

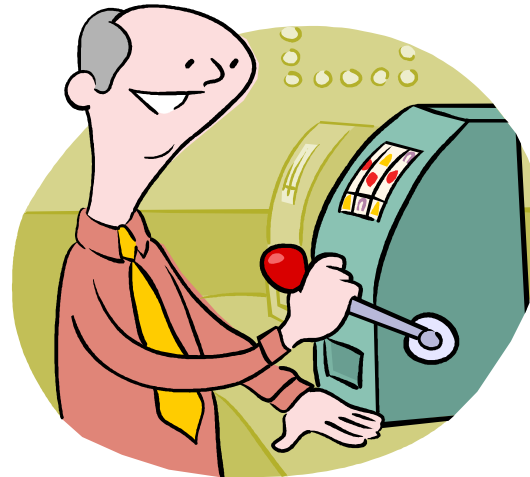
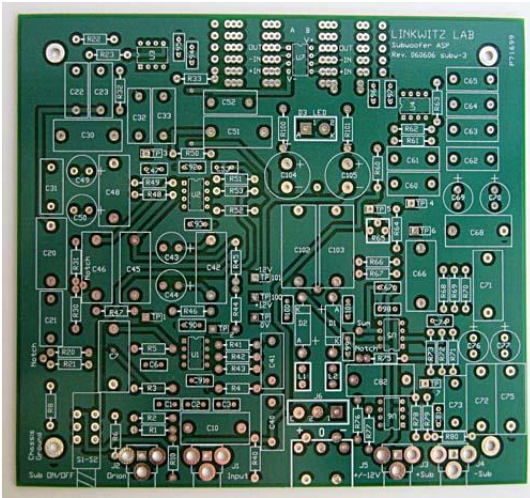
Are We There Yet?



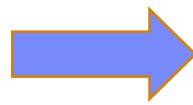
6/10/08
Nancy Pratt

Challenge

How do you know when you have run enough random tests?



**Complex
Designs**



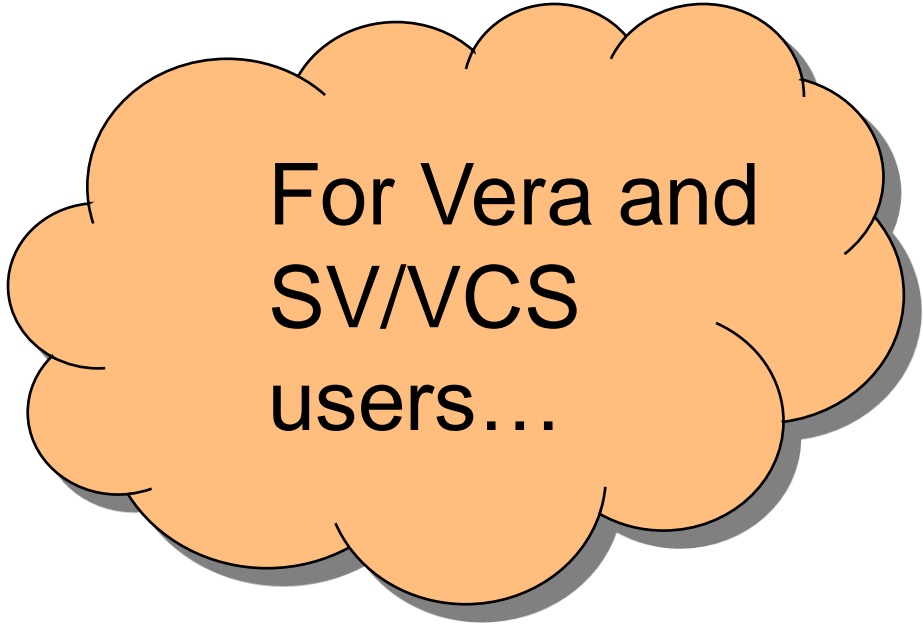
**Random
Tests**



**Information
Overload**

Available Solutions

- **Too Big**
- **Too Small**
- **Grow You Own**
- **VMM Planner**



For Vera and
SV/VCS
users...

Pros and Cons of Available Solutions

- **Too Big (Mega-Verification Plan, Charts and Graphs)**
 - Pro: Looks impressive
 - Cons: Not maintained, not read, meaningless data
- **Too Small (Notes, whiteboard, verbal)**
 - Pro: Fast, dynamic
 - Cons: Chaos, subjective
- **Grow You Own (UCAPI, scripts)**
 - Pro: Customized to team/manager's format preference
 - Cons: Work, non-standard
- **VMM Planner.....**

Why VMM Planner?

- An executable Verification Plan
- Automatic back-annotation
- Familiar spreadsheet format
- Forces thinking about feature hierarchy
- Filters to focus on short-term vs long-term



Microsoft Excel - master_verif_new_1-1.xls

File Edit View Insert Format Tools Data Window Documents To Go Help

Type a question for help

100% Arial 10 B I U

Reply with Changes... End Review...

	A	B	C	D	E	F	G
1	hvp plan master	value m1.Group	value m1.num_bugs	include	feature	subfeature	measure m1.source
2							
3							
4							
17							
18	DON'T CHANGE ORDER OF SUBPLANS. INCLUDE PATHS (hidden above) ARE LINKED BASED ON ENTRY LOCATION.						
19							
20		89.00%			Individual Plans		
21		99.55%				subplan system_1crb	
22		91.87%				subplan system_1ctb	
23		97.84%				subplan system_1dpb	
24		78.23%				subplan system_1man	
25	skip					subplan system_1rac	
26	skip					subplan system_1sdb	
27		98.94%				subplan system_1spb	
28	skip					subplan system_2rac	
29	skip					subplan system_2sab	
30		96.67%				subplan system_2sdb	
31		98.88%				subplan system_2spb	
32		50.00%				subplan system_dram	
33							
34		100.00%			FUSE Instructions		
35		100.00%			Fuse Blow PRI		group bin: sys_fuse_inst_data::FUSE_INST_D/ group bin:

Ready

0.master | 1.master.Individual_Plans.systeme | 2.master.Individual_Plans.systeme

Microsoft Excel - master_verif_new_1.xls

Type a question for help

File Edit View Insert Format Tools Data Window Documents To Go Help

100% Arial 12 B I U

A2 skip

	A	B	E	F	G	H
1	hvp_plan_system_1crb	value m1.Group	\$Priority	feature	subfeature	subfeature
20		100.00%	1			col repair
21		98.21%	1	Diagnostics		
22		100.00%	1		cross with CC	
23		100.00%	1		cross with pipeline	
24		92.86%	1		cross with mem_type	
25			2		cross with each pattern	
26		100.00%	1		cross with back-to-back fails	
27		97.73%	1	Fail Injection BIO (RND CLKS)		
					Can we run "clean" in PF mode when no fails are	

Group:98.21%

Filtered

0.master 1.master.Individual_Plans.system 2.master.Individual_Plans.system

Ready

Lessons Learned

- **Merging Coverage Results**
 - group flex_merge_drop
 - group merge_across_scopes
- **Auto-bin cross filtering – not available**
 - Use ignores when defining cross
 - Define several cross “flavors”
- **Cumulative vs New coverage**
 - Maintain two merged coverage databases for each subplan
 - Reset one when design is updated
- **Link to URG reports in master plan**

Conclusion

- VMM Planner Spreadsheet Annotator is off to a good start (Beta)
- Immediate value-add for Vera and SVTB users
- Incorporating into our verification flow
- Spend less time wading through coverage reports to answer, “Are we there yet?”, and spend more time finding bugs!