

## Case Study – Large Aerospace/Satellite Company

A Large Aerospace/Satellite Company had 3 different in-house test executives that were difficult to support and maintain. Company decided to launch a new single test executive strategy to replace all in-house platforms and reduce testing costs that were affecting their bottom line.

Powered by a complete test platform, Verifide provided the framework and applications for test development, instrument control, data management, analysis, troubleshooting, and test sequence management.

Through shorter development life-cycles, better visibility into data and reduced manual labor, Verifide provided a stunning 66x return on investment.

### Problem:

Company had 3 different legacy systems.

System1 – One was based on excel spreadsheets for sequences and used LabWindows CVI to code the tests. All components were hard-bound, so changes to tests or managing equipment changes was very expensive. Excel spreadsheets became too difficult to setup with more complex satellites being manufactured.

System2 – Was a UNIX based test executive that used flat files to store data. Code ran in TCL scripts and was prone to problems during testing which would require copious amounts of retests and system utilization time resulting in costly schedule overruns. Data was stored in a database, but it was extremely slow and required a total of 10 data management administrators to setup and move data.

System3 – Was a MS Windows based test executive. Code was proprietary to the system integrator who provided the test system. Changes were expensive because Company had to go back to outside engineering for each change request.

Lacking a powerful platform, the following problems were evident:

#### **Troubleshooting and Disposition Suffers Due to Inadequate Analytical Tools**

None of the systems provided strong interactive analytical tools to allow system engineers or test operators the ability to drill down and explore data or troubleshoot the device under test. This leads to costly increased downtime and time to market as well as missed diagnoses. Meanwhile, production managers had no visibility into the process and metrics.

#### **Difficulty Managing Data**

The Excel and file based systems generating many large data files with thousands of rows and columns which could not be searched or queried. The database solution allowed querying but required a team of database administrators and still was inflexible in data structure.

## **Excessive Repetitive Code and Rework**

Test code, drivers, servers, and hardware were not modular and difficult to manage. More specifically, it was hard to manage and reuse software for follow-on products due to the lack of modularity and difficulty in setting up.

## **Hard to Create and Maintain Requirements and Parameters**

Requirements and parameters were often spread across thousands of Excel cells or lots of flat files. This led to frustration by test developers and system engineers as requirements changed.

## **Solution:**

Verifide's solution provides a complete software test platform. It provides a modular solution to: data analysis, data storage, monitoring and logging, developing tests, and managing test requirements and parameters.

Our system helped the company by providing the following:

### **Interactive Data Analysis Tools**

System engineers and test operators used our suite of interactive tools to visualize data, drill down, search, and compare test data. Access to data from anywhere is important, so these tools are available in our application across the Company's network and firewalls. Tools are also included for trending, statistical analysis, reporting, and production metrics.

This allowed less downtime and quicker troubleshooting as well as a view of production metrics.

### **Dynamic Database and Rich Data Types to manage Data**

Our dynamic database provided the full power of a database to query, index, and search- without database administration. In addition to typical data types like strings and numerics, our LiveData technology allowed them to store arrays, tables, complex numbers, images, binary, and other advanced data types. Our philosophy is to provide database power without requiring the headache of database details.

### **Service Framework for System Modularity**

Our distributed services framework allowed the company to augment the system with their own code for drivers, servers, and other interfaces. This modularity created a drastic reduction in cost of follow-on systems due to reuse. It was very important for the company to maintain intellectual-property and control of their proprietary test algorithms and components, so that they could support and maintain them internally with their own staff over time.

### **Table-Driven Requirements Management**

Using Verifide's sophisticated, rule-based requirements and parameter system, system engineers could quickly manage specifications on their own using tools they are already familiar with like Excel. This simplified sequences and parameters and led to rapid turnaround times as requirements changed. Furthermore, this allowed Systems Engineers to develop test sequences themselves, without the test organization needing to translate test requirements into production test sequences.

## Conclusion:

Adopting Verifide led to a stunning 66 times return on investment. The platform has been in use for over 8 years and has been used across various product lines from high-mix spacecraft, to low-mix components and cards as well.

The ROI was achieved through:

### **Faster Analysis and Troubleshooting Reduces Downtime and Speeds Time to Market**

The largest impact was from the interactive tools for analysis, troubleshooting, and dispositioning giving system engineers a much greater ability to find and fix testing issues. As an existing platform, this ability starts immediately in the test system validation phase and goes through final system sign-off. Verifide led to less production downtime, quicker time to market, and fewer missed diagnoses.

### **Reduced Manual Labor with Our Dynamic Database**

Our Dynamic Database led to a huge reduction in three major areas of frustrating manual labor. First, it eliminated the manual labor of looking for and finding data in flat files. Secondly, it drastically reduces manual labor in creating analysis, trending, and production charts and reports. Thirdly, our Dynamic Database also eliminated the need for costly database administration that is typical of traditional database and reporting tools.

### **80% Reduction in Future Test System Development Costs Through Modularity**

By providing modular systems, development costs were driven down immensely in future test system development. The customer was able to plug-and-play components to reuse tests, algorithms, drivers, and other interfaces.

## About Verifide

Verifide was founded in 2006 with the motto of "Rethink Testing". From test operators to test developers to system engineers and production managers- Verifide empowers all the role players in your test organization. Our testing platform has been validated in industries such as aerospace, semiconductor, wireless, automotive, and medical equipment.

Located in San Jose, California; Verifide's customers include large aerospace companies like Boeing, Lockheed, Orbital ATK, and BAE Systems.

Contact us at [hello@verifide.com](mailto:hello@verifide.com) or visit <http://www.verifide.com> to learn more.