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CS101

**Improving the R.O.K Air Force C4I System**

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* Education
  + MS in Computer Science Univ. of Missouri
  + BS in Computer Science R.O.K Air Force Academy
* Work Experience
  + I&C Officer of R.O.K Global Hawk Project
  + Cyber Security of Air Force
  + Senior System Engineer of Logistics Computer Center
  + Vice Commander of 8th I&C Squadron
* C4I – Command & Control, Communication, Computer, Intelligence
* Functions of C4I
  + Command – Mission command, Help with decision making
  + Staffs – Collecting information, Advise to the commander
  + Working Level
* Air Force C4I System
  + Support the Air Task Cycle: Contingency Planning, Crisis Action Planning, Campaign Planning, Objectives/Effects/Guidance, Target Development and Weaponeering, Capabilities Analysis, ATO Production and Dissemination
* Current R.O.K Information SySstems
  + Network – Internet connected to the outer world. Intranet connected only within the Air Force: Resource Management and Battle Management.
* Current R.O.K Information System
  + Resource Management System – DOD: Human resource, Facility. Army/Navy/Air Force: Intranet, Logistics.
  + Processes of Army/Navy/Air Force don’t interlink well with each other
  + Battle Management System – Joint forces C4I is interconnected will all the branches and other systems. The interconnection is very limited with each other which causes problems.
  + Interconnecting between systems – both servers have a system and an interconnecting server which put information through a firewall to other servers.
* Air Force C4I System: 1st R.O.K C4I System
* Project Process
  + 1st Project (2007)
    - Interconnecting to MCRC
      * MCRC: Master Control & Reporting Center
    - COP, Secret Communications
    - Battle Resource Management
  + 2nd Project (2015)
    - ATO Producing, Performance Improvement, TDL
    - Connect TDL to link16
* Major Lee’s Improvements to C4I System
  + Criteria for Suggestions
    - Operation, Availability, Survivability, Standardization, Security.
  + Operation
    - Current System
      * Unified system
        + Unable to run whole functions when System is down
        + System should never be down so give priorities
      * Modern Strategy: Sensor to Shooter, Fast Op’ Tempo
    - System Suggestion
      * Priority Modularization
        + C2 System
        + ATO and Air Task Management System
        + ISR System – information and intelligence to target
        + Sub Systems
  + Availability
    - Current System
      * Closed Network per Information System
        + Designated Devices per Information System
        + Duplicate Resource Data input
    - System Suggestion
      * Connected Network System
        + Prevent Duplicate Input and Management
      * Device Free Access to All Information System
        + Roll Base Access Control
  + Survivability
    - Current Systems
      * DR System in Discrete Location(Active-Stby)
      * Limit the users for computer power cost
    - System Suggestion
      * Recovery by Priority
      * Virtualized Cloud Computing
  + Standardization
    - Current System
      * Simple Computation Work Flow
        + The only change is working tool to computer
    - System Suggestion
      * Task acceleration and computation work redesign
        + BPA(Business Process Analysis)
    - Current Standardization Effort in R.O.K DOD
      * Establishing unit for interoperability
        + Unit code and module standardization
    - System Suggestion
      * Common Language Development for interoperability
        + For joint & combined C4I systems
        + C-BML
    - Security
      * Current System
        + USB type cryptographic module per information system
        + External storage for secret files
      * System Suggestion
        + Common cryptographic module + biometrics authentication
        + SBC secret storage and work space

Summary: Major Lee reviewed the current R.O.K C4I system for the Air Force and pointed out many of its flaws. Along with these flaws he presented his suggestions for improvement of the system and things to be considered with systems engineering.