Delta Rocket Program Takes Off With Foreseer™

The successful launch and deployment of satellites takes skilled engineers, state of the art technology and redundant systems of the highest quality. The Air Force Space Command 45th Space Wing brings all these elements together in its Delta Rocket Program. But in its continuing pursuit of improving the efficiency and cost effectiveness of the launches, the 45th Space Wing turned to Exide Electronics for software that not only provides far-reaching monitoring and management of foundation equipment but also predictive analysis. This predictive analysis is used to detect and solve problems before they occur and, in the case of rocket launches, this means not only saved time and effort but also millions of dollars.

At the 45th Space Wing's facility in Cape Canaveral, Florida nothing is left to chance. All systems from computer networks, to power, to air conditioning, are redundant. Should any system go down prior to launch, even though a backup exists, the launch is aborted. With satellite payloads valued in the hundreds of millions of dollars, there is simply no room for the possibility of error.

But the Air Force did not stop with redundant systems. In April 1997, FORESEER, a software package from the DataTrax Systems Group of Exide Electronics was installed at the launch facilities. The software provides monitoring and management of mission critical systems at the site including Uninterruptible Power Systems such as the BP III from International Power Machines, an Exide Electronics Company, and Powerware Plus 160 from Exide Electronics. Other critical foundation equipment, from a variety of manufacturers, such as generators, power conditioners, air conditioning systems, static switches and chillers, are monitored and managed, as well, by

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FORESEER. Expansion to include monitoring of other types of machinery is possible because over 75 device drivers have been written for foundation equipment. It is these drivers that send the data to the Server PC where it can be stored and analyzed with FORESEER.

FORESEER archives up to five years of historic data from all managed devices. This data is kept on-line and can be used for event analysis, cause/effect study and trend-

EXIDE ELECTRONICS
Strategic Power Management

ing. By graphing particular parameters, chronic problems can be examined and solved. Also, data can be manipulated with range and single point analysis tools to provide more insight into the nature of a problem or trend. Should conditions deteriorate with any of the monitored equipment, FORESEER activates its sophisticated alarm management subsystem including notification via OutCall Paging™.

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FORESEER comes standard with the tools necessary to do predictive analysis that helps detect problems before they occur. An excellent example of the benefits of this capability occurred in November 1997 at the launch site. During the countdown sequence of a Delta rocket carrying a satellite, FORESEER detected rising temperature in the Launch Control Center. Although the temperature had not reached the critical stage yet, it was unknown how quickly the temperature would reach the point where the launch would need to be scrubbed. By using FORESEER's ProGraph, Air Force personnel were able to extrapolate the temperature data vs. time and determine the time that service personnel would have to fix a faulty air handler. Confident that the fix could be completed within the constraints, the team managing the mission decided to continue the countdown sequence. The air handler repair work was completed in time. A successful launch and mission followed.

Building on the success with FORESEER in its current application, the Air Force has recently awarded a new contract to Precision Environment, Exide Electronics' representative in St. Petersburg, FL. "The new contract will extend the power of FORESEER to do vibrational monitoring of the motors used to power the equipment which transports the rocket onto the launchpad," said Robin Singh, President of Precision Environment. "With FORESEER the Air Force will be able to effectively analyze vibration levels to predict a failure of the motor bearings. This will help maintenance personnel to perform necessary repairs prior to a failure occurring and before a launch is affected."

With FORESEER's track record and versatility it is easy to understand why it has become the industry leading software package for the monitoring and management of mission critical foundation equipment.

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