



Gail Johnson-Roth
Director, Acquisition and Risk Management
Systems Engineering Division
The Aerospace Corporation

Ms. Johnson-Roth has more than 25 years of experience in aerospace engineering at The Aerospace Corporation. Her initial career was in the laboratories with focus on research and analysis of space related materials. She then worked for the Corporate Chief Engineer in the development of acquisition strategies in the changing environment of acquisition reform and documented the process to mitigate components or risk as applied to cost, schedule and performance. Ms. Johnson-Roth transitioned to ground systems programs with focus on spacelift range systems issues. Other assignments include technical staff to the Office of the Executive Vice President, and Systems Director in Civil and Commercial Operations. Ms. Johnson-Roth holds a BS, Ohio University, MS in Materials Engineering, and MS in Systems Architecture and Engineering, University of Southern California.



Mary Jo Gura
Senior Engineering Specialist
Software Engineering Subdivision
The Aerospace Corporation

Ms. Gura joined The Aerospace Corporation in August 2005, after 27 years of experience as a software engineer and software manager at Hughes/Raytheon Company. Her areas of expertise include all aspects of the software development lifecycle. At Aerospace she divides her time providing support to SMC and NRO program software acquisition activities and numerous Concept Design Center studies in the role of Software Lead. She earned a BS in Mathematics from the University of Illinois.



Sherry Stukes

**Senior Cost Estimator/Analyst, Jet Propulsion Laboratory
Task Manager for NASA Headquarters software research task**

In her senior cost estimator/analyst position, Ms. Stukes specializes in ground data systems software estimating, data collection, and analysis in support of JPL's Software Quality Improvement project. Some of Ms. Stukes' prior accomplishments include development and maintenance of two large databases for the Air Force Space and Missile Systems Center (Operations and Support Database and the Software Database); instructor for the Army Logistics Management College Software Estimating Models course; and advisor to Air Force Institute of Technology students conducting thesis projects in the area of software model calibration. Ms. Stukes was the 1997 International Society of Parametric Analysts Parametrician of the year. Ms. Stukes holds a BS degree in Business Administration from California State University, Long Beach and an MBA from California Lutheran University.

Abstract

The acquisition and subsequent maintenance of Ground Data Systems (GDS) is a diverse and complex issue. To understand the composition of a GDS, the content, extent, number of locations, number of users, and their requirements must be identified. This presentation will describe JPL's experience with our Multi-Mission Ground Station System (MGSS). The presentation will also discuss challenges and opportunities that we face in supporting our unmanned space exploration projects and missions. The following topics will be addressed:

JPL's Multi-Mission approach to support one-of-a-kind missions as well as project families such as the Mars explorers

Funding sources and challenges to ensure adequate capability

"Make or buy" decisions to determine best value

Maintaining a skilled workforce with unstable funding levels

Providing high quality service in a "low cost operations" environment

Benefits of CMMI certification

The presentation will conclude with lessons learned and possible approaches for responding to future challenges.



Nestor Peccia

Mr. Peccia is Head of the Data Systems Infrastructure Division, Department of Engineering, Operations Centre of the European Space Agency (ESA / ESOC), Darmstadt, Germany. He is also the Deputy Chairman, CCSDS Engineering Steering Group and Mission Operations and Information Management Services Area Director, and Chairman of the European Technology Harmonisation on Space Ground Software Systems.

Abstract

Ground System Acquisition Best Practices at ESA

Ground System Acquisition Best Practices at ESA are the consequence of 25 years of applying the same approach for the procurement of Space Ground Software Systems.

What does this mean?

Clear Policy

Common Business Model

Frame Contracts (FFP and FUP)

Streamline Process and harmonized Programme

Ensure competitiveness across Europe

Market ESA technology and experience as products and services

Develop once, use many

"Best-in-Class" European Common Infrastructure

Software reuse

Operational Software

Open source a la "european"

Generic Request for Proposal

Details to be discussed during and after the presentation



**Distinguished Engineer
Software Engineering Subdivision
The Aerospace Corporation**

Suellen Eslinger is a Distinguished Engineer at The Aerospace Corporation with 40 years' experience in software engineering and the acquisition of software-intensive systems. During her 22 years at Aerospace, she has supported numerous Air Force and NRO space programs. She is the Principal Investigator for software acquisition research and also leads curriculum development and delivery of software acquisition training courses for The Aerospace Institute. Previously, she worked at Computer Sciences Corporation and General Research Corporation, where she developed software and managed software development projects for DoD and NASA ground systems. Ms. Eslinger is widely published and has given numerous conference presentations and tutorials in the fields of software engineering and software acquisition. She has BS and MS degrees in mathematics, from Goucher College and University of Arizona, respectively.

Abstract

As part of the Aerospace Corporation's software acquisition research effort, a comprehensive set of software acquisition best practices has been defined, based on experience with numerous software-intensive space system acquisitions over 20 years. These best practices cover the entire National Security Space acquisition life cycle, including both pre- and post-contract award activities. This talk will present highlights from this set of software acquisition best practices, with particular emphasis on their application to ground systems acquisition.



**David Eccles
Principal Director, System Engineering and Integration
Missile Defense Division
The Aerospace Corporation**

Mr. David Eccles has been employed by The Aerospace Corporation for 23 years and leads the Federally Funded Research and Development Center's engineering team for the Missile Defense Agency's Systems Engineering Directorate. His group also provides technical support to the C2BMC Element Program Office and the Joint National Integration Center in Colorado Springs. Previous positions at Aerospace include Director of the Modeling and Simulation and Computer-aided Engineering Departments, and a stint in the Program Executive Office for Space working with the Space-based InfraRed System. He holds BS and MS degrees in Civil Engineering from Brigham Young University.

Abstract

Capabilities-based Acquisition and Knowledge Points: System Acquisition Approaches at the Missile Defense Agency as Applied to Ground System Acquisition

This talk will discuss the current acquisition approach used by the Missile Defense Agency to acquire the Ballistic Missile Defense System (BMDS). Many BMDS elements have major software components similar to large spacecraft ground systems. The Space Tracking and Surveillance System (STSS) is planning ground systems to be located at the Joint National INtegration Center (JNIC) at Shriever AFB in Colorado Springs. The Command, Control, Battle Management, and Communications program is also acquiring major ground software systems with nodes located at Combatant Commander and other locations around the world. These systems will be described at a high level to provide context. The acquisition approaches used for these systems will also be discussed focusing on two concepts: Capabilities-Based Acquisition and the use of Knowledge Points as milestones for program decisions. These approaches will be contrasted with more traditional acquisition strategies.



Christopher T. Knapp
Principal Engineer/Scientist
Directorate G
The Aerospace Corporation