

## Lockheed Martin goes live with Aerogility for F-22 Global Sustainment

Lockheed Martin Global Sustainment continues to bring new capabilities on board to support the United States Department of Defense performance-based logistics (PBL) concept. LM Global Sustainment's use of Aerogility for F-22 is part of a strategy to bring on enterprise capabilities to support multiple programs for built-in efficiencies.

Aerogility has delivered an innovative fleet planning system to the F-22 Mods & Heavy Maintenance (M&HM) team. The solution is centered on an Aerogility multi-agent model of the Lockheed Martin Sustainment Operation driving what-if simulations for complex fleet planning. Using Aerogility, the M&HM team can quickly and easily construct schedules for maintenance and modification programs, handling multiple prioritized goals and constraints. This is a key capability for Lockheed Martin achieving F-22 fleet readiness targets for the USAF, and minimizing the time and costs of aircraft in maintenance. The results of the what-if simulations will be used to make recommendations to the USAF with regards to modification planning and schedule.

### F-22 Raptor

The F-22 is the only fighter capable of simultaneously conducting air-to-air and air-to-ground combat missions with near impunity. This is accomplished with a never-before-seen standard of survivability, even while facing large numbers of sophisticated airborne and ground-based threats. In addition to being America's most prominent air-superiority fighter, the F-22 evolved from its original concept to become a lethal, survivable and flexible multi-mission fighter. By taking advantage of emerging technologies, the F-22 has emerged as a superior platform for many diverse missions including intelligence gathering, surveillance, reconnaissance and electronic attack. (Source: [www.lockheedmartin.com](http://www.lockheedmartin.com))

**Delivers measurable cost savings through reduction in planning cycles and improved flexibility.**



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## Case study: Lockheed Martin F-22 Raptor

### What-if scheduling

Aerogility has delivered an innovative multi-objective, multi-constraint fleet planning solution. The browser-based interactive planning tool is integrated into a holistic multi-agent model of the Lockheed Martin Sustainment Operation. This enables the team to develop sophisticated modification and maintenance schedules based on realistic what-if scenarios, simulating the impact of a plan on the operation, including resource consumption and associated costs. They can work-through a wide range of options, evaluating how to optimize depot utilization and the best use of field teams to do work away from the depots.

Using Aerogility, the fleet planners can create complex schedules in a series of iterations, reacting dynamically to operational changes and new requirements. These changes cannot be handled efficiently using conventional planning tools and techniques. The Aerogility solution means that the fleet planner can respond faster and more effectively to new goals and constraints — changes in availability targets, the availability of docks in a depot, or new deployment plans and funding windows.

### Productivity and flexibility

Aerogility delivers immediate productivity and flexibility benefits to the fleet planners:

- Reduces planning cycles from days to hours.
- Increases flexibility by prioritizing goals, improved constraint handling and combining schedules to achieve better resource utilization.
- Automatically integrates the impact of aircraft/part life consumption directly into the fleet planning process.
- Delivers measurable cost savings through reduction in planning cycles and improved flexibility.
- Enables the fleet planners to achieve higher levels of fleet readiness by optimizing the overall maintenance and modification schedule.

### Sharing planning assumptions

An important benefit of the Aerogility enterprise architecture is that it supports multiple teams utilizing a shared model, including the customer. This means that mission-critical program plans can be presented through a standard browser and reviewed by all the stakeholders. The assumptions underpinning the planning goals and constraints are clear to everyone — greatly enhancing confidence levels and the transparency of the planning process. This capability means that the Lockheed Martin team can work even more closely with the USAF to schedule the forward workload across airbases and depots, and ultimately, optimize the future deployment of aircraft.

### About Aerogility

Aerogility is an enterprise-scale intelligent decision-support system designed for the aerospace & defense aftermarket.

- Benefits fleet management and operations teams delivering fleet sustainment and asset availability.
- Advanced multi-agent software technology to simulate business what-if scenarios in a dynamic and realistic model of an aerospace aftermarket.
- Scalable and high performance enterprise product that can be accessed by multiple personnel using a standard browser.

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