High-Assurance Security/Safety on HPEC Systems: an Oxymoron?

HPEC Poster
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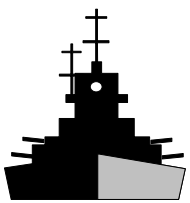
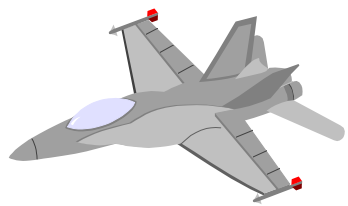


This presentation represents joint research between the
Air Force, Army, Navy, NSA, Boeing, Lockheed Martin, Objective Interface, Green Hills, LynuxWorks, Wind River, GD, Rockwell Collins, MITRE, U of Idaho



The Whole Point of MILS

Really simple:

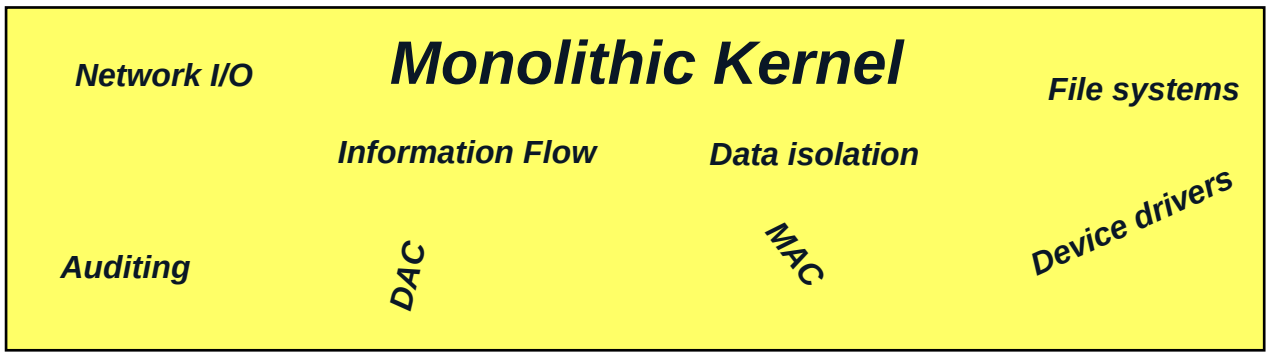
- Dramatically **increase the scrutiny** of *security critical code*
- Dramatically **reduce the amount** of *security critical code*

Orange Book vs. MILS Architecture

User Mode

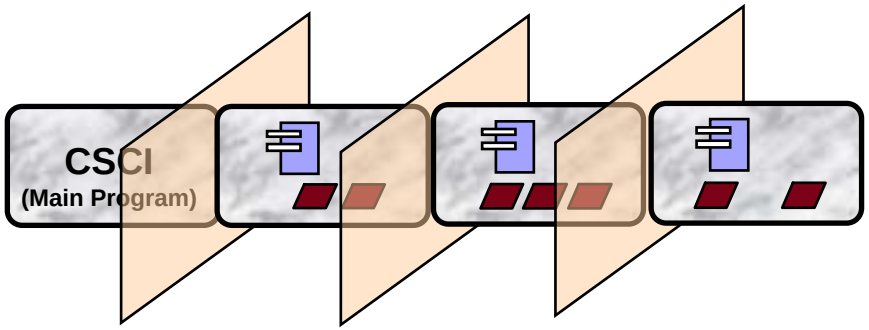
Damage Limitation Periods Processing

Kernel



Privilege Mode

Orange Book vs. MILS Architecture



User Mode

Middleware

Network I/O

File systems

Auditing

DAC

MAC

Device drivers

Mathematical Verification

Partitioning Kernel

Information Flow

Data isolation

Periods Processing

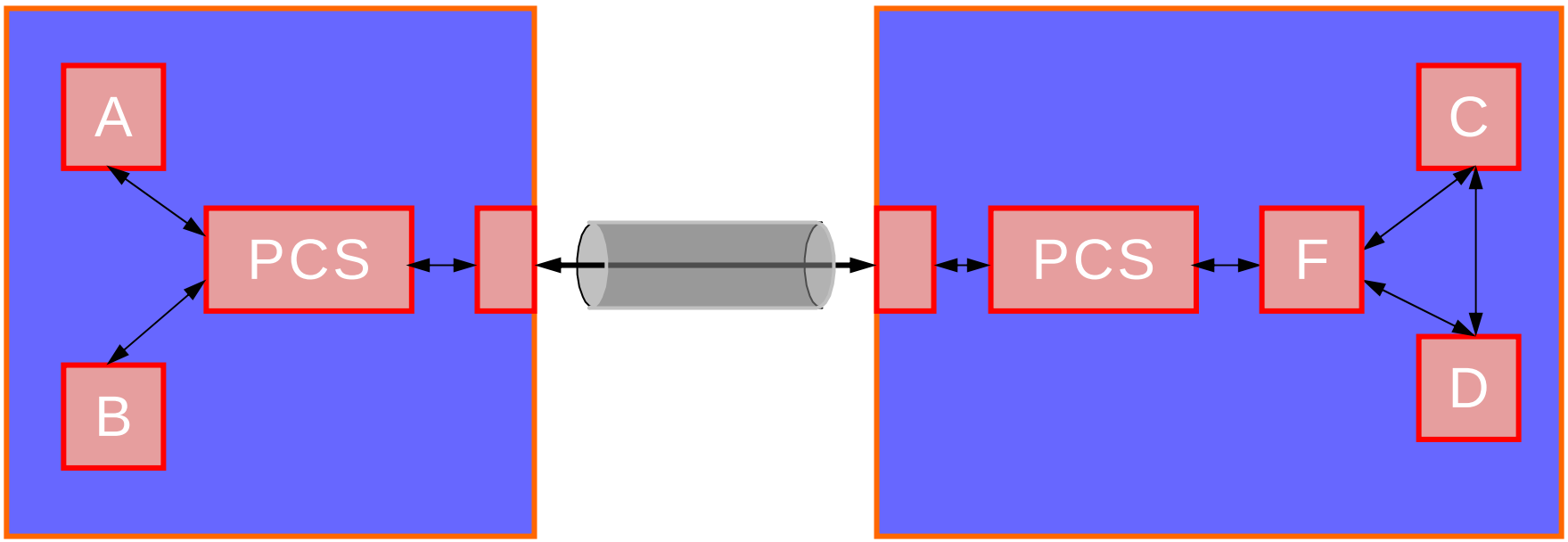
Damage Limitation

Privilege Mode

Kernel

Partitioning Communication System

Zero-copy Secure Communications Channel



Partitioning the Channel