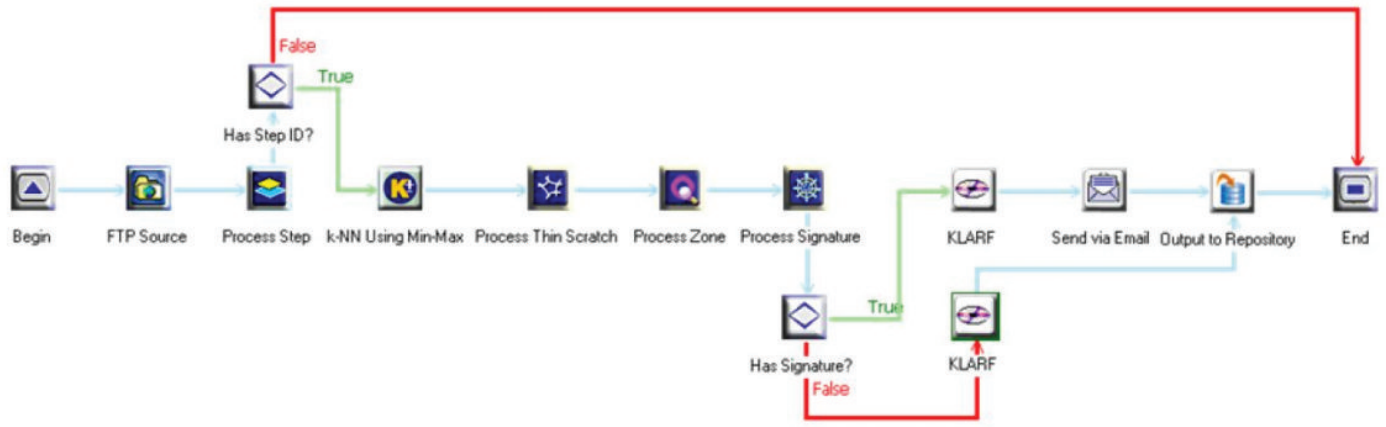
DSA DATA SHEET

Automation Workbench (AWB™) is one of the main components of the SiGlaz Intelligent Defect Analysis software suite. AWB allows the defect engineer to automate the signature analysis methodology that he developed manually using the Defect Signature Analysis (DSA) module. Using AWB, the user may automate, test and optimize the signature analysis recipe before it is transferred to production.

All spatial filters and signature recognition functions that are available in the DSA module can be assembled into an analysis recipe using the AWB graphical programming capability. When it recognizes a defect signature, the recipe can be programmed to take several actions, including (1) generate an output file (e.g., KLARF or text file); (2) generate an event trigger, notifying the defect engineer by e-mail; and (3) write the recipe analysis information to a database.



The above recipe shows how an AWB recipe may be customized for a specific process step. The recipe utilizes three recognition techniques to identify multiple defect signatures: CMP scratch, zonal analysis and object signature library. If a signature is recognized, the user is notified by email.

KEY FEATURES

Easy-to-use object library – The IDA Defect Signature Library is an .XML reference file that may be accessed by multiple AWB recipes simultaneously. For each recipe, the user may select the desired object signatures from the library and establish the optimal order of analysis for the process step. As new signatures are added to the object library, they can be easily incorporated into the analysis recipe.

Graphical user interface – To create an analysis recipe, the user simply arranges the IDA Functional icons in the work area and connects them in the sequence that the analysis is to be executed. The functional icons are identical to the functions of DSA. Each icon has a “Properties” window that allows the user to input the same parameters that are used in the manual DSA signature analysis.

Two execution modes – The user may execute the analysis recipe in either batch mode or continuous monitor mode. In batch mode, the recipe will analyze all existing files in the specified data source folder; in continuous monitor mode, the recipe will execute an application to monitor the data source folder location and it will analyze all files that are written to that folder while the application is running. AWB Recipes are executed, managed and tracked by AWB Monitor.

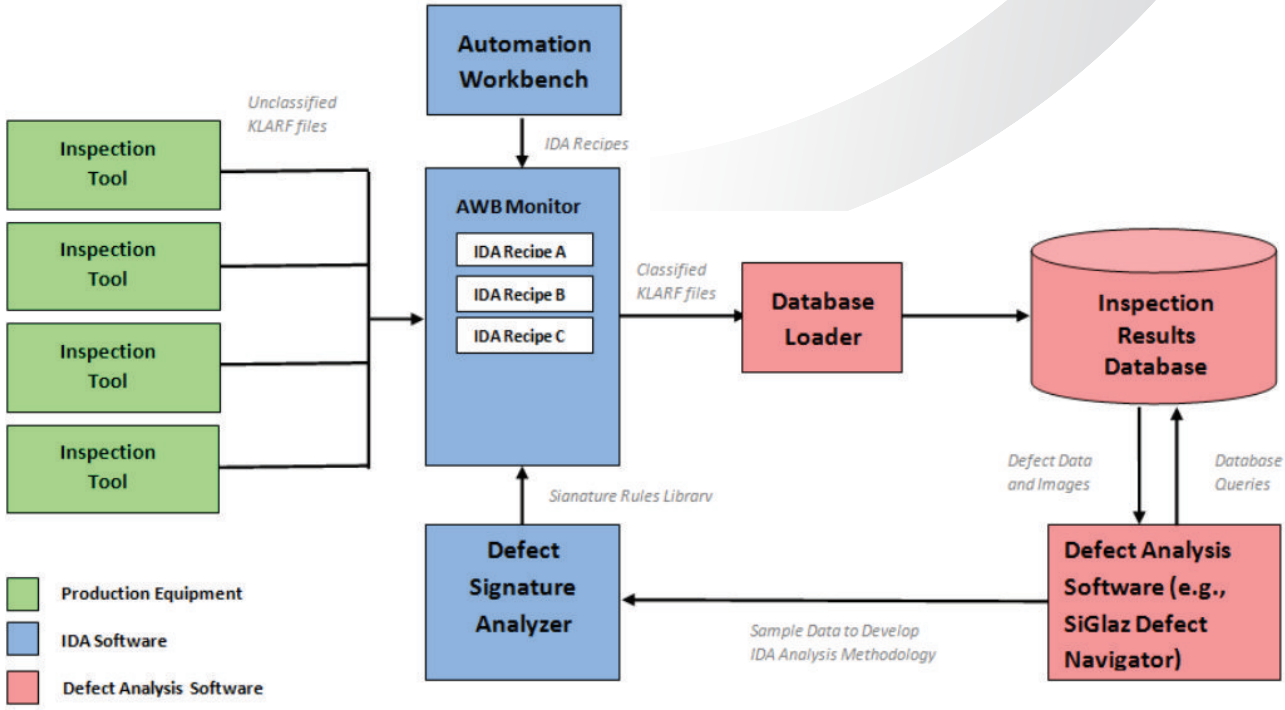
Data source options – The user may designate the data source for the recipe as a folder on the network (Windows or UNIX) or as an FTP site on the network. The user may optionally have the recipe delete the file at the source after it has been read into the recipe.

DSA DATA SHEET

Recipe optimization – Once the engineer has developed the defect signature analysis methodology using DSA, he can automate it using AWB and test it over a wider range of samples than is practical using the manual analysis method of DSA. The sample data may be analyzed using different process variables to enable the engineer to converge on the optimum analysis results. An AWB recipe may be saved and edited at a later date.

Multiple file analysis – AWB allows the user to automatically overlay multiple wafer level and analyze them as a single file. Wafer levels may be grouped before they are overlaid; for example, wafer levels may be overlaid by process step or by wafer slot number.

Results data repository – The AWB recipe may be used to generate an inspection results database that can be analyzed and displayed by SiGlaz Defect Navigator analysis software. To write the AWB analysis results to a database that can be analyzed by 3rd party software, the AWB recipe outputs a KLARF file to a folder monitored by a Database Loader.



IDA integrates easily into the semiconductor fab process. IDA analysis recipes are inserted between the inspection tool output and the database loader. SiGlaz Defect Navigator may be used to load inspection results to the DB and to analyze the results.

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