PASSCAL Cable Testing & Inventories

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4/12/2016
PASSCAL Cables

- 20,650 - Total quantity of cables in the PASSSCAL inventory (Approximate count)
- 491 - Number of cable types managed by PASSCAL
- PASSCAL Hardware group oversees cable inventory, repair & testing
- Cables have a description from a standard method that includes connected equipment and connectors
- Cables are tested on an in house system built around the CableEye® Cable Tester
- Cables are handled and stored in PASSCAL according to a standardized method
Naming Convention

• Descriptions / Names used in inventory and testing systems follow a methodology

• Used for databased, not conversation
  – (“B44/Q330, 0.5m” vs QNET cable)

• Descriptions go in "Model" and "Style“ fields in PASSCAL Inventory System (PIS)
Naming Convention

• Model
  – Describes station components that cable connects
  – From outside to center of station layout, with DAS at center
  – "/" between components
  – Followed by cable length in meters

• Style
  – List connectors in same order as components in “Model” field
  – "/" between connectors
  – Followed by any other identifying features
    • Example: different jacket types

Full Examples of Cable Descriptions

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Model</th>
<th>Style</th>
</tr>
</thead>
<tbody>
<tr>
<td>Streckeisen</td>
<td>STS-2/BOB, 5m</td>
<td>18p/19s</td>
</tr>
<tr>
<td>PASSCAL</td>
<td>Battery/PwrBox, 1m</td>
<td>fork-ring/3s, 14-16 gauge</td>
</tr>
<tr>
<td>CTI</td>
<td>T120PHQ/PwrBox/Q330, 6m/3m</td>
<td>20s/4p/26p, poly</td>
</tr>
</tbody>
</table>
Cable Tester

- Integrated system built with industry solutions
- **CableEye® Cable Tester**
- PC-Based Cable and Harness Test System
- ~$12k for the **CableEye® Cable Tester**
  - Does NOT include connectors, computer, test stand, UPS, etc.
- **M3U (Low Voltage)**
  - Diagnostic and Pass/Fail Testing
  - Find, display, log, & document
    - Continuity (opens, shorts, miswires)
    - Intermittent connections
    - Resistance (contact, isolation, embedded)
    - Diodes (orientation, forward voltage, reverse breakdown).
Cable Tester

Tester Software Interface
- View cable status
  - Pass/Fail
- Cable database
  - Lookup by PIS Barcode #
- Discovery
  - Schematic of new / unknown

Tester Cable Interface
- Connect cable ends
- Configured in house
  - Built to PASSCAL needs
Cable Tester Parts
Cable Sorting

- High volumes of cables to test and store
- Testing and results recording / marking methods need to be efficient – Mission Critical
- Storage system needs to be effective – Mission Critical
- Basic Scheme
  - Green = Good
  - White = Cables that are not checked in to the inventory system & need testing
  - Yellow = Cables that are checked in to the inventory system & need testing
  - Red = Bad
Cable Sorting Flow

1. **Incoming Cable (Experiment, New, etc.)**
   - Can Not Check In
     - Another User Handles PIS Issue
     - Checked In To PIS

2. **Checked In**
   - Checked In
   - Fail
     - Repair or RMA Cable
   - Pass
     - On shelf Ready for Use

3. **Repair or RMA Cable**
   - Can Not Check In
     - Another User Handles PIS Issue
Cable Sorting: Green

- Good cables are kept in green bins or on shelves designated for specific large cables.
- Cables taken from green bins or designated good shelves must be checked out from the PASSCAL Inventory System (PIS)
  - Experiment, R&D, Training

- No Green Tags
Cable Sorting: White/Yellow

• White Bins
  – Cables that were unable to be checked in
  – Good or bad status TBD
  – Not used by staff that are not testing cables

• Yellow Bins
  – Cables that are checked in as present at PASSCAL
  – Good or bad status TBD
  – Not used by staff that are not testing cables
Cable Sorting: Red

• Cables that have problems are kept in red bins while they are in queue to be serviced

• Tags
  – Used in addition to red bins help identify problem cables
  – Allow for information about the problem to follow the cable
Acknowledgements

NSF: National Science Foundation
IRIS: Incorporated Research Institutions for Seismology
NMT: New Mexico Tech