## Challenges of Meeting Category 6 In The Field Fanny Mlinarsky



# A Day in the Life of a Field Technician

- Challenge #1: Configuring the Tester
- Challenge #2: Selecting Test Probes
- Challenge #3: Locating Faults
- Challenge #4: Dealing with Changing Standards
- Challenge #5: Managing Test Reports





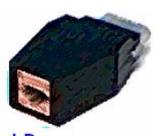
#### Challenge #1 Configuring the Tester **Test Limits Probes Connectors** Cable **Pair numbering Measurements**



#### Challenge #2 Selecting Test Probes



Brand A



Brand B

 Vendor-specific category 6 test probes
 ←Link
 ←Channel

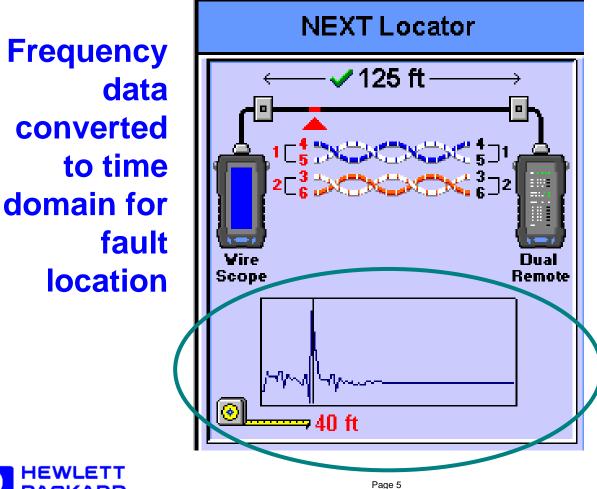








#### Challenge #3 Locating Faults





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#### Challenge #4 Dealing with Changing Standards

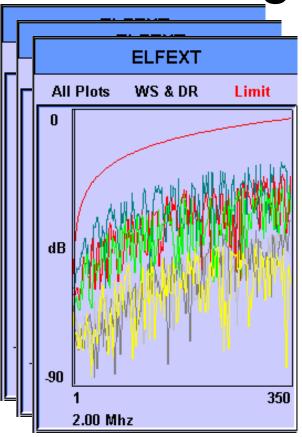
Cable: Test 2 Pair-to-Pair NEXT Plots | PowerSum NEXT Plc 4 Summary Remote pair-to-pair NEXT Print Limit: TIA Category 6 Channel × Wiremap & Resistance 60 80 100 120 140 160 180 200 220 240 (MHz) 🗸 NEXT 40 🗸 EL-FEXT dB) 60 Attenuation 80 100 🗸 Length 7.25 MHz Attenuation/ Crosstalk Ratio Limit. Value Margin 1/2 2/3 4/3 4/1 1/3 4/2 VireScope 46.3 69.6 23.3 🗸 Return Loss ✓ DualRemote 46.3 64.0 17.7

Stored plot data re-evaluated against different test limits



	<u> </u>		ige #4		
	ealinc	ı with	h Char	naina	
				.99	
	Copper Re-Certificat	<b>tano</b>	ards		
Stored test records can be re- certified if plots are available	Please select re-ceri for copper cables © TIA © ISO © Cenelec © Australian/N2 © Custom © Networks	Cat. 3 e-certification res	eults preview ate new test records Cat. 6 Tag RA-C4 RA-C5 RA-C5 RA-C5 RA-C5 RA-C5 RA-C5 RA-S8 XA59 XA59 XA60	Result ▲ FAIL FAIL PASS PASS PASS PASS PASS	
Gess T		[	< <u>B</u> ack Finis	h Cancel	Help
	_	Page 7		Wi	r <b>eS</b> cope.com

#### Challenges Posed By Saving Plots



Plots can be saved using CFLASH storage.

Approx. \$3/MB



The most popular format for digital camera "film"



WireScope.com



### Challenge #5 Managing Test Reports





🌆 ScopeData 6.0 - [data 12-jan.mdb]						
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⊡ 📲 Floor 1	● F1-01-P					
🕀 🔤 Closet 1	● F1-01-U					
panel2	● F1-02-A 🚡					
IBM	● F1-02-K 📅					
Hewlett Packard	● F1-02-P 😽					
Cable: F2-02-P						
Summary Pair to pair NEXT Plr						
VEXT	Print Settings					
Networks 20	40 60 80 (MHz)					
PASS/FAIL 20						
Wire Map &	(dB)					
Resistance 40	and the second of the second					
√ Attenuation 60						
√ Length						
i Impedance 95 🛨 Limi	it Value Margin 1-2 2-3 4-3 4-1 1-3 4-2					
✓ Attenuation/ ✓ WireScope 0 ✓ Crosstalk Ratio ✓ DualRemote 0	58.2      0      Image: Constraint of the state o					

- Saving test records on a PC
- Associating test records with cabling administration



#### Challenge #5 Managing Test Reports

Cable Certification Report 9/15/1998 Cable ID Test 09 Company :Scope Comments: second f Headmuarters B Tested : 9/10/19 Cable : UTP CAT PASS Pair Length (m) (103m Cable Certification Report (Pair-to-pair data) (Delay(ns) (510n 95 m [Resistance(ohms)] Torget Tioned Coble 1501 1801 Cims D [Impedance(ohms)] 12/23/98 11:30 AM UTP CAT 5 |Return Loss Loc(dB Coare Cobie Eength WE 133 DR 133 95 m 020695-001-06 with Channel probe 031397-005-07 with Same link prob at(MHz) Limit (dB) Return Loss Rem (dB 4 полизовал @WS za 4a ao za (MHr) Wiromap (pairing TS68A) at(MHz) 1 (9,9) 10,4 23,2 4,0 100,0 Mark Mark Mark Limit (dB) Warsr pair: Valus (aB): Limir (aB): Margin (aB) [Attenuation(dB) - COCOCOCOC at(MHz) - ALANYAN -Limit (dB) Frequency (MHz): WONDONING ... |Pair Combination NEXT Local (dB) Patrio patri NEXT @WS @DR at(MHz) 14,9 - 3(1,2 30.7 25.3 13.4 81.0 14,9 - 3(1,2) 350 243 113 953 Warsreamba: Valus (aB): Limir(aB): Limit (dB) NEXT Remote(dB) | at(MHz) Margin (aB) Limit (dB) Frequency (WHz): [ACR Local(dB) entra Lass erws @DR at(MHz) 3 (1,2) 21.1 10.0 11.1 70.0 Limit (dB) Warsr pair: Value (aB): 144.9 |ACR Remote(dB) Limir/nEi: 10.0 11.7 70.0 Margin (dB): Frequency (MHz): at(MHz) Limit (dB) Worst Pair Result Pair e pair ACR @WS ØDR **IPS NEXT Local** 14,9 - 3(1,2) 14,9 - 20,0 22,1 17,2 8,7 4,1 15,4 13,1 81,0 99,0 Warscomba: IPS NEXT Remote Warsreamas: Valus (aB); Limir(aB); Margin (aB); Frequency (MHz); IPS ACR Local PS ACR Remote PP EL-FEXT PS EL-FEXT Networks tested Networks Pass: AT PASS PASS PASS PASS PASS PASS 10008ASE-7 100VG-ANY ATM-51 TH 10 PSSVE ISON 3X-AS4100 PASS A7M - 155 ΤP 1008ASE-TX TP-PIMO ATM - 25 TR 4 ACTVE ARONET 14 114 - 155 1008ASE-17 108ASE-7 17 18 ACTVE 17 18 ACTVE TR TIA-568 Category OCAL TOLK Signature: Printed 01/14/99-05:12 PM Signature: Pagelofi West .... <u>ອກຊະເຫຼດັດ</u>, ເດໂດເຫຍນດ ահոս ւտ տյութատ ստ PACKARD

- Text Reports
- Graphical **Reports**



#### Meeting the Challenges

- Challenge #1: Configuring the Tester
  - ← Automated configuration using a Test Profiles
  - ← Built-in automated checking for problem configurations
- Challenge #2: Selecting Test Probes
  - ← Probe availability
  - **←** Automated probe recognition
- Challenge #3: Locating Faults
  Time-domain analysis
- Challenge #4: Dealing with Changing Standards
  Saving plots for re-certification
- Challenge #5: Managing Test Reports
  - ← Support for structured labeling
  - **←** Graphical test reports





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