System Operational Model

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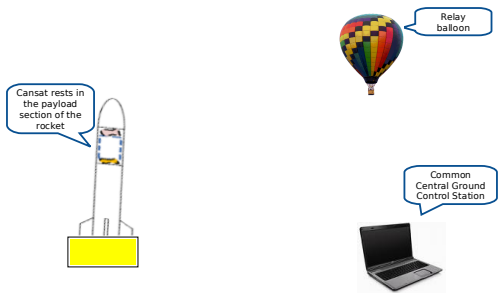
Concept of Operations

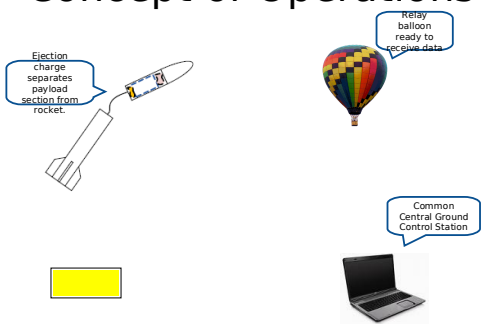
- System Performance Specifications (SP – similar to System Requirements Specifications (SRS)
- Operation Concept Description (OCD)

- May or may not be cyclical in nature
- Different Systems
  - Single use Systems
  - Reuse Systems
  - Recyclable systems

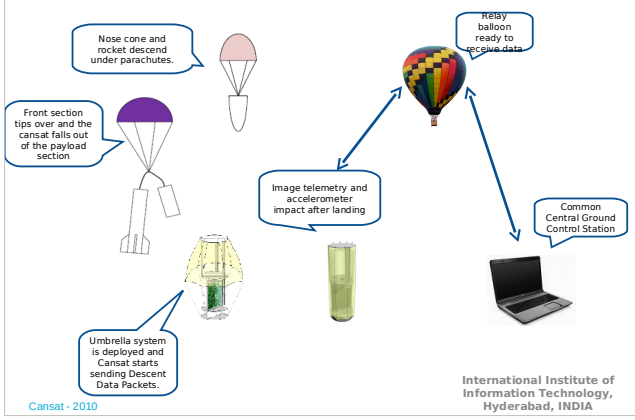
Concept of Operations



Concept of Operations



Concept of Operations



Systems Operational Model

- *represents* an integrated, multi-level collection of system use case based capabilities and activities required to achieve an overall *mission* objective.

Generalized ConOps

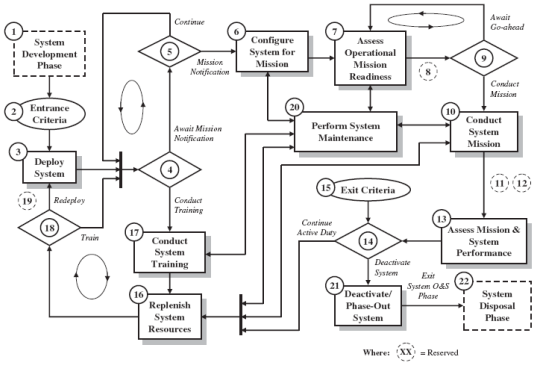


Figure 18.1 Generalized System Concept of Operations (ConOps) Model

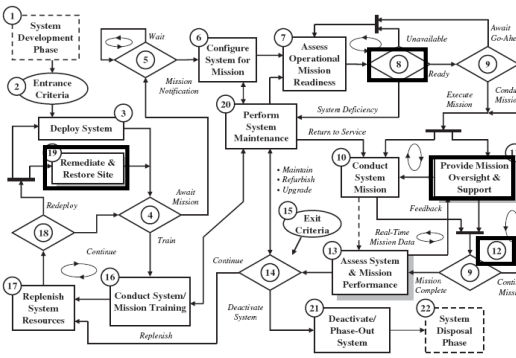


Figure 18.2 Robust System Concept of Operations (ConOps) Model

System Use Cases

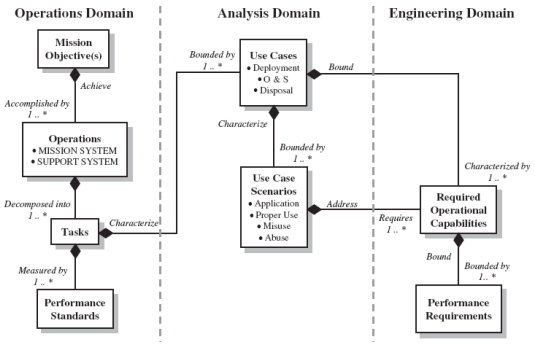
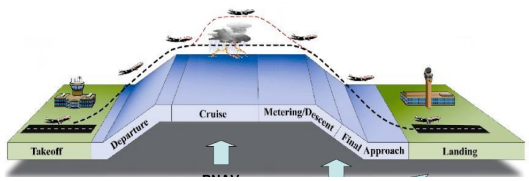


Figure 17.1 System/Product Use Cases and Scenarios Entity Relationships

Flow of Operations

- Phases
- Modes
- States
  - *it* relates to the structure—meaning a configuration—and the level of activity pres within the structure

Multiple Phases for an Aircraft motion



1. Taxiing
2. Takeoff
3. Departure
4. Cruise
5. Descent
6. Landing
7. Taxiing to Gate/Bay
8. Parking

E-R diagram

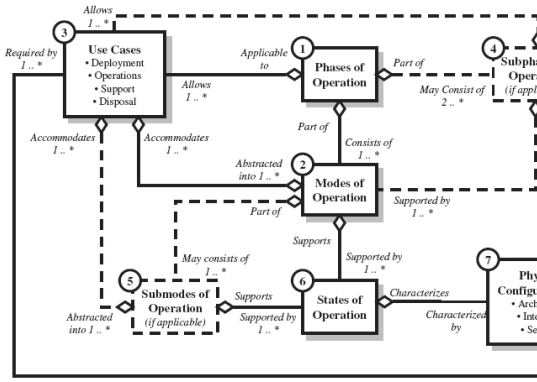


Figure 19.1 Relationships Between System Use Cases and Phases, Modes, and States of Operat

Understanding the System Modes of Operation

- Modes are Options in a given set of conditions and criteria
- System Modal Transition
  - Triggering Event – Entry or Exit criteria
- Mission Event Timeline (MET)
- Standard Operation Practices and Procedures (SOPP)

States in a System

- Operational States
- Physical States

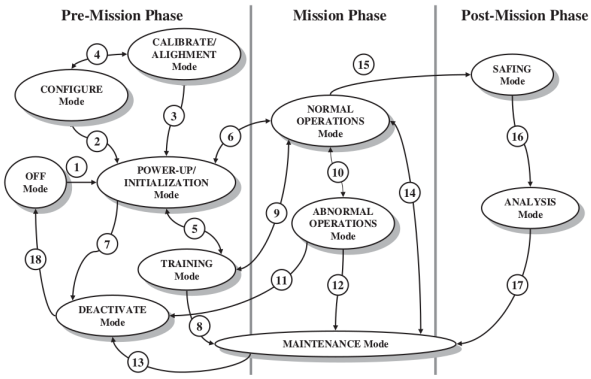


Figure 19.5 Fundamental System Phase and Modes of Operation Construct

States and its descriptors

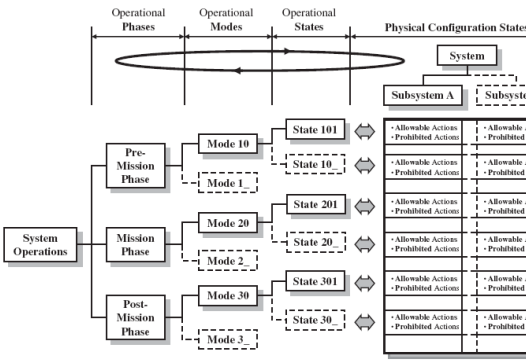


Figure 19.6 How Operational Phases, Modes, and States Influence Physical System Design and Vice

Matrix Approach to detailing

(#) = Reference to description

= Not Applicable

Operational Task	System Phase of Operation: Pre-Mission MISSION SYSTEM Elements	Pre-Mission SUPPORT SYSTEM Elements	Mission MISSION SYSTEM Elements	Mission SUPPORT SYSTEM Elements	Post Mission MISSION SYSTEM Elements	Post Mission SUPPORT SYSTEM Elements
3.0 Deploy System						
4.0 Conduct Training Decision						
5.0 Mission Notification Decision						
6.0 Configure System for Mission						
7.0 Assess Mission Readiness						
9.0 Mission Go-Ahead Decision						
10.0 Conduct System Mission						
13.0 Assess Mission & System Performance						
14.0 Deactivate System Decision						
16.0 Replenish System Decision						
17.0 Conduct System Training						
18.0 Redeploy System Decision						
20.0 Perform System Maintenance						
21.0 Deactivate / Phase-Out System						

Figure 20.1 Mapping Operational Tasks to MISSION SYSTEM and SUPPORT SYSTEM Elements as a Function

Mission and Support Operatio

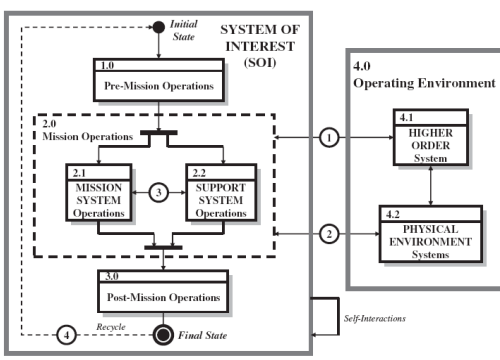


Figure 20.2 Concurrent Mission Operations