

Case Study – XYZ Company.

Customer XYZ is a leading aerospace company. The micro-electronics division of the company fabricates and tests chips for use in space and defense applications.

Prior workflow:

XYZ has various testers that are being used to probe chips and perform on-wafer RF measurements. These testers generate numerous data files of various formats from binary to XML. To yield these wafers, a tool was in place that would parse the data files, perform some limit checking and could print out a report with a resulting wafer map. This manual process of yielding is done in multiple steps across multiple chips.

To be able to archive and share the test results, the yield engineer would scan the printed wafer maps to PDF files and place these files onto a directory that is accessible to systems engineering for further inspection and analysis.

Systems engineering would also be delivered composite files with test data that they would use to create excel sheets to process and then import them one by one into yet another 3rd party tool to determine analytics like normal distributions and process capability indices.

Problem:

This process involved intense manual labor in setting up yield conditions and running yield across various chips and tests. However, since the test volumes were relatively small, this inefficient and error-prone approach remained in place.

XYZ's micro-electronics business has grown in the last 5 years and is now faced with fabricating wafers with smaller nanometer technology and much larger number of chips. This would result in a 10X increase in their manual effort to produce the yield for the wafer lots which would not be sustainable with the staff and schedule constraints they were under.

Systems engineering would also be faced with far more effort parsing out huge volumes of results and would have much greater difficulty correlating data across the larger number of wafers or lots.

XYZ was faced with 3 critical problems:

- **Managing test data** - files are scattered over many drives and require manual copying and merging when retests are done.
- **Understanding the data** - Previous yield tool only generated wafer reports, systems engineering had to do manual processing of results and import into another 3rd party tool just for plotting and statistical analysis.
- **Yield Workflow** - process was overly manual and therefore error prone and repetitive. Would not be feasible for newer technology manufacturing.

Solution:

XYZ deployed Verifide's test data management and analytics solution to streamline the process as follows:

- **Managing test data** - Verifide's Dynamic Database technology allowed XYZ to push data into a managed database without needing to design databases or code to extract and analyze the data.
- **Understanding the data** - Verifide's rich set of visualization and analytical tools allow both test and systems engineers to view lower level data such as raw test results plots for S-Parameters, as well as higher level analysis such as trend plots and statistical processing reports like Yield Analysis, Cpk and Pareto charts.
- **Yield workflow** - Verifide's plug-in architecture was used to add a wafer yield tool that simplified and automated the yield steps for the operator to create hundreds of yield reports that operate directly on the database with no need for data files or manual limit settings.

Sample screenshots of Verifide's analytical capabilities XYZ is using for wafer yield processing.



Conclusion:

By deploying Verifide's solution with a custom plug-in, XYZ is now able to handle its test data with confidence. They now have all their data in a powerful and managed database without the expensive task of designing and maintaining code to do so. They are also able to provide live access to all the data that systems engineers can view remotely as well as run their own yield scenarios and use Verifide's built-in tools to view data reports, trends and analytics.

XYZ's deployment of Verifide's product was evidence of the versatility of our software; the same software has been used to manage and analyze data across various product types including large satellites, wireless stations, and semiconductor wafers.

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, and BAE Systems.

Contact us at hello@verifide.com or visit <http://www.verifide.com> to learn more.