

Proposal for linking ATPG pattern source files to fail records in the STDF file

Since a single test can be an accumulation of multiple pattern blocks from different pattern files, a method of informing the target diagnostic tool of the sequence, offset, and original source file is required for each test. I would propose that for each TSR, in addition there is a custom GDR Record listing one or more pattern source file names in the sequence they are executed in the test., e.g.

- Pattern Source File Name #1
- [Unique File Identifier key #1] (optional)
- [Start Cycle Count] (optional)
- Pattern Source File Name #2
- [Unique File Identifier key #2] (optional)
- [Start Cycle Count] (optional)
- Pattern Source File Name #3
- [Unique File Identifier key #3] (optional)
- [Start Cycle Count] (optional)

example:

```
MyStilFile_01.stil
32FD2G2FFE57TY73
1036
MyStilFile_03.stil
6DGG54G763TG5ER8
16
MyStilFile_02.stil
8DD85GD76HE5GAH
```

The optional *File Identification Key* field has been discussed in earlier meetings as a vehicle for validating the use of the correct pattern source files by any post test diagnosis tools. The ATPG would create and insert a statement containing a unique arbitrary character string. The ATE would parse and maintain this key during pattern translation/compilation and add it to the above record .The justification for this feature is that often a pattern file will be recreated but would still utilize the same file name as before. An alternative is to utilize one of the fields in the “Header” block of the STIL file.

The Start Cycle count would be an optional field that specifies the synchronization cycle # recorded in the fail log to the 1st cycle contained in the pattern source file, If omitted it would be assumed by the diagnostic tool that the pattern precisely matches the contents of the pattern source file.

Since this GDR record is redundant for each re-execution of this TSR, it may be possibly omitted after the 1st incidence only.

To port the file identifier key information from the ATPG output, my thoughts that all ATE should have some mechanism for declaring and assigning values to public variables or constants in the test program source code. This would also apply to the STIL/WGL source file names. The 3rd party WGL/STIL translator to ATE test program will have to parse and create the ATE specific source test program code to create these variables and assign the filenames and keys. The ATE datalogger would then access these variables when creating the STDF datalog records. I would propose using the *UserKeyword* statement in STIL as per the following example:

```
UserKeywords FileID;  
FileID {gf34fg3f4g34f;}
```

WGL does not provide an equivalent feature so a comment would have to be used. Perhaps to simplify the parsing task it could be required that this be the first comment in the file, i.e.

```
// FileID = gf34fg3f4g34f
```