

Risk Reduction for Selecting the AOC WS Lead System Integrator

ABSTRACT:

This document presents the challenges to selecting an AOC Lead System Integrator, the areas to balance, and two possible approaches. Industry feedback on the approaches is welcomed.

BACKGROUND:

The Air & Space Operations Center (AOC) AN/USQ-163 Falconer, the senior element of the THEATER AIR CONTROL SYSTEM (TACS), is the weapon system that the Commander, Air Force Forces (COMAFFOR) provides the Joint Force Air Component Commander (JFACC) for planning executing and assessing theater-wide aerospace operations. (ref: AOC ORD, 14 Aug 02)

At a full Major Theater of War tempo, it functions 24/7 with many hundreds of trained C2 professionals working in shifts to plan and execute up to several thousand air sorties per day.

Worldwide, there are five Falconer AOCs (three considered deployable, two considered non-deployable). Additionally, scattered throughout the world, there are at least five functional AOCs through which the COMAFFOR supports functional Unified Commands. Though varied in size, the functional AOCs tend to be smaller, and have less functionality, than the Falconers. There are also multiple Training and Innovation Centers in support of the Falconers and functional AOCs. There are also about five Air Reserve Component units that have AOC augmentation commitments. The augmentation packages consist of personnel assets and training equipment only.

The Al Udiid Air Base (AUAB) AOC in Qatar, used during Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF), and the Hardened Theater Air Control Center (HTACC) in Korea, are examples of Falconer AOCs.

An AOC consists of a large number of related, yet independent, systems which must all interoperate to effect the capabilities required to plan, conduct, and monitor the air and space war. In addition, it must be scalable and modular across the spectrum of conflict; and readily able to accept innovation from any source.

The AOC-WS SPO is considering two different acquisition approaches to selecting and awarding the Lead System Integrator (LSI).

Questions should be directed to:

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The goals for the LSI are, at the highest level, to integrate functionality and capabilities within the construct known as the AOC. Then to field and sustain the AOCs located throughout the world.

The biggest challenge is the three-way balance of the competing demands for *Standardization*, *Customization*, and *Modernization* among all the current and future AOCs. This has to be done in an exceedingly complex and ever-changing environment. These diverse and competing demands are shown on the left side of the figures. This is a three-way balancing act of:

Standardization, a measure of how much the AOCs are the same across locations, that is attractive for many reasons. A standard configuration reduces unknowns. We know what it takes to buy, build, support, and train for the employment of a standard “system” (note that the concept of “system” when applied to an AOC suggests a level of definition, control, and predictability that, realistically, is not found). From the “outside,” standardization makes the AOC easier to think about, talk about, and plan for. Additionally, the idea of training a cadre of C2 professionals who can go to any AOC and immediately be up-to-speed and perform effectively is compelling. On the down side, few (if any) of the employments of AOCs have resulted in a standard configuration. This is because the demands of specific AORs, missions, commanders, and coalition team composition, have required special treatment. In addition, the dynamics of environment have resulted in the emergence of new tactics and have matured joint doctrine. Often these require the AOC to change not just how it is configured and used, but what it contains as well.

Customization, a measure of how much the AOCs are tailored to the needs of the specific location, is attractive for many reasons as well. It is an explicit acknowledgement of the needs of those who are using the AOC. Customization also has its downside: What does one train to? What will it cost to build and sustain? To have a standard system that is also completely customizable is not possible, and even if possible likely not affordable (for example, how does one test it?). Nevertheless, calling our current AOCs “customized” probably captures the essence of where we are today.

Modernization, a measure of how “current” the technologies and tools are at the AOCs, has its attractive features, too. Commercial IT is moving towards solving many of our thorny problems: security and protection; easier creation, integration, and support of functionality; easier setup and management; better performance; and a host of valuable characteristics. In fact, we are forced to continually modernize. Vendors don’t support specific hardware and software *in perpetuity*. Therefore, we need to modernize for technology refresh purposes as well as to incorporate new functionality. The downside to *modernization* is the disruption it causes. Hardware and software must be taken out and changed; well-honed skills may be rendered obsolete. Things look and feel different. Within this environment the Government desires to treat AOCs as weapon systems.

This immediately suggests a formalism and structure for AOC management, no longer are AOCs to be *ad hoc* collections. The Government is not structured to be the integrator over the long term. Thus we are seeking a Lead System Integrator to support AOCs.

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POTENTIAL APPROACHES TO SELECTING THE LSI

We see the responsibilities of an LSI falling into two interrelated areas: *Integration*, and *Fielding & Sustainment*. For the reasons discussed in the background section above, we see the integration approach and tasks as the most risky area. Creating and supporting a “community of functionality developers/maintainers” which are brought together by a successful LSI requires a broad mix of technology smarts, business savvy, and organizational innovation. Currently, the AOC SPO is considering two different acquisition strategies for selecting the LSI. The first is outsourcing the current activities; the second approach is seeking innovation and reducing risk to the integration approach.

If we were to outsource current activities, we would describe the basic objectives and activities, based on how we do it, and package these in solicitation documents which would likely result in “responsive” bids which would feed us back our own information.

This is shown in figure 1, where our current approaches are reduced to the objectives and sample tasks found in the RFP package. Not surprisingly, these would result in proposals that don’t stray too far from the “colors” we currently have in our pallet. On the positive side, we’ve given a lot of thought to how to integrate, field and sustain AOCs.

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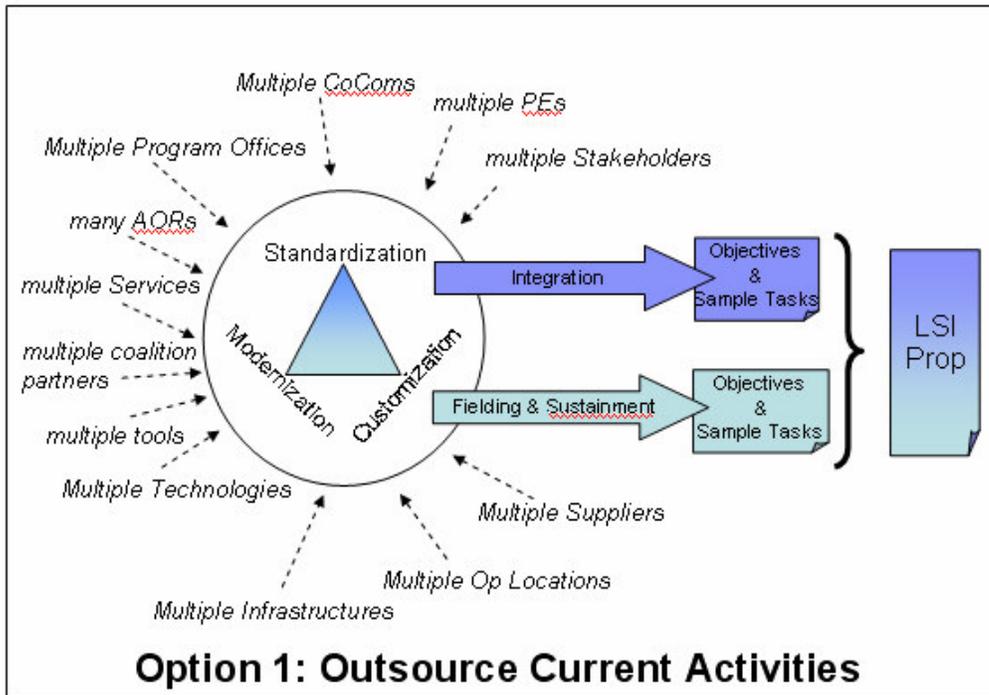


Figure 1

We've built successful examples of AOCs, and we're continually evaluating our successes and failures. We are constantly examining their complex environment, and are also continuing to examine the dynamics of the environment – with understanding we can introduce the rigor desired; and we're doing just that.

On the other hand, we recognize the inherent weakness in having the Government define and impose the fundamental nature of the integration approach used. As stated above, a successful *LSI requires a broad mix of technology smarts, business savvy, and organizational cleverness*. Along these lines, we believe there is much to harvest from industry.

This leads us to the second strategy option for selecting the LSI as shown in figure 2. In this option we perform a risk-reduction step which helps to better understand the integration roles, processes, and activities.

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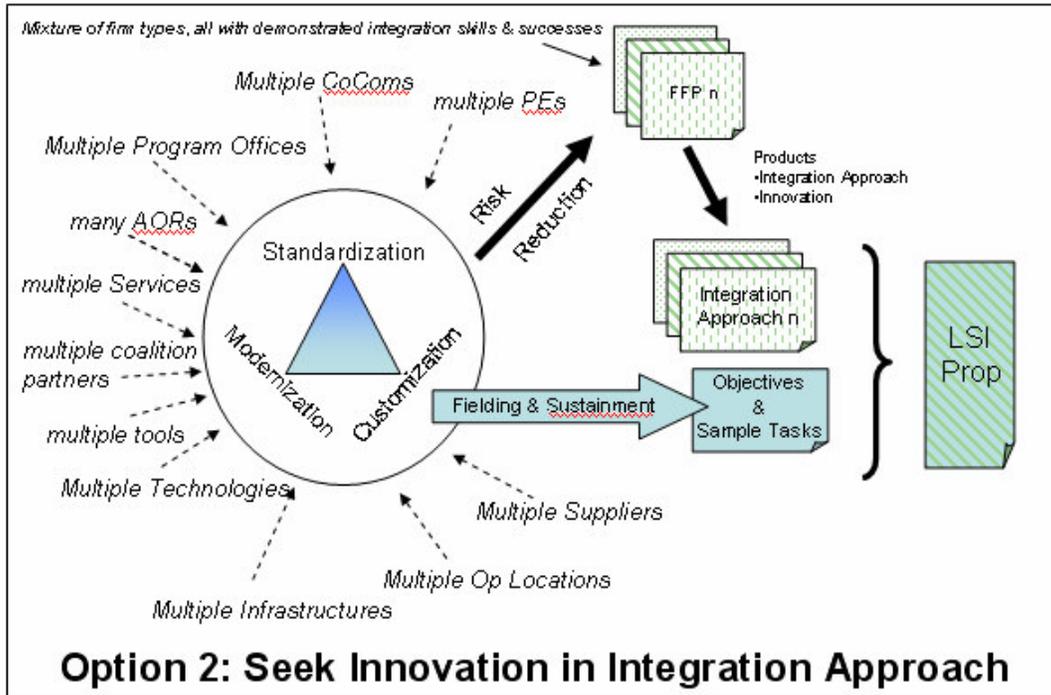


Figure 2

In this option, we award an initial set of Firm Fixed-Price (FFP) contracts and allow potential offerors to develop their approaches to balancing and integration. The FFP contracts would be of short duration, during which the complexity of the environment can be probed, and solutions created which address the realities, not just a set of assumptions, of the task. We believe the knowledge gained during the execution of the FFP contracts would result in a more comprehensive proposal with a better understanding of the risks and complexities associated with the AOC effort.

The specifics for such an activity are being explored; but key to this approach is the notion that those who produce interesting and compelling solutions during this phase would have an increased understanding and therefore reduced risk for the full LSI effort. Again, the specifics have not yet been worked out and the Government is seeking industry feedback on these two acquisition strategies.

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