

Application Note

DSA20060401

How to manage libraries used in
Defect Signature Analyzer

FEATURES

Wafer Pattern Signature Library

Object Signature Library

Introduction

This application note describes how to use Defect Signature Analyzer (“DSA”) to manage the following type of libraries:

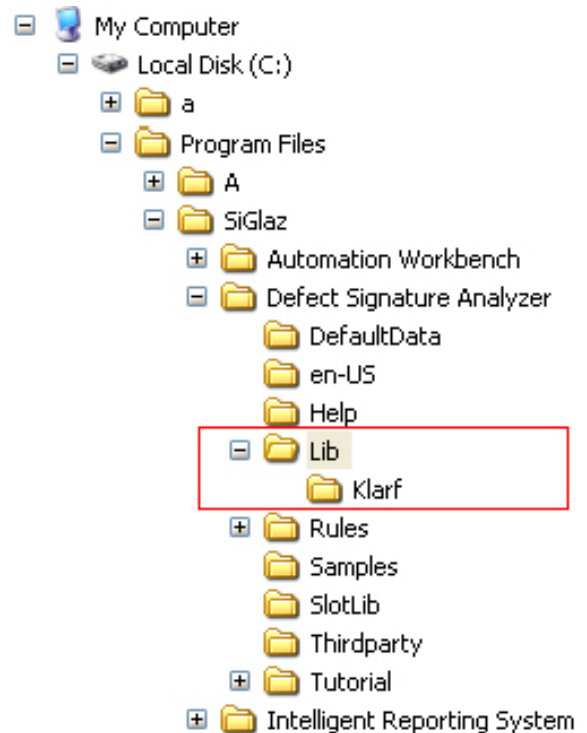
1. Wafer Pattern Signature Library
2. Object Signature Library



A. MANAGE WAFER PATTERN SIGNATURE (“WPS”) LIBRARY

An empty WPS Library is installed for the first time during DSA’s software installation. The WPS Library is located in the SiGlaz’ program files folders, see Figure 1.

Figure 1 Program Files ▶▶▶



1. Library’s components

WPS Library has two components:

- A file that stores the wafer’s defect patterns (or metadata,) is named “Klarf.lib. See Figure 2.
- A file folder that stores the wafer’s defect patterns (or images,) is named “Klarf” file folder. See Figure 3.

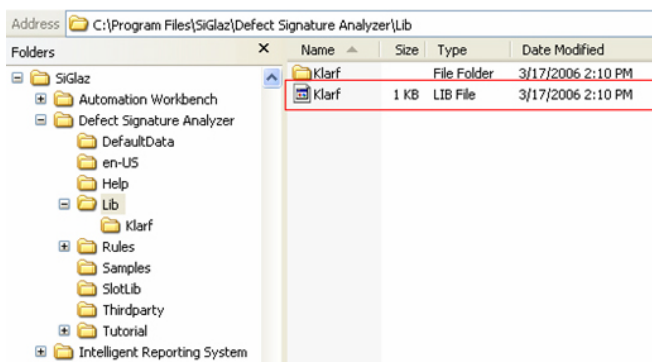


Figure 2 Klarf.lib ▲▲

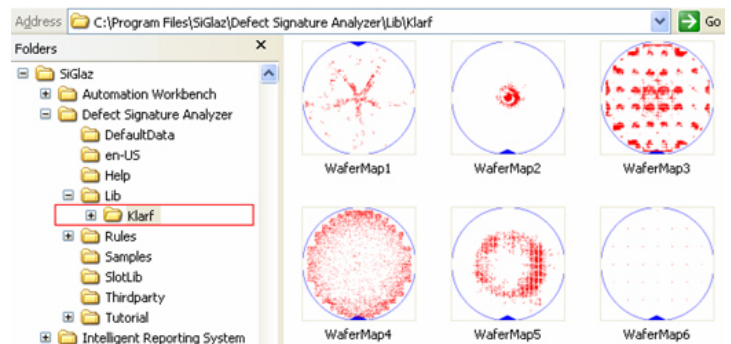


Figure 3 Image Folder ▲▲

2. Browse WPS Static Library

A static library is a library built by the defect engineers using DSA software where the classifications (or class of spatial signatures) are well defined and understood by the users. See Figure 4.

The static library's folder is located in the default folder, "C:\Program Files\SiGlaz\Defect Signature Analyzer\Klarf.lib".

See Figure 4 red box.

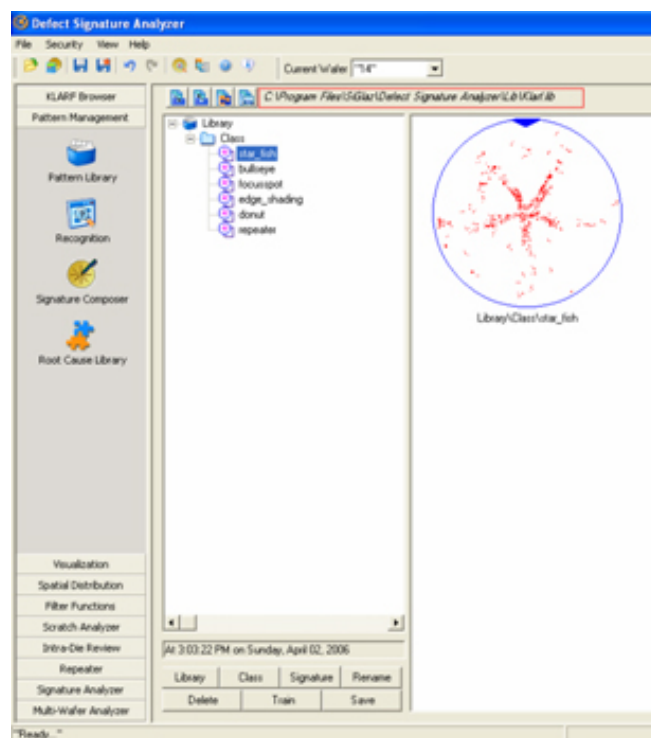


Figure 4 Static Library ►►

3. Create your own Static Library

- To create your own library, you need to locate and attach the default Wafer Pattern Signature Library in the SiGlaz' system folders where it's first installed during DSA's software installation process, see Figure 4.

- Click on Export Library, browse the new folder where you want the new library to reside in, and enter the name of the library in the Export Library dialog. See Figure 5.

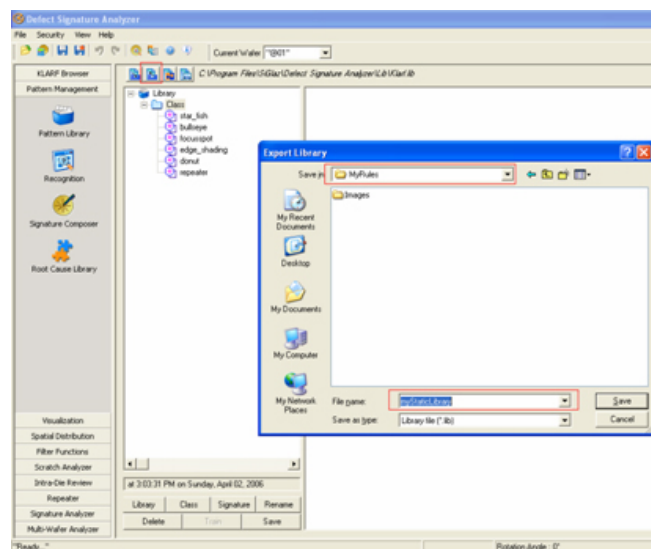
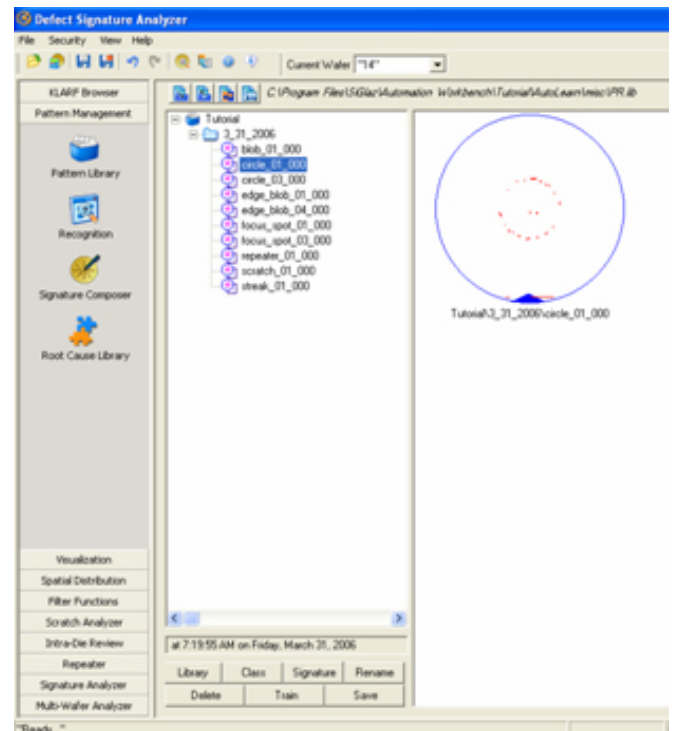


Figure 5 Export Library ►►

4. Browse WPS Dynamic Library

A dynamic library is a library built by the defect engineers using Automation Workbench ("AWB") software where the classifications (or class of spatial signatures), newly discovered and has not been classified, are automatically trained into the library at recipe execution time. The spatial signatures are unknown so they are named based on the name of data source or KLARF files at run-time, see Figure 6. The dynamic library is used in conjunction with the AutoLearn's Recipe.

Figure 6 Dynamic Library ►►►



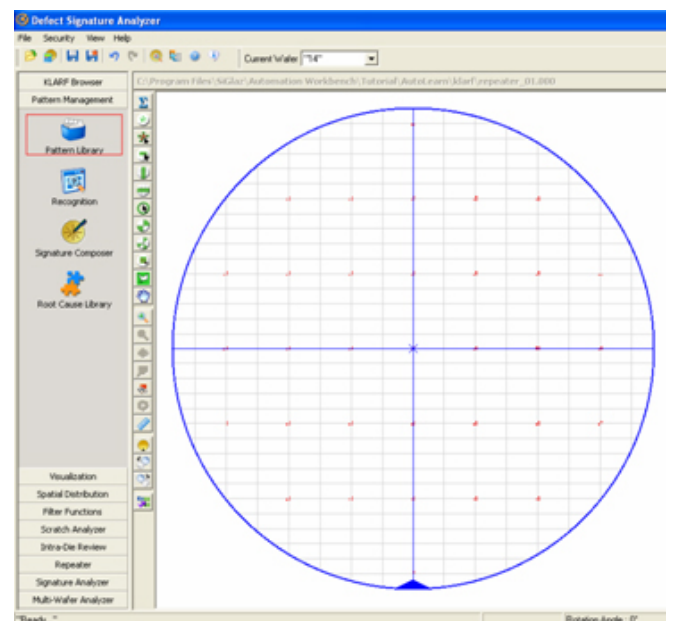
5. How to manage Dynamic Library

Dynamic Libraries used in AutoLearn's Recipe can be filled up quickly and might slow down spatial signature analysis during run-time if they are not archived on a regular interval. The archive interval is depending on the volume of analyzed KLARF files using in the AutoLearn's Recipe. The following steps illustrate the dynamic library archiving process:

a. Attach a Dynamic Library

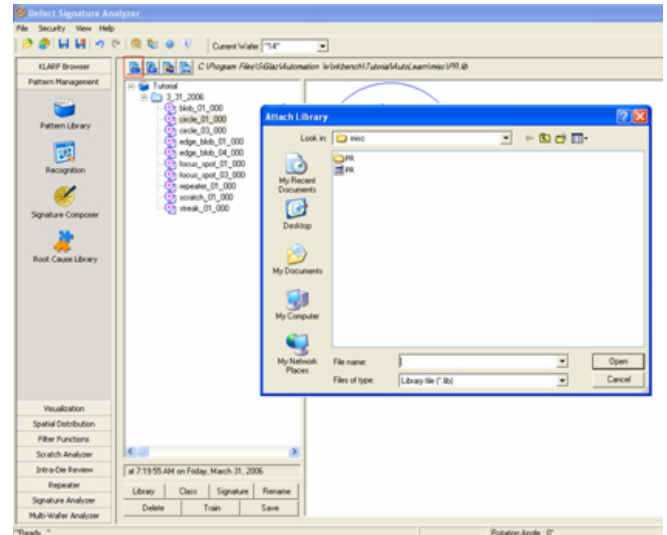
- Click on *Pattern Library* in *Pattern Management*. See Figure 7.

Figure 7 Pattern Library ►►►



- Click **Attach Library**. See Figure 8 **red box**.

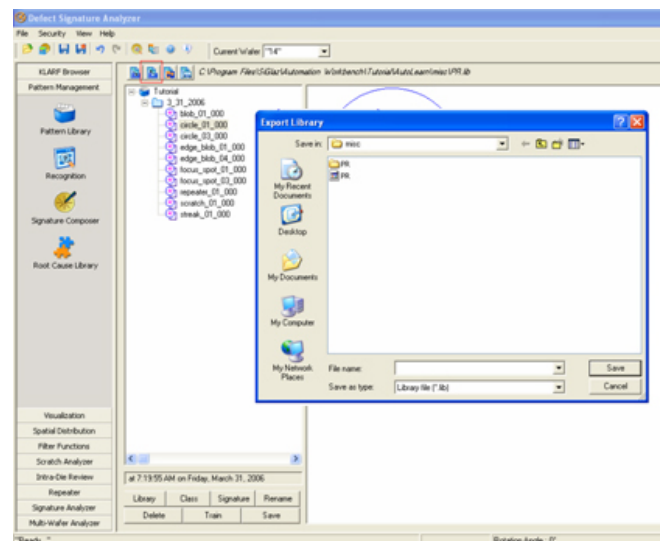
Figure 8 Attach the dynamic library ►►



b. Archive the Dynamic Library

- Click **Export Library** – Use this function to archive the dynamic library if its gets too big for processing. See Figure 9.
- Choose a folder and a file name to archive the library.

Figure 9 Export Library ►►

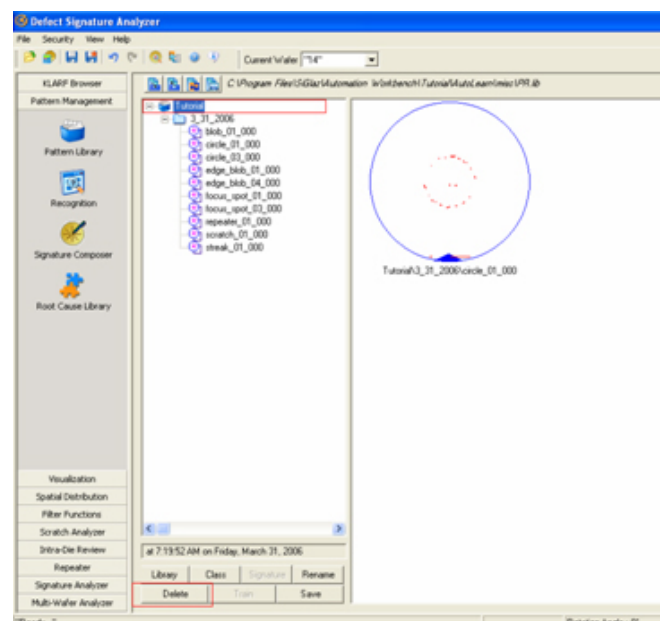


c. Clean up the Dynamic Library contents

After the Dynamic Library has been archived, the following steps show you how to delete the contents, so the physical library is empty and ready to store trained patterns from AutoLearn's Recipe.

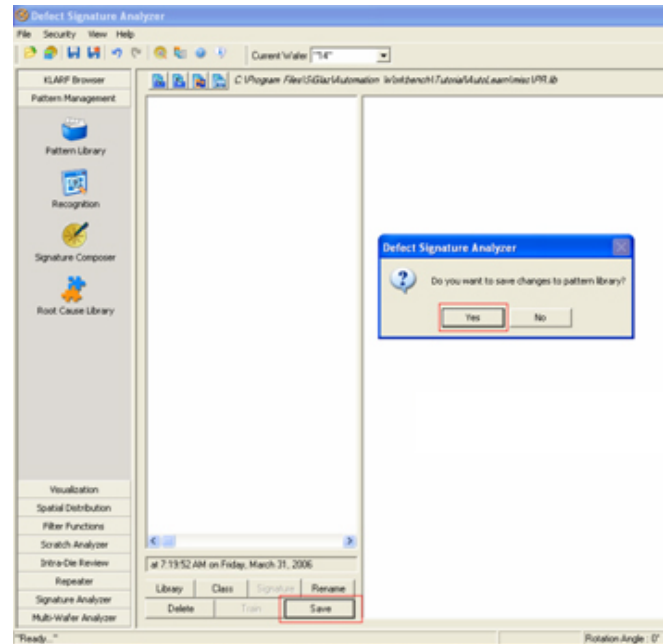
- Click on the library "Tutorial" and click **Delete** button to delete the contents. See Figure 10.

Figure 10 Delete Auto Trained Signatures from Dynamic Library ►►



- Click **Save**. See Figure 11.

Figure 11 Save Dynamic Library ►►



B. MANAGE OBJECT SIGNATURE LIBRARY

An empty Object Signature (“OS”) Library is installed for the first time during DSA’s software installation. The OS Library is located in the SiGlaz’ program files folders, see Figure 12.

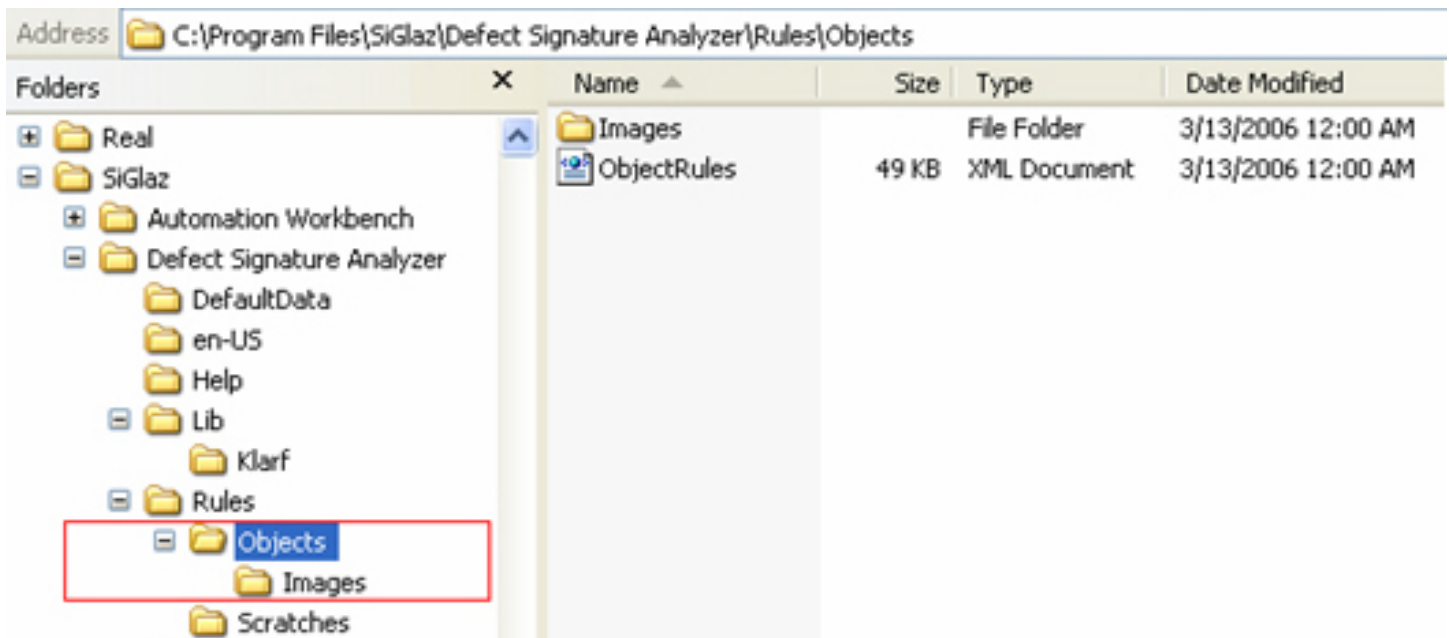


Figure 12 Object Signature Library ▲▲

1. Library's components

OS Library has two components:

- A file that stores the object signature set of rules (or metadata,) is named: "ObjectRules.XML". See *Figure 12*.
- A file folder that stores the object signatures (or images,) is named "Images" file folder. See *Figure 13*.

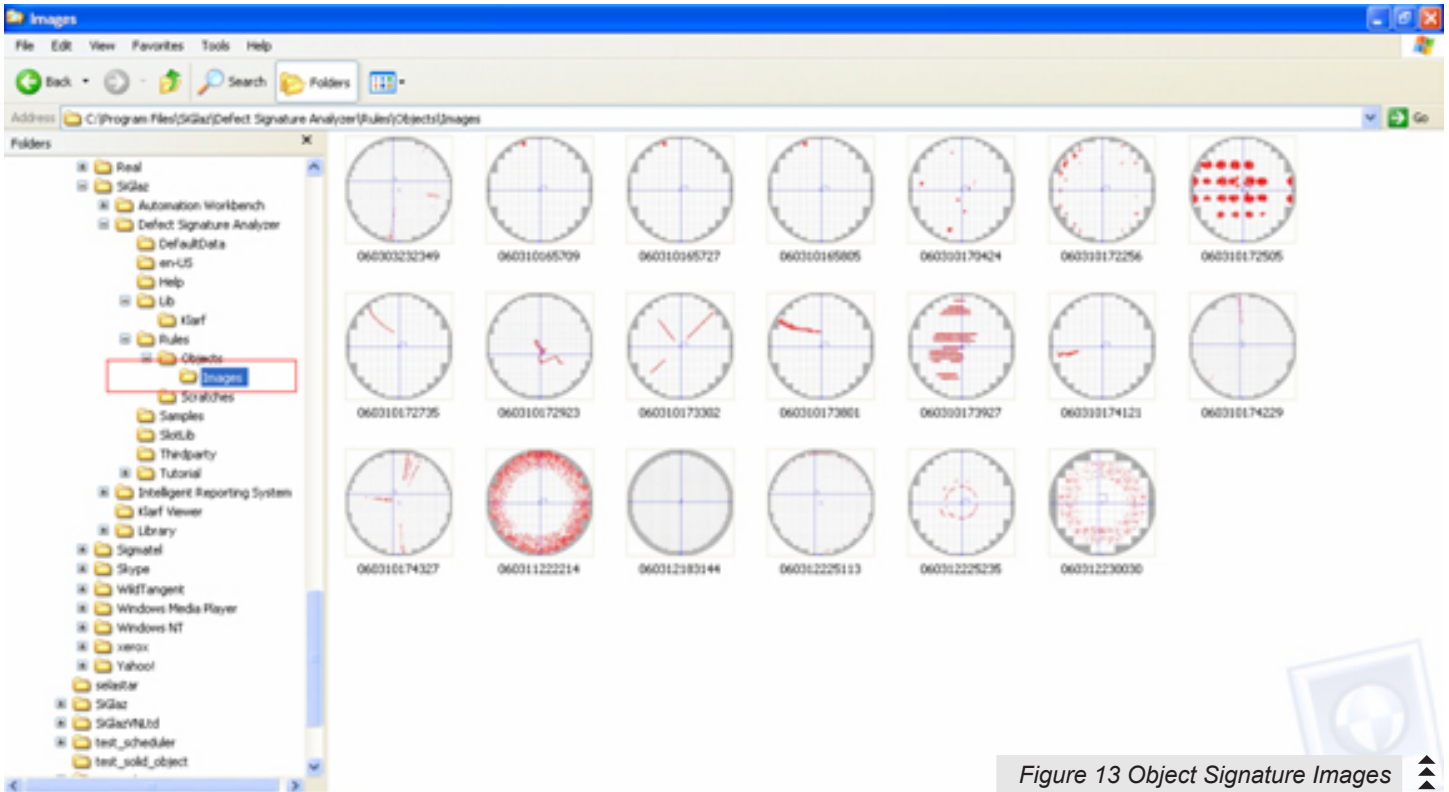


Figure 13 Object Signature Images

2. Browse an Object Signature Library

- Logon to DSA.
- Open any KLARF file.
- Click **Signature Analyzer** and the **Signature Analyzer** dialog opens up; click **Advanced** button in the **Signature Analyzer** dialog. See *Figure 14*.

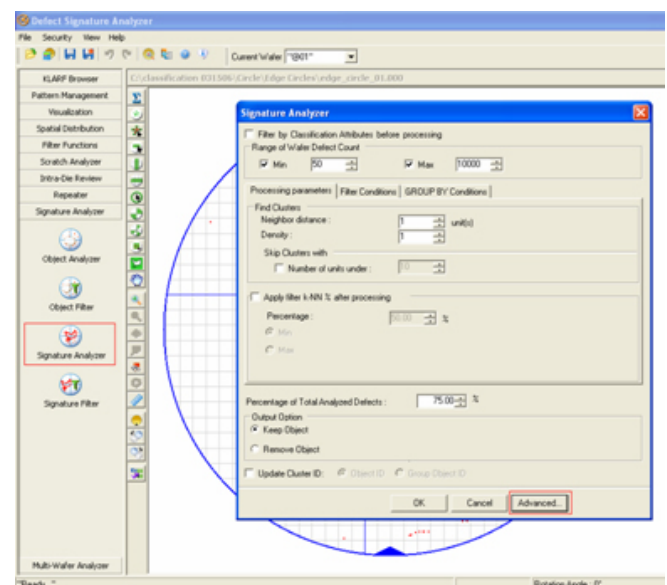


Figure 14 Signature Analyzer Dialog

- Click on the **Object Name** to view the **Object Signature** store in the library. See Figure 15.

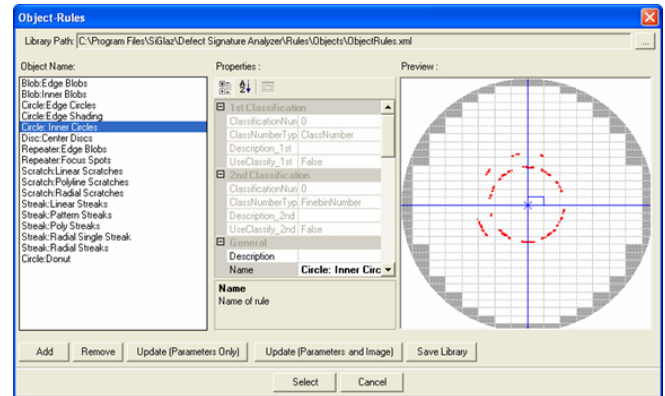


Figure 15 Object Signature Library ►►

3. Create a new Object Signature Library

To create a new library, you need to locate the default Object Signature Library in the SiGlaz' system folders where it's first installed during DSA's software installation process, copy to your private folder.

- Locate the default folder where the **Object Signature Library** is resided in:
"C:\Program File\SiGlaz\Defect Signature Analyzer \ Rules\Objects\". See Figure 12.
- Copy "**ObjectRules.xml**" and the folder "Images". See Figure 16.
- Paste "**ObjectRules.xml**" and the folder "**Images**" to your own folder. See Figure 17.

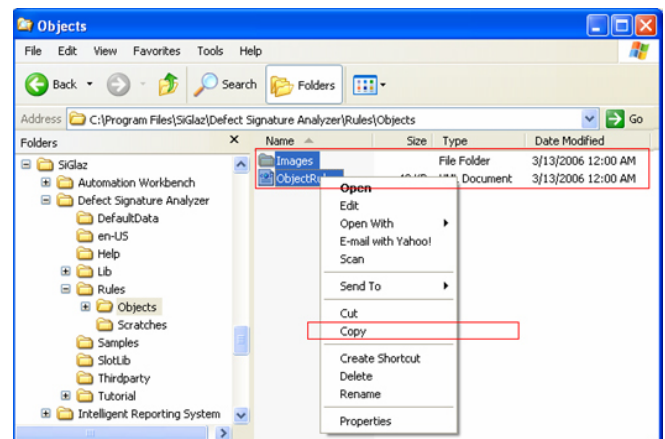


Figure 16 Copy the Object Signature Library ▲▲

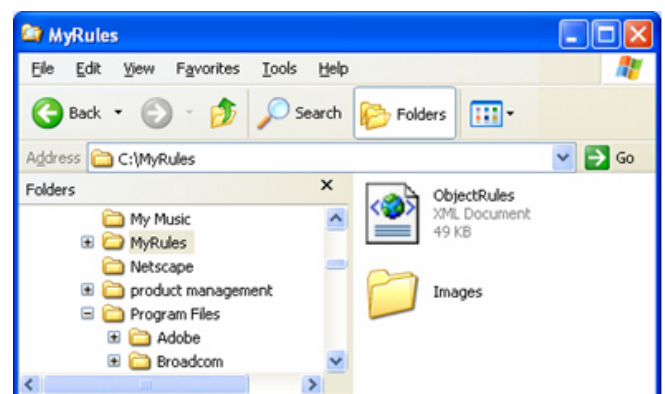


Figure 17 ▲▲

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