# Mentor to Adiva Interface (Quick-Start User Guide)

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#### Notice

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#### **Preparing Mentor Boardstation**

- Make sure the Mentor design directory is located such that it **DOES NOT** contain a space in the path or in any filename.
- Mentor's Geometry *artwork\_order* is the key definition of the artwork stackup used by the interface. The *artwork\_order* must be created such that the circuit layer order is the same as the board stackup.

This means that the circuit layers are to be in the same order in which they are to be assembled. Circuit layers are defined as layers containing either *SIGNAL\_x* or *POWER\_x*.

The layer order number does not need to be sequential. In the following chart, the first circuit layer in the *artwork\_order* geometry (sorted by layer order number) is **assumed** to be the top layer of the board, the second circuit layer entry is the second layer of the board, etc., etc..

**Note:** In the following chart, layer order numbers 2, 7, 9, 11, and 15 are missing from the geometry as well as non-circuit layers are mixed with the circuit layers. This is not a problem.

To reiterate, the critical item is that the circuit layers are in the **SAME SEQUENCE** (sorted by layer order number) as the artwork stackup.

#### **Preparing Mentor Boardstation**

Example 'artwork\_order' geometry...

Layer Order	Physical	Logical			
Number	Layer	Layer			
1	1 SIGNAL_1, PAD_1				
3	2	SIGNAL_3			
4	N/A	SOLDER_MASK_1			
5	3	POWER_1			
6	4	POWER_2			
8	N/A	SILKSCREEN_1			
10	N/A	SOLDER_MASK_2			
12	5	SIGNAL_4			
13	N/A	PASTE_MASK_1			
14	6	SIGNAL_2, PAD_2			
16	N/A	SILKSCREEN_2			

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- After an initial menu selection, usually no more than two to three button clicks are needed to extract Gerber & Drill to build the ADIVA database and run Netlist Compare providing connectivity analysis.
- Depending on board size and layer count, this process could take a few seconds to a few minutes to complete.
- Gerber and Drill files are placed into a newly created directory called **~mfg/DRC\_jobname** where: "jobname" is the Mentor design directory name.
- Basic flow of the interface is....

Start Interface

- >>> Adjust artwork naming, layer assignment or declare Fiducial assignment
- >>> Choose data output type for Gerber
- >>> Choose data output type for Drill
- >>> Watch Adiva appear on screen and produce Net Compare results when conversion completes.

<mark>, Fablink - D:/mentor_jobs/metr</mark> <u>M</u> GC <u>File G</u> eometries <u>S</u> et	ic_test up <u>C</u> heck <u>R</u> eport	<u>Properties</u> <u>V</u> iew	<u>H</u> elp S <u>u</u> pport	ADIVA
Selected: 0 Check On Compo Delta: -15.24, 17.78 Ab	nents: 94 (0) Traces s: 208.28, 91.44	s: 374 (0) mm Grid: X 2.5:	4, Y 2.54	Version 4.06c - ADIVA INTERFACE
				Select Violation Type (CTRL-V) First Violation (CTRL-F) Next Violation (CTRL-R) Previous Violation (CTRL-R) Last Violation (CTRL-L) Go To Violation Number (CTRL-G) Go To Violation Number (CTRL-J) Violation Details (CTRL-D)
			•	Tay Violation (CTRL-1) Untag Violation (CTRL-0) Alter Violation Tays (CTRL-a) Save Tagget Violations

Open Mentor Fablink and select DRC Wizard to start the conversion process

This is the typical (and default) processing scheme for the Mentor to ADIVA Interface. This dialog appears right after the menu selection for **DRC Wizard**. In most all cases, no changes need to be made in the default mode, just select OK to continue the process....



If an ADIVA database has already been created, the Existing ADIVA Data option will allow the user to open the existing data for analysis without having to "re-build" from scratch generating new artwork and drill data



There are a few specific items that may need to be reviewed or adjusted before data conversion begins

ADIVA DRC Wizard Create New ADIVA Data Use Existing ADI Gerber Data: Drill Data: Create New Create New Use Existing Use Existing Report Windows: Retain	IVA Data pe: Panel	Th <b>Pr</b> i If c adj	ese are the default imary Artwork Lay different than these justed before data o	names for supp <b>ers</b> defaults, names conversion for p	oorting artwork a need to be roper identification
Customization: Execution M		-	Translation Layer	Cross-Reference	ce
Artwork Layer Component Types	Design	Layer	Primary Artwork Layer	Component Assembly	ly Data
Layer Definition	Solder Mas	к Тор:	SOLDER_MASK_1	Body Outline:	
OK Reset Cancel	B	ottom:	SOLDER_MASK_2	Generic Laver	Graphical Attribute
;	Solder Past	е Тор:	PASTE_MASK_1		
	В	ottom:	PASTE_MASK_2	Choose a Pre-Define	ed Layer: 수
	Silk Scree	n Top:	SILKSCREEN_1	ULINGUILLI	17
	B	ottom:	SILKSCREEN_2	Or Enter a User-Def	fined Layer:
	Board O	utline:	BOARD_OUTLINE		
	Ca	ution: (	Clicking OK or Default	will reset ALL Layer	Definitions
			OK Default	Reset Cancel	

ADIVA DRC Wizard	easy identification. In order to perform s design checks however, ADIVA needs to which items in the design are Fiducials.
Gerber Data:     Drill Data:     Output Type: <ul> <li>Create New</li> <li>Create New</li> <li>Use Existing</li> <li>Use Existing</li> <li>Report Windows:</li> <li>Retain</li> <li>Close</li> </ul> Output Type: <ul> <li>Output Type:</li> <li>Report Windows:</li> <li>Close</li> </ul> <ul> <li>Close</li> </ul> <ul> <li>Close</li> <li>Close</li></ul>	Enter the Mentor Geometry names for F which will signal to ADIVA which items a allowing specific checks to be run again
Customization:       Execution Mode:         Artwork Layer       Component Types         Layer Definition       Fiducial Definition	
OK Reset Cancel	fiducial Geometry Names
	OK Reset Cancel

Fiducials do not carry a "value" in Mentor for o perform specific VA needs to know Fiducials.

ames for Fiducials nich items are Fiducials e run against them.

Next comes the **Artwork Creation** dialog from Mentor. Below is the typical setup for Gerber output.

There are two choices for how to construct "Area Fills" and "Polygons" in Mentor output. For best ADIVA performance, construct these items with "Flash" data as shown.

		Create	Artwork Data		
File Format Gerber Gerber 27 Area Fill Poly Stroke Area Fill Flash Area Fill	4X Specify Polygon Stroke Polygon Flash Polygon	Character Set ASCII EBCDIC EIA	Output Type	Step & Repeat Panel	Multi Layer Panel
Tear Dr	◆ ops not Allowed Tear	Drops Allowed	<ul> <li>Remove Unused Pins</li> <li>Remove Pins With No Ne</li> <li>Output All Pins</li> </ul>	ts	ad Hole
		~	<ul> <li>Remove Unused Vias</li> <li>Output All Vias</li> </ul>		
		Resize Artwork	k Rescale Artwork		
		OK Reset	Cancel Help		

After Artwork Generation, the Mentor Drill Output dialogs appear. The selections shown below are the typical selections for drill data output. These dialogs will appear one after the other.

**Do Not** select the "Both" category for Drill Hole Types – ADIVA needs plated drills separated from Un-plated drills.



When the conversion process completes, the ADIVA DRC Analysis tool will appear on the screen



Once the Adiva database has been created, displayed and the "Process Finished" message posted, there are several processes that can be performed:

**CAD Netlist Compare** happened automatically. Select the NetCmp tab in the action display to view results of this function. See the **CAD Netlist Comparison Guide** for further details.

**AdivaView** can read and display this database. It is saved and exists in the DRC\_jobname directory created under the Mentor job's "mfg" directory. Its filename format is "DRC\_jobname.adi" *Where:* "jobname" is the Mentor filename and ".adi" is the ADIVA filename suffix.

DRC Analysis checks can be performed on this data looking for design rule violations. See the **Running DRC Checks Guide** for further details.

Once the Adiva database is created, Mentor Fablink can be closed if desired as there is no required connection needed for Adiva to function if the **detached process** is chosen.

It may be an advantage to open **Mentor Designer** for violation link-back of items found by Adiva into Mentor Boardstation. That way, a designer can repair a violation in real time. See the **Linking Violations Back to Mentor Boardstation Guide** for further details.

This completes the **Mentor to Adiva** Interface.

## END Mentor to Adiva Interface (Quick-Start User Guide)

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