Topic: Mission Descriptions

Problem: Using your chosen system, draft a story/walkthrough of the primary mission for your system. For added value, draft stories/walkthroughs of secondary, tertiary and even adversarial missions for your system. Typically, the more, the better.

Pointers/Tips:

- Keep them relatively short – 1-3 paragraphs in length.
- It's okay if they are rather high level & abstract. We can decompose them into greater detail later.
- Mission descriptions should minimize implying or forcing solutions into the descriptions. In other words, speak only in terms of capabilities, not of solutions. Tell us what your system does, not how it does it.
    - Why? Because in reality, 'new' systems don't have the pleasure of hindsight where solutions are already created. 'New' systems don't yet have solutions, and so much remain as abstract descriptions until the design teams unleash their expertise to come up with solutions. This happens much later than the drafting of mission descriptions.
- Attempt to tell the story from the system's perspective and avoid telling the story from the user's perspective. User-perspective stories are called Use Cases and appear at much lower levels of a system's hierarchy, and typically later in the life cycle.
- Attempt to capture what the user or external entity your system interacts with provides and expects back in return. Typically, these inputs and outputs are one of the following: Forces, Energy, Data, Signals, Services or Materials.
- These mission descriptions are collected into a document call the Operational Concept, or OpsCon. This term will show up many times throughout this course.
- If you feel compelled, instead of focusing on the missions during operations, perhaps shift focus on missions during deployment, testing, maintenance or even retirement. Perhaps try to write a mission description for each of these phases.

- Here is an example for Withdraw Cash Services provided for an ATM:

The ATM is powered on by an external source and awaits a user. The ATM receives a prompt that a user wishes to use the ATM. The ATM requests which type of service the user wishes to use: Withdraw Cash, Deposit or Check Account Balance. The user instructs the ATM they wish to perform Withdraw Cash. The ATM requests credentials (ID & account number) from the user. The ATM receives credentials from the user. The ATM then validates the user's credentials with the user's bank and requests and receives their account balance (to ensure the user does not overdraft). The ATM then prompts the user how much they would like to withdraw. The ATM receives the amount to withdraw from the user. The ATM then ensures the amount requested is less than the user's account balance. If it is less than the account balance, then the ATM provides the amount of cash requested to the user. Once the ATM detects that the user took the cash, the ATM informs the user's bank of the transaction and updates internal records. The ATM then requests if the user would like to conduct another transaction. After receiving a request to finalize the transaction, the ATM provides proof of the transaction. After the transaction is complete, the ATM defaults back to awaiting a user.

- Things to notice about this description:
  - No solutions were implied or forced into the scenario.
  - The internal workings of the ATM are not described, assumed, or included. Only what capabilities & services the ATM provides. Not even an ATM card, PIN, or receipt was included. These were generalized instead.
  - Inputs and outputs were included to & from the ATM, the User & the User's Bank.
  - There are 3 "actors" in this scenario: the ATM, the User & the User's Bank.
  - Each step is described from the system's perspective.

- Submit your mission description(s) to support@learnse.com if you'd like me to check it & provide feedback.

