

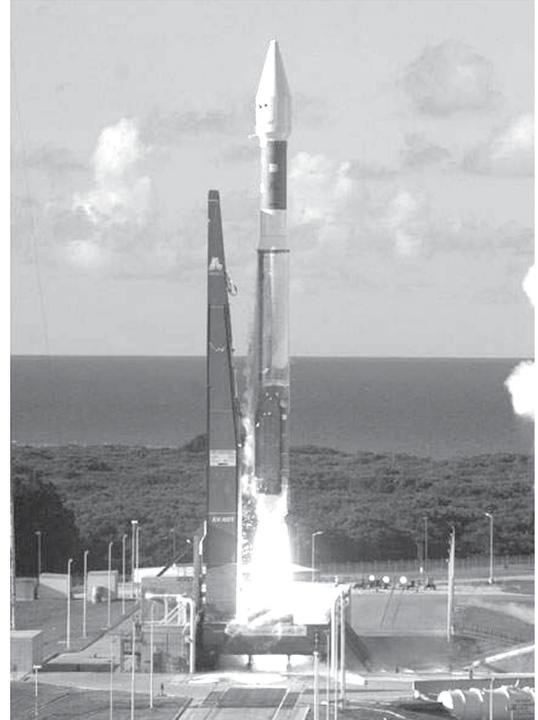
## Evolved Expandable Launch Vehicle (EELV)

### SUMMARY

- The Boeing Heavy Launch Vehicle launch is the next major program event, planned for early FY05.
- The new Test and Evaluation Master Plan is currently in development.
- DOT&E's Post Operational Assessment evaluation effort has begun.

### SYSTEM DESCRIPTION AND MISSION

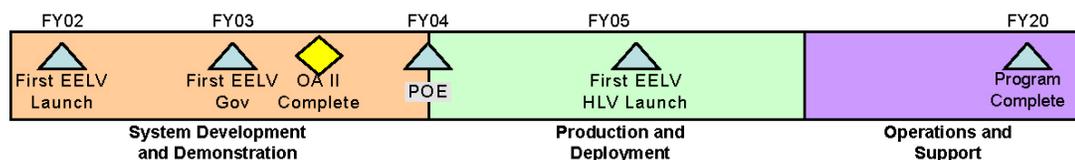
The Evolved Expandable Launch Vehicle (EELV) program fulfills government satellite launch requirements currently served by Delta II, Atlas II, Titan II, and Titan IV. The EELV will be DoD's only medium, intermediate, and heavy payload space launch capability after current heritage inventories are exhausted. FY03 marked the transition to the new launch vehicle, which should provide launch services through 2020. Boeing's EELV family of launch vehicles is designated the Delta IV, and Lockheed Martin's family the Atlas V. DoD will acquire launch services from these contractors. Production and launch operations responsibilities, as well as ownership of all EELV flight hardware and launch pad structures, will remain with the system contractor. DoD will lease launch pad real property and other on-base facilities required for operations to the contractors.



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The system contractors shared development costs with the government to satisfy both DoD civil launch requirements and commercial launch needs. The EELV system includes launch vehicles, infrastructure, support systems, and interfaces. The system is standardizing payload interfaces, launch pads, and the infrastructure so that all configurations of each contractor's EELV family can be launched from the same pad and payloads can be interchanged between vehicles in the same class (i.e., medium, intermediate, or heavy). The EELV program will maintain current mass-to-orbit capability while increasing launch rate and decreasing costs.

### TEST AND EVALUATION ACTIVITY



DOT&E participated in Test Integrated Product Team meetings, with the goal of updating the September 1998 Test and Evaluation Master Plan and ensuring critical documentation and data are available for independent review and analysis. The WDR #1 for the Delta IV Heavy Launch Vehicle took place in August 2004. The second WDR occurred in October 2004. DOT&E plans to observe this test event in preparation for the Heavy Launch Vehicle launch scheduled to occur by year's end.

# AIR FORCE PROGRAMS

## TEST AND EVALUATION ASSESSMENT

There do not appear to be any insurmountable problem areas affecting the EELV program. Both the Atlas V and Delta IV boosters have launched successfully (three times each, all prior to FY04). Further, both contractors' vehicles have successfully flown with solid boosters strapped to the main booster.

The Air Force Test and Evaluation Center completed OA-II in December 2002, and found the system to be a potentially effective and potentially suitable launch service that can support the requirements of the National Launch Forecast. Since OA-II marked the end of the Air Force Test and Evaluation Center's EELV test program involvement, DOT&E arranged for additional system performance analysis through a detailed test strategy laid out in the latest draft version of the Test and Evaluation Master Plan. Specifically, DOT&E will participate in a final operational test phase that will encompass several launches presently planned for each contractor, and should include medium launch vehicles, heavy lift vehicles, and East Coast and West Coast launches. This final phase of operational testing is the post-OA-II operational evaluation.

This post-OA-II operational evaluation concept relies extensively on combined developmental/operational testing. The test strategy also includes intensive use of models and simulations to predict individual subsystem and total system performance. The government needs to focus system effectiveness and suitability assessments in terms of how well the system can perform on various DoD missions. The current schedule includes post-OA-II operational evaluation events through October 2005.