



Test Builder & Test Executor

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Socorro, December 12, 2007



Outline

- Quick overview.
- When are these tools needed ?
- Requirements for the various stages of testing.

Test Builder

- Test Builder is a GUI based tool that will be used to create a configuration for a test or observation.
- Output of Test Builder is an XML file that contains:
 - 1. Test (Observation) ID
 - 2. System Time (optional)
 - 3. Observation Time (optional)
 - 4. Duration (optional)
 - 5. List of Boards and Baseline Boards, and configuration for each board.
 - 6. Backend configuration.
 - 7. Antenna table, which for each Station Board specifies the antenna which is source of input data. Antenna Table may also contain antenna parameters that are used by Backend.
 - 8. Directory where to save output files.
 - 9. Prefix for output files (i.e. files where output of the Station Board and Baseline Board is saved).
 - 10. A set of golden files to be used for Intelligent Diff.
- Test Builder allows user to open existing test configuration file, modify the configuration and save it; either in the same or in a new file.

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Test Builder GUI

System Time : • UT • Local yyyy-mm-ddThh:mm:s								
			Observ	ation Time : 🖲	Use system ti	me of the target systems		
Obs	servation ID: MyF	irstObservatio	n Fixed yyyy-mm-ddThh:mm					
	Duration:	15	Prefix for ou	tout file names:	prefix		1	
			 Store ou 	itput files in dir:	OutputFilesDirectory		Brows	
			Perform	Intelligent Diff	GoldenFiles		Brows	
				g				
ſ	Type	Board ID	Dest. IP Address	1	File Na	ame		
ŀ	StationBoard	1-0-0	192.139.1.1	myFirstObs/St	b2BB16Sb-0.;	xml	╵┻╢	
-	StationBoard	1-0-1	192.139.1.9	myFirstObs/St	b2BB16Sb-1.;	xml		
·	StationBoard	1-0-2	192.139.1.17 myFirstObs/Stb2BB16Sb-2.xml 192.139.1.25 myFirstObs/Stb2BB16Sb-3.xml					
	StationBoard	1-0-3						
	BaselineBoard	1-0-4	192.139.1.34 myFirstObs/Blb2BB16Sb1prod64lags.xml					
-	AntennaTable n/a Backend Na		192.139.200.4 corrProto/AntennaToStb-4Ant.xml					
ľ			192.139.200.4 myFirstObs/Cbe4St2Bb16Sb1prod.xml					
Bas Pha STI Bao Ant	selineBoard asingBoard B FORM ckend tennaTable		▲ 					
	Add row	Delete row			Browse			
-			Comm This text	ent is added to the	output XML fil	e as a comment.		

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Test Executor

- Test Executor is a GUI based tool that takes as input test Configuration file created by the Test Builder and executes the test.
- Execution of a test includes:
 - Sending configuration to subsystems (Station Boards, Baseline Boards, Backend, etc),
 - Setting system time on all the subsystems (that are part of the test),
 - Starting "listener" tasks to capture output data and create output files.
 - Sending "start" command when all the subsystems are ready (or at activation time).
 Exact functionality TBD.
 - Sending "end" command at the end of test (defined by duration).
 - Starting Intelligent Diff if required.
- Test Executor enables user to select a list of the previously created Test Configuration Files and execute them either immediately or at the specified time.



Test Executor GUI

Execute Sele	cted Tests	Syst Observa Activati	em Time: ation Time: on Delay:	2007-11-23T12:01:12 2007-11-23T12:01:12 10	• UT	🔿 Local	Rack 001 Backend	
Stop Test E	xecution	Curr All Selecte	ent Test:	Remaining Time 00: 00:	12 58		Open Test Bulder	
Observation ID	Test Confi	guration	Execute	Config Time	Duration	IntellDiff	Status	
Test4-2St2Bb	Test4-2St2E	3b.xml		2007-11-23T12:00:59	15		Running	
Test4	Test4.xml		Г	2007-11-23T10:53:30	5	J	Completed - Failed	
Test4	Test4.xml.x	ml		2007-11-23T10:53:45	5		Completed - Failed	
Test4	Test4.xml			2007-11-23T10:54:00	5	<u>ح</u>	Completed - Failed	
Test4-2St4Bb	Test4-2St4Bb.xml			2007-11-23T11:24:00	21		Completed - Success	
Test2-2St2Bb	Test2-2St2Bb.xml		ব	2007-11-23T11:26:34	10	Ľ	Completed - Outcome Inconclusive	
Test2-2St2Bb	Test2-2St2Bb_a.xml		ব	2007-11-23T10:14:34	10		Completed - Outcome Inconclusive	
Idle	CorrelatorIdle.xml				0			
Test5	Test5.xml		V		5			
•								▶
	Brow	se	Toggle	Add row	Delete ro	w		
Log • L 2007-11-23T11:26:3 2007-11-23T11:26:4 2007-11-23T10:26:5	-og to file in o 4 Test2-2St2Bb 15 Test2-2St2Bb 15 Test2-2St2Bb	directory	/widar/tes	stLogFiles/	rowse			
2007-11-23T10:26.5 2007-11-23T12:00:5 2007-11-23T12:01:0	55 Test2-2St2Bb 59 Test4-2St2Bb 99 Test4-2St2Bb	 Outcome in Started re-c Sending sta 	conclusive (onfiguration irt command	Intelligent Diff not requi	red)			

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WIDAR Test Builder & Test Executor



System Status

- GUI that monitors WIDAR status will be provided as a standalone tool, and may be integrated with Test Executor.
- System level GUI will display overall status for :
 - Station Racks,
 - Baseline Racks,
 - Backend,
 - MCCC,
 - CPCC, etc.

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WIDAR Rack GUI

$\Theta \Theta \Theta$				١	VIDAR Rack #0			
0	1	. 2 .	3	4	5	6	. 7	
Power Board	Power Board	Power Board	Power Board	Power Board	Power	O Power	O Power	
Comms Reset	Comms Reset	Comms	Comms Reset	Comms	G Comms	Comms	<table-cell> Comms</table-cell>	
? config ?	? config ?	? config ?	? config ?	? config ?	? config ?	? config ?	? config ?	Tue Sep 11 11:43:56 MDT 2007: refresh(): <error> element(s) found in refresh XML :</error>
								 - SYSMON Device Open FAIL
192.139.21.77	192.139.21.93	192.139.21.152	192.139.21.153	192.139.21.154	146.88.2.43	146.88.2.44	10.88.0.107	
Unknown	Unknown	Unknown	Baseline	Baseline	Unknown	Unknown	Unknown	Crate 0 Clear
0	1	2	3	4	5	6	7	Slot 1
Power Board	Power Board	Power Board	Power Board	Power Board	\varTheta Power	O Power	O Power	Tue Sep 11 11:43:57 MDT 2007: XML from server did not contain a <compon ent> element.</compon
Comms	Comms	Comms	Comms	Comms	\varTheta Comms	\varTheta Comms	😝 Comms	Slot 3
Reboot	Reboot	Reboot	Reboot	Reboot				 - SYSMON Device Open FAIL
? config ?	? config ?	? config ?	? config ?	? config ?	? config ?	? config ?	? config ?	 Slot 2
192.139.21.77	192.139.21.93	192.139.21.152	192.139.21.153	192.139.21.154	146.88.2.43	146.88.2.44	10.88.0.207	ent> element.
Unknown	Unknown	Unknown	Baseline	Baseline	Unknown	Unknown	Unknown	Crate 1
								Comm Window Refresh

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WIDAR Test Builder & Test Executor

Requirements

- As soon as possible (Q1 2008) Board GUIs and CMIB software should be upgraded to provide the following :
 - configure a board (or a subset of devices on the board) using previously created configuration file.
 - Start / stop test execution.
- Test Builder & Test Executor are required for the following phases:
 - Stage 3 testing (14 Station Boards and 14 Baseline Boards). April 2008. Minimum requirements for Stage 3: ability to configure Station Boards, Baseline Boards, start "listener tasks" that create output files and execute Intelligent Diff at the end of the test. April 2008
 - Critical On-The-Sky Testing. August 2008. At that time Backend and SDM should be integrated into Test Builder & Test Executor. Integration with SDM may be required earlier, if hardware is delivered to VLA (possibly June 2008).
 - Board testing at manufacturer's site. December 2008
 A standard test suites will be created in DRAO that will be used for testing of boards after full production. Full automation will be needed at that time.

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- Requirements have been described in the DRAO document "Software Requirements for the Testing of the Board Prototypes".
- Test Builder & Test Executor will be implemented by Kevin Ryan.
- Need to refine the list of requirements taking in consideration schedule.
- Implementation to begin in January or February 2008, depending on the need to support Stage 2 testing.



The End

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