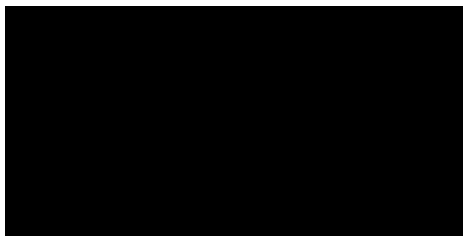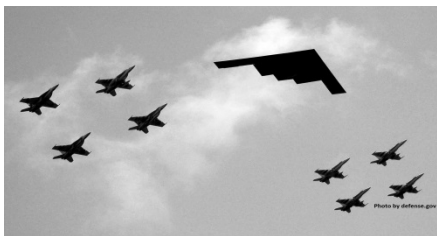# Safety Certifiable COTS

Increasing Demand DO-254 Safety Critical Solutions

WHY ?

- Ongoing digitization of cockpits

- Commercial technology advancements enable increased sophistication

- Increasing number of military aircraft flying over civil population centers

- Military will need to address DO-254 as hardware complexity increases

- Increasing number of drones are flying over civil population centers and other applications for drones will drive the need to higher cert Design Assurance Level (DAL) levels

- Use of Synthetic Vision Systems (SVS) for landing increases the DAL of mission computers

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Key Market Trends

Cost

- Defense budgets continue to be under pressure, cost is critical
  - No more cost plus programs or end customer funding
  - Primes are required to invest
- Commercial aircraft manufacturers also seeing the increased budget pressure

Schedule – Primes need to demonstrate capability quicker

- TTM is critical.

Risk – As complexity increases the risk of certification increases
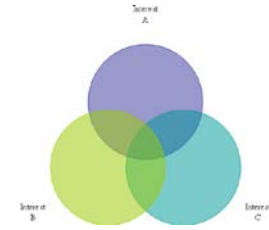
- Impacts cost

- Impacts schedule

Certification projects cost many millions of dollars from start to finish, and then the have the added cost supporting for the traditional long program lifecycles

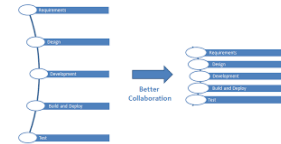# Increasing Demand for COTS DO-254 Safety Critical Solutions

Common avionics

- Growing use of common avionics subsystems in military and commercial aircraft
- Hardware developed can be used across many platforms, reduce development cost

Schedule

- Off the shelf solutions means development can start sooner
- COTS vendors solutions can be used by many primes, driving a quicker time to market
- Final systems can be developed and deployed quicker

Cost/Risk

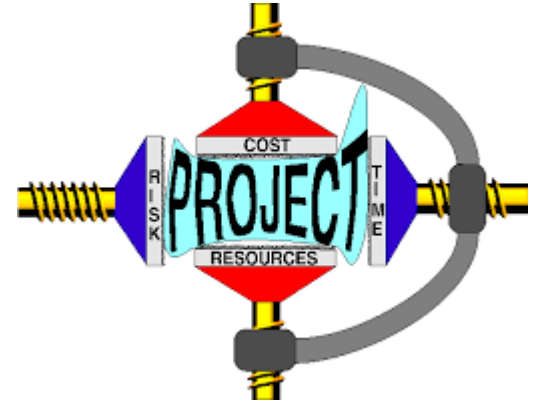- Development cost and risk associated is shared among many programs

Let's Say……

You're an avionics integrator

- With experience with FAA/EASA safety certified programs and know the cost involved
- Have typically designed custom hardware in house (big $$$ and long development cycles)

You're under pressure from the customer or prime to :

- Provide new, higher performance hardware and address obsolescence
- Deliver affordable hardware – request for investment
- Deliver quickly – show capability
- Lower risk

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As COTS has always done …..

COTS suppliers have seen this trend and can provide high performance hardware designed for safety certification complete with artifacts

- *Complete solutions* from single board computers, graphics modules to avionics I/O, the software that drives these and system packaging

- Hardware solutions with *COTS pricing model*

  - *Price is not driven by low volume and custom solutions*

- Artifacts for a *fraction of the cost* of custom

  - *Cost of generating the artifacts is shared over many programs*
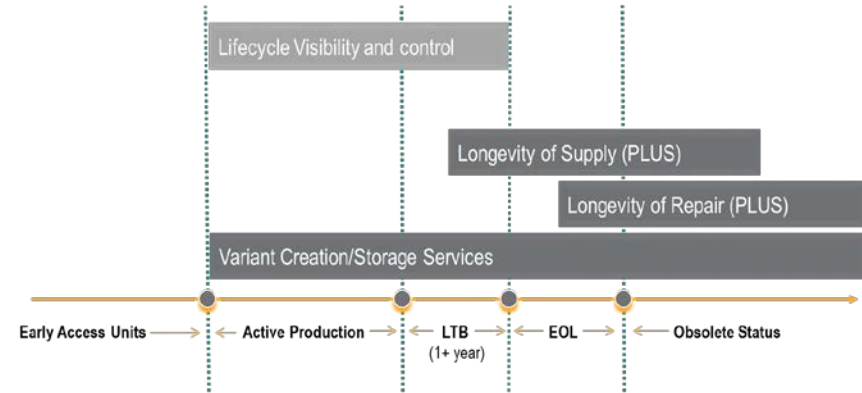
- *Reduced NRE*

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The Supply Paradigm…..

Safety Cert programs need a long runway - time to get into the field and then support for many, many years, but technology moves forward quickly increasing the risk of reduced supply.

Many COTS suppliers have the experience of delivering and supporting programs with longevity of support and repair services, managing the lifecycle for the primes providing reduced lifecycle costs, and then for technology insertions.

Full Program Life Service and Support

Lifecycle Visibility and control

Longevity of Supply (PLUS)

Longevity of Repair (PLUS)

Variant Creation/Storage Services

Early Access Units → | ← Active Production → | ← LTB (1+ year) → | ← EOL → | ← Obsolete Status

Certified COTS…..

- Using certifiable COTS reduced cost, improved quality, reliability and maintainability that equates to lower risk
- Integrators can focus on the value added applications
- Development can start sooner – demonstrating sooner

Thank You

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