♦ Complex system design is divided (compartmentalized) into achievable

♦ Technical integration is crucial to the integrated design effort
  • Have requirements, ICDs, legal agreements
  • Communication is key
    – Continuously checking requirements and their flow, verification
    – Continuously checking assumptions
    – Continuously checking implication of changes

♦ Interfaces and data flow among the pieces (subsystems) is identified

♦ Design conflicts will happen
  • Integrated approach to solution will be needed
Technical Integration (cont’d.)

♦ All changes occur in a system and affect the system as a whole

♦ “-ilities” (manufacturability, operability, etc.) must be considered as part of the design solution

♦ Risks
  • Risks of the integrated system
  • Risks of the divided pieces (subsystems)

♦ Understand sensitivities, uncertainties, and margins across the vehicle, elements and subsystems to balance risk
♦ **Set of requirements for the integrated vehicle**
  - Derived requirements for element
    - Derived requirements for subsystems within element

♦ **Environments at the integrated vehicle level**
  - Set of particular environments for element
    - Set of environments for subsystems within the element

♦ **Verification for the integrated vehicle**
  - Derived verification for the element
    - Derived verification for subsystems within the element

♦ **Partners use their internal specifications/processes (such as materials and processes specifications)**
Iterative process based on maturity

Keep-out zones

Actual mechanical and electrical interfaces

Provisioning of attachment hardware

Who does what analysis including analysis across the interfaces

Mechanism for resolution of design conflicts
Development and verification testing is critical

Testing based on building block approach – subscale, full-scale, subsystem, component, system

Types of testing – development, qualification, verification, certification, acceptance

Mutual understanding of assumptions and limitation of tests