

Business and Technical Considerations for Product Line Development: An Update

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Ground System Product Lines: Issues and Solutions

Results / Implications of Business Case Initiative

- “Independent program management” culture poses barriers and impediments to strategic software reuse (“stovepipes”)
- Cost savings associated with software reuse could be limited, due to the limited number of “new development starts”
- Costs of maintaining an asset base are a major consideration
- Technology compatibility is a major factor to consider when deciding whether to reuse existing software
 - Structured versus OO development; changing hardware platforms, etc.
- Ad-hoc reuse appears more prevalent than systematic reuse
 - “Case by case” basis
- Configuration control often lacking in software reuse
 - Lack of libraries or inventories for software assets and components

Results / Implications of Business Case Initiative (con't)

- Contractor disincentives against strategic software reuse / maintaining software reuse libraries
 - Quote that “Government pays us [contractor] to reinvent the wheel”
 - Quote that “if we [contractor] said we had the required software, we would make less money - thus no reuse”
- There appear to be good candidates for software reuse among ground systems
- However, for some projects no significant reuse appears possible
 - Infrastructure required to maximize reuse would outweigh benefits
- Reuse is dependent on doing similar tasks
 - If the applications vary too much, wrapper code could become more complex than writing the code from scratch