

Introduction

Systems-of-systems integration (SOSI) is the Research, Development and Engineering Command's (RDECOM's) "nerve center" for technical integration and synchronization. Its systems-of-systems perspective helps ensure that properly balanced trade-offs are made across individual systems and technologies. Thus, overall integrated systems are optimized for performance within cost and schedule constraints. This perspective, when combined with effective and efficient technology identification, exploration, development, test, and analysis processes, will expedite the transition of technology to the soldier. SOSI ensures that Army Materiel Command (AMC)-sponsored technology is relevant, timely, affordable, and of the highest caliber. SOSI also ensures that technology is impartially evaluated and coordinated and that it is the best obtainable from industry, academia, in-house, other government agencies, and international sources.

The Modeling Architecture for Technology and Research Experimentation (MATREX) will reach across all labs within RDECOM to ensure that the necessary architecture is in place to facilitate modeling and simulation experimentation and improved interoperability with the Future Combat Systems Lead Systems Integrator, the Army Test and Evaluation Command (ATEC), and Training and Doctrine Command.

To ensure that gaps in capability or technology areas are aligned with Army goals, SOSI is concentrating on a portfolio management approach integrating activities across individual and grouped science and technology objectives and advanced technology demonstrations. Consideration and integration of technologies outside Army labs will include foreign markets, other Services, other government agencies, academia, and

SYSTEMS-OF-SYSTEMS INTEGRATION AT RDECOM (PROVISIONAL)

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industry. Advanced state-of-the-art manufacturing technologies required to produce Army systems will be included in the Manufacturing Technology Program.

IPTs

Through the use of integrated product teams (IPTs) for capability management and technology integration, the command will build portfolios of science and technology (S&T) programs. Current capability management IPTs are survivability, supportability and maneuver sustainment, and lethality. Current technology integration IPTs are robotics, and power and energy. Other IPTs will be established to support the U.S. Army Training and Doctrine Command's (TRADOC's) key operational capabilities (aka "chunks"), providing technical focus on the development of Future Combat Systems and the Objective Force.

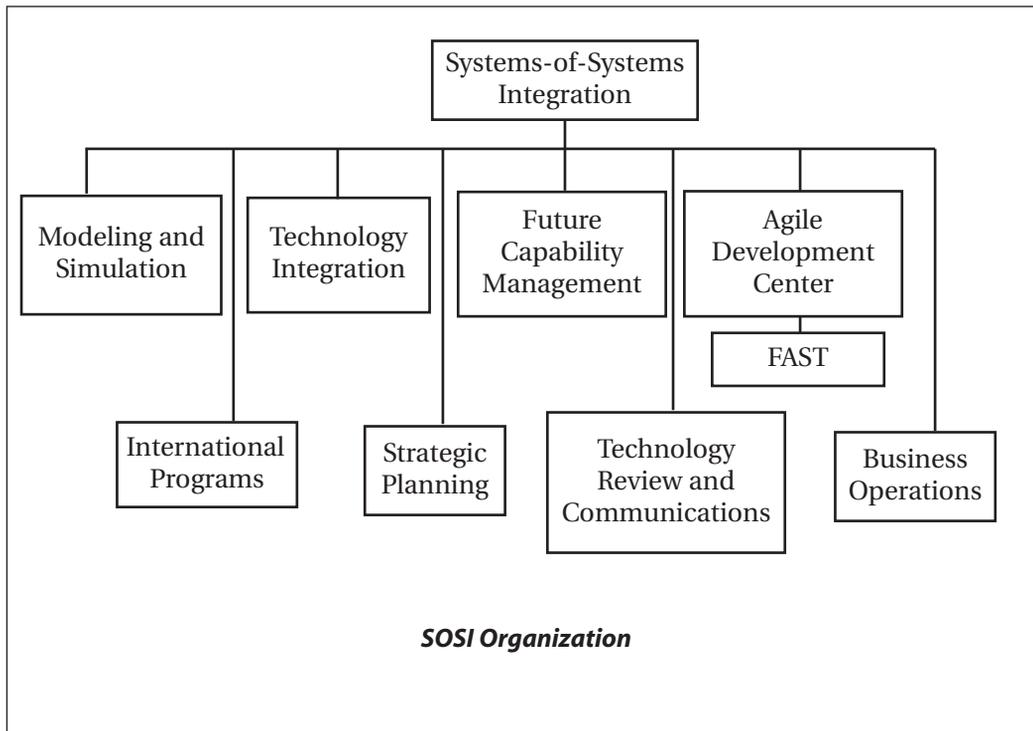
The Agile Development Center (ADC), an activity within SOSI, expedites technology delivery to priority users. ADC links scientists and developers to field operators from the Army, joint, or interagency communities when a solution is needed quickly. It does not duplicate the activities of the innovation centers in the laboratories, but seeks to accelerate the delivery of products and pro-

totypes requiring limited additional development. Operating with a sense of urgency, ADC recognizes that a soldier who needs help today often prefers a 70-percent, or even a 50-percent, solution delivered tomorrow over a 100-percent solution promised in the distant future.

ADC's efforts support the warfighter. Liaison elements deploy with Army forces on operational deployments to better understand the commander's current operational needs, priorities, and concerns. ADC includes the AMC Field Assistance in Science and Technology (FAST) office, which positions Army science advisors with each of the regional combatant commanders and the Army's major commands. These advisors serve as a two-way bridge between the research and development community and the field commands. These liaison elements and science advisors deployed in support of Operation Iraqi Freedom to shorten the time between the identification of operational needs and delivery of technical solutions from the laboratory.

Partnerships

In foreign markets, "technology mining" will be used to identify new and cutting-edge technologies in both the industry and academic



arenas. Primary emphasis will be on finding the elusive technology that will bring a major breakthrough in military application. Additionally, interface with the Office of the Deputy Assistant Secretary of the Army for Defense Exports and Cooperation is significantly enhanced by having a direct link into RDECOM through SOSI.

SOSI strategic planning will include partnerships with DOD organizations, industry, academia, other Services, and other government agencies. Initial partnering agreements are in progress with ATEC; TRADOC; and Sandia, Oak Ridge, and Lawrence Livermore National Labs.

Outreach efforts are being made with historically black colleges and universities and minority institutions to encourage students with appropriate educational backgrounds to work for the Army after graduation. This activity will be part of SOSI efforts to enhance the management of the Army's Engineers and Scientists (Non-Construction) Career Program (CP-16).

The recently introduced *RDECOM Magazine* will provide a forum to introduce and discuss cutting-edge technologies and research that supports operational commands and the warfighter. Feature articles will focus on technology and initiatives to provide desired capabilities for the Future Combat Systems and the Objective Force. The magazine is distributed to senior leaders of Congress, DOD, Department of the Army, and other Services. It is available online at www.rdecom.army.mil.

Conclusion

The primary focus of SOSI is to make a significantly more effective, efficient, timely, and productive AMC contribution to the military system acquisition process. This will be accomplished by providing proven mature technology at an accelerated pace within available resources. This process will be significantly enhanced through the use of a collaborative environment, a systems-of-systems perspective, and a clear

focus on the Army's Future Combat Systems and Objective Force.

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