DARPA’s System F6 program seeks to develop and demonstrate the enabling technologies for fractionated spacecraft architectures. Fractionated spacecraft are a class of disaggregated satellites, wherein the functionality traditionally provided by a single, large, “monolithic” satellite is delivered by a cluster of wirelessly-interconnected modules (spacecraft) capable of seamlessly sharing a variety of resources (e.g. computation, storage, communication links, mission sensors) over a network with real-time, multi-level security, and fault tolerance guarantees. Such an architecture has the potential to significantly enhance the adaptability and survivability of space capabilities, while also shortening development timelines for complex space systems and reducing the barrier-to-entry for participation in the national security space industry.

The System F6 program is structured around three principal and loosely-coupled artifacts: the F6 Developer’s Kit (FDK), the F6 Tech Package (F6TP), and the F6 On-Orbit Demonstration Testbed. The FDK is a set of open source, exportable, non-proprietary interface standards, protocols, software, behaviors, and reference implementations thereof, necessary for any party, without a contractual relationship with or assistance from any System F6 performer, to develop a clean-sheet spacecraft design that can fully participate in a fractionated cluster. The FDK was the subject of a prior DARPA solicitation. The F6TP, also previously solicited through a DARPA BAA, is a modular hardware component that can be installed on a wide range of spacecraft buses to enable them to fully participate in a fractionated cluster. The F6TP is a network-computing device that physically connects to and provides switching and routing functions between: the spacecraft bus; one or more wireless inter-module transceivers; shared resource payloads such as high-performance computing, data storage, and other communications links; and mission payloads such as mission sensors (and including hosted payloads).

The F6 On-Orbit Demo Testbed—the subject of a solicitation planned to be released in the near future—will provide cost-effective satellite buses to populate the demonstration cluster, host the F6TP and inter-satellite communications crosslinks on each bus, provide or host additional payloads to be shared across the cluster network, and provide support services for integration and on-orbit demo operations.

A DRAFT System F6 On-Orbit Demonstration Testbed BAA has been provided with this Proposers’ Day Announcement as a separate attachment.

DARPA will host an in-person Proposers’ Day to provide information on progress within the multiple efforts constituting the System F6 program and to describe the details of the System F6 On-Orbit Demonstration Testbed BAA. This event will be held on Thursday, May 3, 2012.
starting at 8:00am Eastern Time at the Westin Arlington Gateway at 801 North Glebe Road, Arlington, VA 22203. The registration deadline is 4:00pm Eastern Time on Monday, April 30, 2012. To register please go to:

http://www.sa-meetings.com/F6TestBed
Username: F6
Password: Testbed

To maximize the pool of innovative proposal concepts, DARPA strongly encourages the participation in these events and subsequent solicitations by non-traditional performers, including small businesses, academic and research institutions, and first-time government contractors. There are no restrictions on citizenship or nationality of Proposers’ Day attendees. A list of registrant contact information will be made available following the Proposers’ Day to facilitate interchange among interested parties and organizations.

This announcement serves as a notice only and is issued solely for information and planning purposes. Neither the Proposers’ Day nor this announcement constitute a formal solicitation for proposals or proposal abstracts. Participation in the Proposers’ Day is voluntary and is not required to propose to this or any future solicitation. DARPA will not provide reimbursement for any costs incurred to participate in this Proposers’ Day.

For assistance with registration or other questions pertaining to the Proposers’ Day, please contact:

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Queries regarding the solicitation should be directed to:
DARPA-BAA-12-32@darpa.mil