

Providing Systems Engineering Support to State & Local Jurisdictions

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It has been previously suggested that the federal government should provide direct assistance to state, local, and private-sector entities to develop the homeland-security capabilities of those entities and thus help meet *national* priorities. Over the past eight years, many state and local jurisdictions have struggled to engineer new capabilities, and/or to re-engineer existing capabilities, in accordance with the numerous homeland-security requirements coming out of Washington, D.C. – i.e., mandated by the executive and/or legislative branches of government. A continuing lack of systems-engineering and program-management resources and core competencies has intensified the challenge.

Two already existing resources – which have been largely untapped to date, however – are the Federally Funded Research and Development Centers (FFRDCs) and the University Affiliated Research Centers (UARCs), both of which are authorized under federal law to provide essential engineering, research, and development capabilities through non-competitive procedures. The accompanying diagram shows how the concept is supposed to work.

The FFRDCs were established during World War II to help federal agencies solve special R&D (research and development) problems that require intellectual capacity to augment existing internal resources. Acting as trusted advisors, the FFRDCs and UARCs enable agencies to carry out various RDT&E (research, development, test, and evaluation) tasks that are integral to the missions and operations of the sponsoring agencies.

Why Should Federal Resources Be Provided?

The Post-Katrina Emergency Management Recovery Act (PKEMRA) requires significant preparedness capabilities and assessments for states. The FEMA regions are assigned a significant role to play in this effort. The FFRDCs/UARCs can legally provide assistance to FEMA's regional staff to support improvements in capability development for state and local, particularly UASI (Urban Areas Security Initiative) jurisdictions.

The support that could be provided to the states through FEMA would improve and expand state and local capabilities that would enhance the nation's security and would be an innovative but affordable use of these RDT&E resources in support of FEMA's own national-preparedness missions and responsibilities. The process would also provide federal science and technology (S&T) organizations the validated requirements needed to invest federal resources either through S&T programs or through federal departmental and agency programs.

The FFRDCs and UARCs also could provide state and local jurisdictions the capability to effectively generate requirements and carry out systems-engineering programs. The systems-engineering cycle provides a ready path for documenting critical needs and then developing concepts and solutions that can be tested and evaluated. It also can document the scope of work involved in procurement and provide overall program-management support. Many if not all private-sector companies are reluctant to provide this service, it should be pointed out, because most state and local procurement rules would not allow them to participate in the downstream procurements.

It can be safely assumed that the nation's systems integrators are both willing and able to facilitate a transfer, to state and local governments, of the technologies and capabilities related to national-security environments. Private-sector companies obviously want to be able to provide products and services to state and local jurisdictions. However, they often are unable to determine, on their own, what the requirements are and are therefore perceived (erroneously, in most cases) as marketing solutions in search of problems.

After the requirements have been identified, there also could also be Indefinite Delivery/Indefinite Quantity (IDIQ) contracts awarded through GSA (General Services Administration) schedules to provide

follow-on systems-engineering and program-management services through private-sector companies.

The All Hazards Consortium (eight states, and the District of Columbia) of the mid-Atlantic region has been testing the use of FFRDCs and UARCs to develop prioritized regional requirements. The initial result has been the development and promulgation of five "White Papers" dealing with such important topics as fusion centers; communications and interoperability; the protection of critical infrastructure; catastrophic event preparedness; and geographic information systems.

The purpose of the White Papers is to identify consensus regional needs and to develop recommendations to meet those needs. Mitre, CNA, APL, and Argonne National Labs are prominent among the FFRDCs/UARCs that have participated so far.

The Oak Ridge National Laboratory in Tennessee is carrying out similar work in the Southeast area of the United States. In addition, the Naval Postgraduate School has prepared a report that analyzes the development of multi-jurisdictional networked alliances and emergency-preparedness organizations and entities. An inventory would undoubtedly discover other ad hoc innovations completed or now being carried out by FFRDCs and UARCs, as well as universities, throughout the nation. Systems engineering currently represents, in short, a significant gap that can be methodically, and cost-effectively, closed through the innovative use of the FFRDCs and UARCs.

