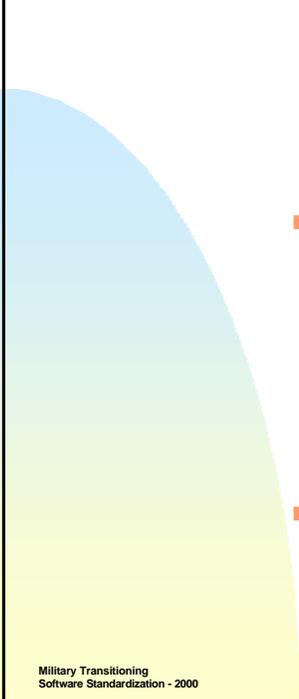
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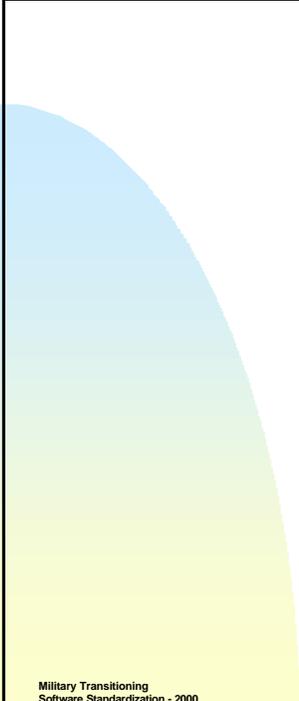
Roles -1

- People: DERs provide program direction & expertise on certification
 - ◆ often “the buck stops here” commercially
 - ◆ military programs do not have any hard rules or authority they must meet
- Cost: An issue in both environments, but...
 - ◆ Cannot be used to mitigate a safety requirement commercially

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Roles -2

- Cost, continued
 - ◆ Military development is constantly monitored to cost
 - ✦ there **is** the concept of a cost-value of a life
- Processes: Changing emphasis
 - ◆ Commercially processes are the “best known” practice
 - ◆ Militarily- they weren’t, **but they are now**

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Similarities -1

- Both make use of system safety assessments that must be in agreement with the associated government authority
- Both require documentation & appropriate software development processes
- Both require a “certification” process

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Similarities -2

- Both require government agreement to the specific details of the software development plan
- Both have the concept of regression analysis of older systems to determine what additional work needs to be done for a current program

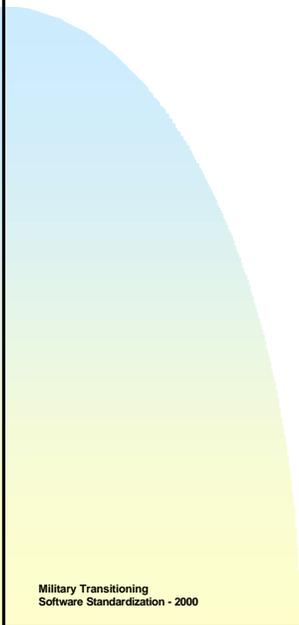
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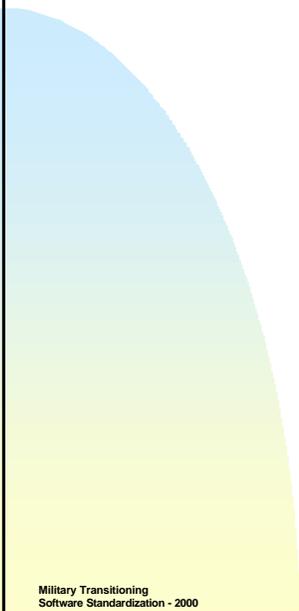
Differences -1

- Safety critical hazards can be different due to lower hazard probability requirements
- Archived evidence may not exist on a military system
 - ◆ may not have been required originally
 - ◆ processes may not have been done rigorously

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Differences -2

- Expect a lack of structural testing coverage
 - ◆ To date, the military programs do not want the cost of the added safety assurance
 - ◆ BUT...consider analyzing the software implementation hazard thread analysis

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What This Means -1

- DO-178B certification of military legacy systems can be difficult & expensive
 - ◆ Providing insight to the military company of what's similar & what's different helps them change their focus to the DO-178B ways.
 - ◆ Clearly communicating the role of cost for the FAA versus the role of cost for military programs & repeating it can offset program failure

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What This Means -2

- DO-178B certification, continued
 - ◆ Bringing in the local certification authority may assist in providing appropriate DO-178B emphasis
 - ◆ Remember, military "certification" does not accomplish FAA DO-178B certification
 - ✦ (repeat as often as necessary)

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What This Means -3

- Understanding the original context of development can guide the 8110.M&M analysis more effectively
- Understanding the military system safety assessment process & analyzing its data may provide some alternate assurance relief