# System of Systems Engineering Collaborators Information Exchange (SoSECIE)

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#### Challenges for Systems of Systems/Mission Engineering in a Space Acquisition Environment

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#### Abstract

The paradigm of how space systems are acquired has changed. In response the USAF Space and Missile Systems Center has begun applying Systems of Systems/Mission Engineering in a Space Acquisition Environment. Discussion on progress so far, challenges, and potential ways forward are discussed.

For the last sixty years space has been considered to be an uncontested environment. However recent threats to the space commons have required a rethinking of this philosophy, thus necessitating a change of how the Air Force works in the space domain. As a result of this, on October 15, 2018 the USAF Space and Missile Systems Center (SMC) began transition to “SMC 2.0”. This was done in order to better respond to USAF Space Command’s mandate to acquire space systems more rapidly and with better agility. Also, space systems were previously acquired individually and designed as exquisite point solutions to capability needs, without regard to other systems being acquired by other program offices. As the result, the Space Portfolio lacked cohesion and coherence. Now SMC 2.0 requires that all systems primarily benefit the Space Enterprise, and that has required in shift in the paradigm from development of individual systems to the integration of a systems of systems to better benefit the warfighter. Additionally, the concept of Mission Engineering, in which the mission itself is the system, has taken also root at the Center. This paper summarizes progress to date by the SMC Portfolio Architect and the SMC Systems of Systems Engineer in meet this challenge within a DoD acquisition environment. Lessons learned, along with potential pathways for meeting the mandate are discussed.

#### Biography

Lt Col Benjamin M. Bennett is the Deputy, Science and Technology Division, Portfolio Architect, Space and Missile Systems Center (SMC), Los Angeles Air Force Base, El Segundo, California. He holds a BSME from Utah State University and an MS in Systems Engineering from AFIT. Over his last 16 years he has broadened his leadership and technical capabilities by serving in 6 different Major Commands. Most notably he has worked on development testing of the RQ-4A Global Hawk, operational testing and evaluation of advanced communication packages and software upgrades for the bomber fleet. He has also analyzed foreign aircraft systems and led a team in analysis of counterspace operations. He led and managed the Air Force Research Lab Materials and Manufacturing Installation Readiness Energy Working Group. Prior to his current position, he was the Deputy Chief for the SMC System of Systems Engineering Division.