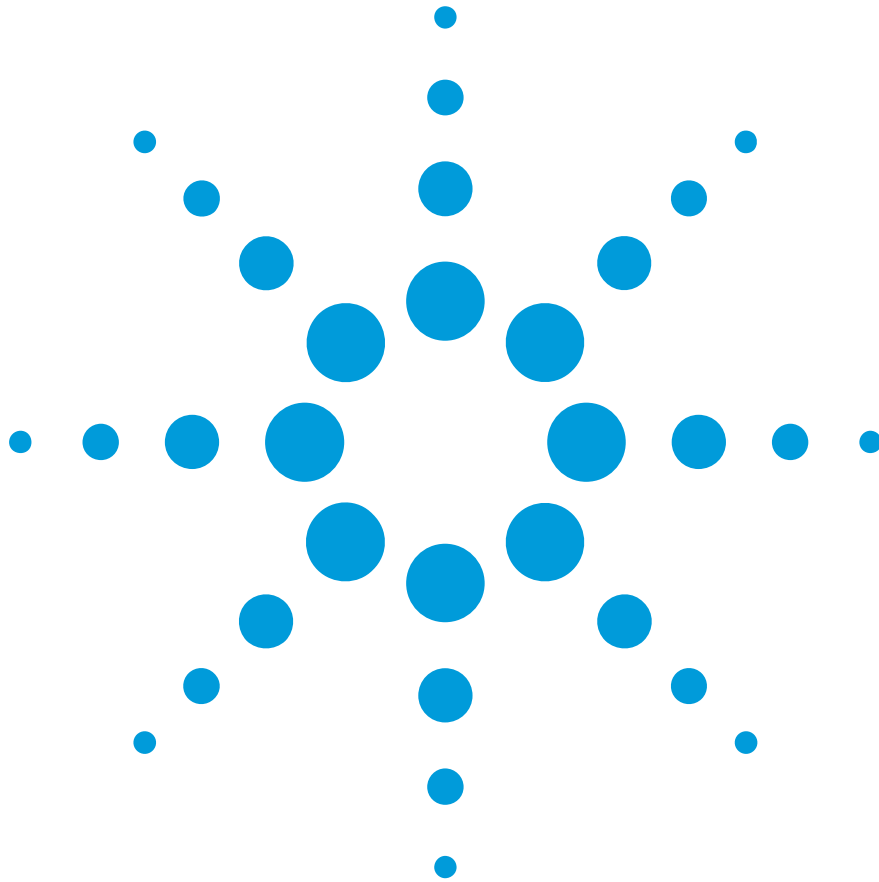


# Agilent Medalist 3070 to Medalist i5000 Migration Tool

White Paper

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## Overview

The Agilent Technologies Medalist 3070 to Medalist i5000 migration tool was created for customers who need to migrate existing Medalist 3070 test fixtures and board directories to the Medalist i5000 test system. This tool:

- Allows Agilent Medalist 3070 test fixtures to run on the Medalist i5000 test system
- Converts Medalist 3070 test files to Medalist i5000 files
- Allows Medalist 3070 fixtures and tests to be debugged on the Medalist i5000
- Provides a way to move from an older UNIX test system to a new, supportable, Windows XP-based test platform

The migration tool brings important advantages to users of older 3070 Series I and II systems.

- It removes many of the support limitations on aging test systems.
- It provides access to additional board testing capacity on existing systems.
- It allows customers to continue running boards on Agilent Medalist test systems.

This paper outlines the steps that are required to migrate the Medalist 3070 board directory to the Medalist i5000, and lists the limitations of the implementation.

## Migration Tool Description

The Medalist 3070 to Medalist i5000 Migration Tool (the "migration tool") is a contributed Perl script included with the Medalist i5000 software. It resides in the "/Agilent\_ICT/contrib/bin" directory and is named "A3070toI5000.pl". It allows customers who currently have Agilent Medalist 3070 WN systems in their manufacturing environment to migrate their 3070 board directories so they run on the Medalist i5000 platform. The migration tool gets customers approximately 90 percent to 95 percent of the way to a fully working Medalist i5000 board directory.

### Key Requirements for source directory

For the migration to work, the source Medalist 3070 board directory must meet one of the following requirements. Either the directory was:

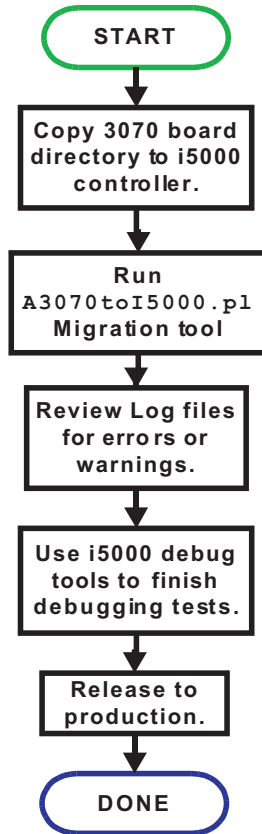
- fully developed on the Medalist 3070 Windows (PC) platform, or
- converted from a UNIX 3070 system using the Conversion tool (ctool.ksh).

Also, it should be a directory that runs on the Medalist 3070 Windows testhead. If it is not, debug time for the tests and fixture will take much longer.

The migration tool will not work on a UNIX 3070 board directory it must be a PC version board directory. Note that the conversion tool is not shipped as part of the Medalist i5000 software. You must use the conversion tool that is available for the UNIX controller (cTool.ksh) to create a package file (.cvt) for the board directory, transfer it to a Medalist 3070 PC controller, extract it and debug it on the Medalist 3070 WN testhead. Also note that the Medalist 3070 WN and the Medalist i5000 are NOT interoperable because their testheads use different hybrid pin cards that require different object file formats.

After the migration tool completes, it's up to the user to debug the Medalist i5000 version of the board directory using Medalist i5000 debug tools. For more information on the migration tool, refer to the "/Agilent\_ICT/contrib/doc/A3070toI5000.doc" file.

## Migration tool flow



**Figure 1.** Simplified Medalist 3070 to i5000 Migration Tool Usage Flow

The first step in migrating an existing Medalist 3070 WN board directory to the Medalist i5000 is to copy the board directory from the 3070 PC to the i5000 controller, or to a development PC that is running the Medalist i5000 development software. You must use 'tar' from a MKS shell window on the Medalist 3070 system to create an archive file. This will preserve links in the board directory for panelized boards. Then copy this tar file to the Medalist i5000 controller and extract the board directory from the archive. The Medalist i5000 GUI provides this capability: simply go to the "Administrator" screen and select the "Copy Board Directory" task. You will need to select the source and destination directories for the copy by browsing to those locations on the GUI.

## Running the migration tool

The next step in the migration process is to run the migration tool itself. To do this, open a MKS shell window. At the shell prompt, type "A3070toI5000.pl" and press Enter. You will see text similar to the window shown in Figure 2. The current directory is where the migration will place the Medalist i5000 version of the board directory. Before running the migration tool, it's recommended that you change the directory to the "/Agilent\_ICT/boards" directory, which is the default Medalist i5000 board directory.

```
A3070toI5000.pl
Agilent 3070 to Agilent i5000 Migration Tool
Revision: 00.07 July 22, 2005

For best results, execute this tool from an i5000 Korn shell window.

Conditions of Use:
The current directory path is set to where you want the migrated board
directory to be placed.

The 3070 directory to be migrated
- MUST NOT be located at the same directory level where you want the
migrated board directory is to be placed.
- MUST already be executable on a 3070 WN system.
- MUST contain all sub-directories including libraries.

Directory paths used MUST conform to 3070/i5000 naming conventions.
- Illegal directory path characters are "\" and space
- Spaces within the entire directory path name will cause a Path Error!

CURRENT DIRECTORY PATH:
C:/Agilent_ICT/boards

Do you meet the conditions of use? <Enter y/n>
```

**Figure 2.** Example of A3070toI5000.pl output

### 1. Meet conditions of use

As you run the script, you will be asked the question, "Do you meet the condition of use?" This question is intended to determine if you meet the requirements for migration, specifically:

The 3070 and i5000 board directories cannot exist in the same directory.

The 3070 directory must be from a 3070 WN (PC) system.

The 3070 directory must contain all sub-directories including libraries.

Files and directories cannot contain illegal characters such as ":" and spaces

If these conditions are met, type "y" for yes.

## 2. Create the Medalist i5000 directory

You will be prompted to enter the path to the Medalist 3070 WN board directory. This can be either a full or relative path to the directory. The migration tool will then make a backup of the Medalist 3070 board directory to a "tar" file named "<board\_dir>\_A3070bkup.tar". This file will be removed if the migration tool completes without errors. Note that the original Medalist 3070 board directory remains unchanged.

The migration tool performs the following tasks on the Medalist 3070 WN board directory to make it a Medalist i5000 board directory:

- Modifies the "config" file to meet i5000 syntax and capabilities
- Creates and compiles a "fixture\_defaults" file
- Modifies the "board" file to meet i5000 syntax and capabilities
- Makes a backup of any test marked permanent in the "testorder" file
- Makes a copy or backup of certain key 3070 files (for example, the 3070 "testplan" file will be backed up as "testplan\_A3070")
- Modifies the digital library and digital test files to meet i5000 syntax and capabilities
- Modifies the "wirelist" and test source files to meet i5000 syntax and capabilities
- Compiles all tests to generate i5000 test object files

NOTE: For a more detailed list of the tasks performed by the migration tool, please read the comment section at the beginning of the "/Agilent\_ICT/contrib/bin/A3070toI5000.pl" file.

## 3. Review log files

Assuming the migration tool completed without errors, the next step in the process is to look at the log files to determine if there are tests requiring additional debug (for example, digital tests that used drive offsets that are not compatible with the Medalist i5000); tests that have not been migrated; and tests that will require fixture wiring additions (for example, analog functional tests using differential voltage sources). The migration tool will create the following log files:

- A3070toI5000\_trace.log contains the information related to all the actions the migration tool performed (both passing and failing). In particular, look at the end of this file for a list of requirements files (\*.r) that will need additional attention.
- A3070toI5000\_summary.log contains a summary of all passing actions the migration tool performed.
- A3070toI5000\_details.log contains detailed information from all of the compilers that were run on the files in the migrated board directory.

Review these log files for error messages from the tool or to see if there is additional work that must be done to increase coverage on the board directory to return it to the level of coverage it achieved on the Medalist 3070. Remember, the migration tool alone will not get you 100 percent to a final Medalist i5000 board directory. However, it will get you most of the way there fairly quickly without a lot of manual file editing and compiling.

#### 4. Debug new board directory

Once the migration tool completes without error and any desired changes are made to the test files, you can use the Medalist i5000 to debug the new board directory. Start the Medalist i5000 software on the i5000 testhead and use "File Open" to browse to the migrated board directory. The Medalist i5000 software will connect to the testhead and load and run the migrated testplan file. To debug the board, press the "Stop" button on the GUI and go to "Actions Login" or press the "F9" function key on the keyboard to log-in to the Engineer debug screen on the Medalist i5000 GUI. Once there, you can debug pins, shorts, analog in-circuit, and TestJet/VTEP tests. You can also launch the Push-Button debug application to debug powered tests such as digital, analog functional, and mixed tests by going to "Launch Pushbutton Debug" or pressing the "F12" function key on the keyboard.

#### 5. Release to production

After all debug is complete on the migrated board directory, the resulting Medalist i5000 board directory can be released to production

#### Limitations of the Migration Tool

Since the Medalist i5000 has a different set of capabilities than the Medalist 3070, there are some things that the migration tool cannot do. Here are some of the limitations to consider:

When you load the migrated board directory into the development screen of the Medalist i5000 GUI, it will indicate that no steps have been done. This will happen on the first task of the Configuration phase of the GUI. To properly clear this up, you should step through the entire development process, saving information to the board files and updating the fixture information until the development process is complete. This will create the necessary "ProjectStatus.xml" file so that the Medalist i5000 GUI knows what state the board directory is in.

AccessPlus cards are not supported on the Medalist i5000 and as such, the migration tool will not complete successfully if the Medalist i5000 board directory has an AccessPlus card installed in the "config" file. The user must remove any reference to the AccessPlus in the "config" file and any AccessPlus connections in the wirelist and test source files.

ScanWorks tests are not migrated. This will be left up to the user.

ConnectCheck and MagicTest tests are not supported on the Medalist i5000 and therefore will not work.

Due to the analog bus structure on the Medalist i5000, sense wires for analog in-circuit tests on the 3070 could be in conflict on the i5000. The migration tool handles this conflict by using "scanner sensing" on the Medalist i5000 for those connections that are in conflict. The test should still be capable of being debugged, but some high precision or very low value resistor tests may require

that wires be added to the test fixture. The same is true for some analog functional tests that use differential voltage sources. More information regarding the Medalist i5000 analog bus structure can be found in the “Analog Bus Structure on the Agilent Medalist i5000” white paper.

Tests using the instrumentation connected to the external ports on each module may not function properly. The new Medalist i5000 architecture includes un-multiplexed hybrid pin cards, which reduce the bandwidth of the coaxial port to hybrid channels.

Escape characters used in the Medalist 3070 testplan will not display correctly on the Medalist i5000 Operator GUI. You can use the “localize\_testplan.ksh” program to fix these. Generally, no escape sequences are supported by the Medalist i5000 GUI. The output area on the Medalist i5000 GUI supports only HTML tags on text output. You may want to convert any escape sequences in the testplan to HTML to get the effect you want.

The Medalist i5000 uses the testorder file to control test execution. This is similar to how the testorder file controls test execution on the Medalist 3070 for multiple board versions. The testplan, however, is not converted by the migration tool to match the actual Medalist i5000 testplan output. The actual testplan output from the testplan writer program on the Medalist i5000 will have device test statements similar to this:

```
test `r35`
```

The testplan from the migration tool will still have the Medalist 3070 syntax of :

```
test `analog/r35`
```

This is not a problem, the test will still execute, but it does not match the true syntax that would normally be produced.

The Operator Interface Localization (OIL) feature on the Medalist 3070 uses a different “first pass yield” syntax than the Medalist i5000. The i5000 syntax is:

```
first pass yield <passed this run>, <tested this run>
```

For example, if you had a single board fixture, the syntax in the testplan would look like this:

```
if boardfailed then
  first pass yield 0, 1 ! zero passed, one
  tested this run
else
  first pass yield 1, 1 ! one passed, one
  tested this run
end if
```

Note that the Medalist i5000 will automatically keep track of the first pass yield for you. You are not required to have extra code to save the first pass yield numbers to a file.

This is a “contributed” program to help with the migration of Medalist 3070 board directories to the Medalist i5000. This program does not have the same level of implied support as the Medalist i5000 executables.

Remember, the Medalist i5000 and the Medalist 3070 are not interoperable. That means you cannot get the same board directory to work on both types of test systems. A migrated Medalist 3070 board directory can work only on the Medalist i5000. If your manufacturing floor supports a file server for all your board test programs, you must have separate directory paths for both test platforms.

## Conclusion

The Agilent Medalist i5000 provides an easy-to-use graphical user interface and automated debug for analog in-circuit and TestJet/VTEP tests useful features for manufacturing production line running boards on the Medalist i5000. By using the Medalist 3070 to Medalist i5000 migration tool, you can take advantage of this new debug environment and provide a more flexible tester utilization strategy for your manufacturing test requirements.

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