802.3af Voltage and Current Issues

Basic characteristic for the Power Supply and Power Sink Devices

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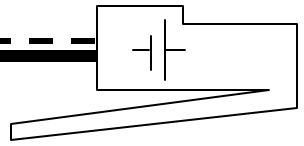
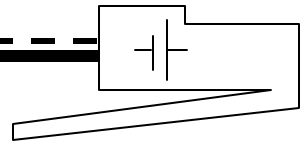


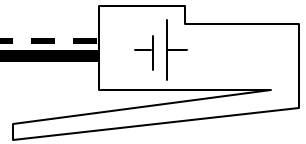
Voltage Constraints

- Safety - IEC 950 SELV limits:
  - 60 VDC
  - 42.4 VAC
- Other safety standards (Japan @ 45)
- Telco DC supply drops to 42 VDC



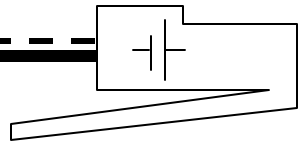
Current Constraints

- Safety - IEC 950 8 A
- Patch panel PCBs ~ 250 mA per conductor
- Connectors ~ 500 mA per contact
  ~ 2 A per connector
- Cable ~ 800 mA per conductor
- Transformers operational ~ 350 mA

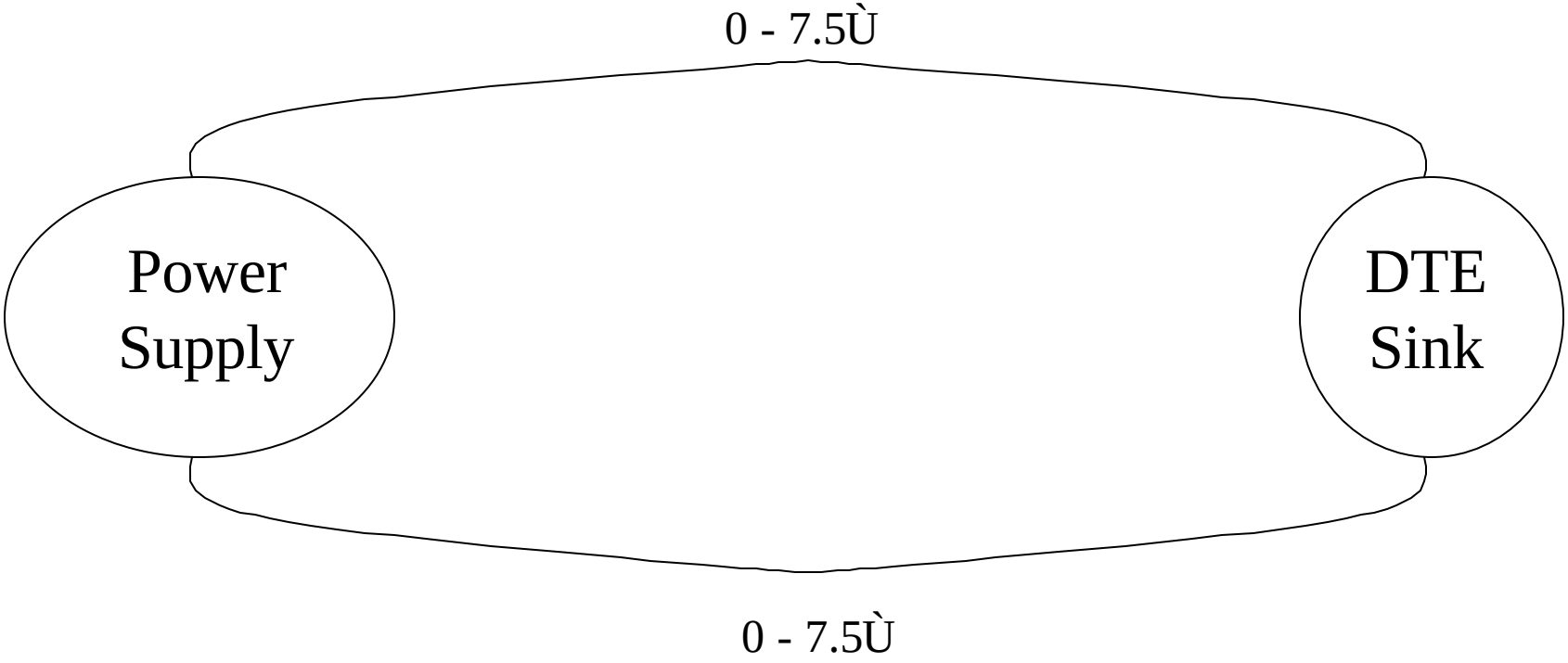


Supply Proposal

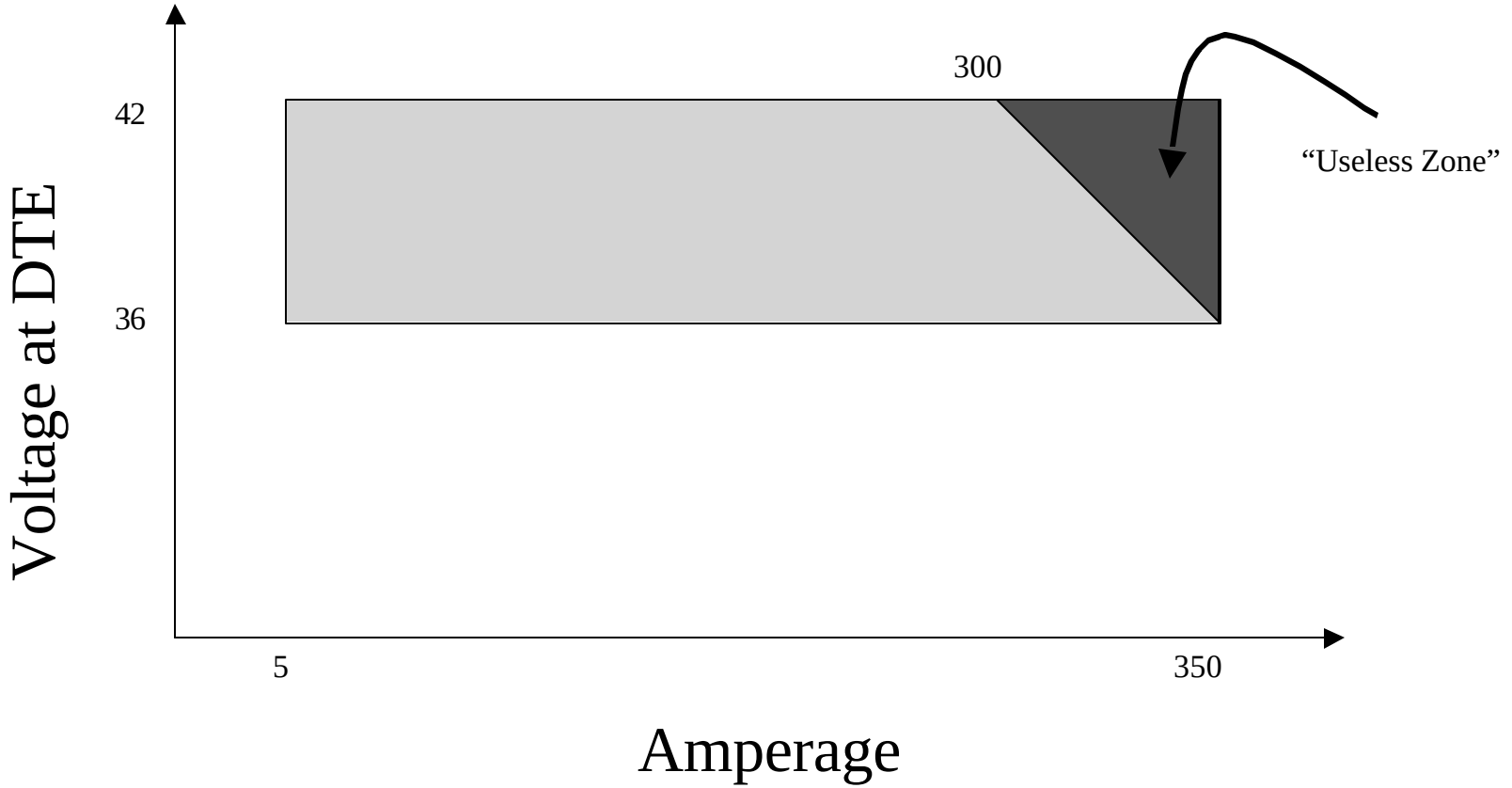
- DC option to be 42 VDC regulated supply
- AC *not proposed*
- 350 mA loop current limit, balanced between conductors of the pairs



Cable Plant Effects

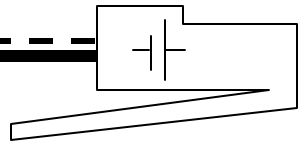


Operational Effects DC

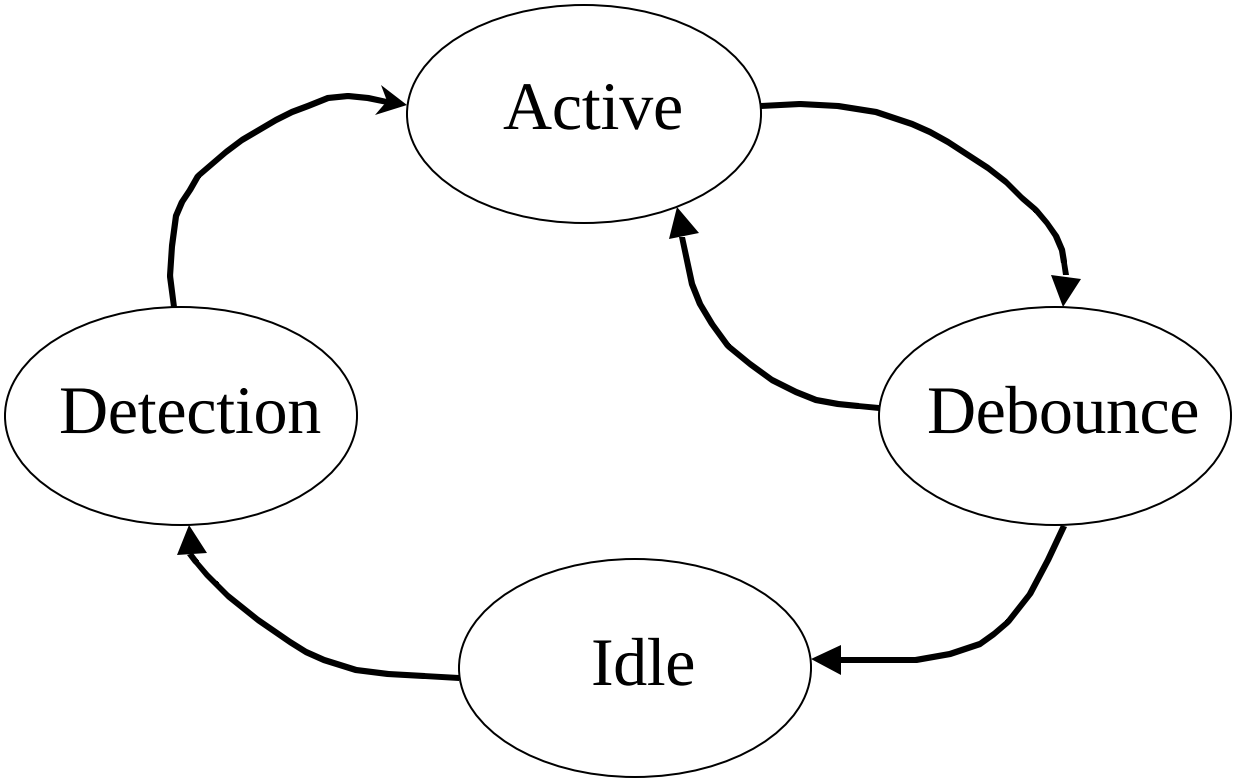


DTE Proposal

- DC option to be 42 - 36 VDC supply
- AC *not proposed*
- 350 mA maximum
- VDC results is 12.6 Watts at input



Supply States

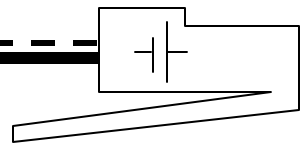


Not proposed

Supply States

- Detection - Power is not applied,
  Detection is running on DCE
- Active - Power is applied,
  DTE must maintain > 5 mA current draw
- Debounce - Power is applied
  DTE is not drawing current
  if current picks back in 8ms => Active
- Idle - Power is not applied,
  DCE is not trying to detect

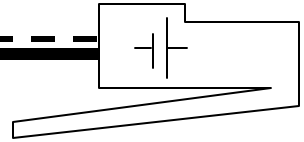
Not proposed



Major Decisions

- Detection - no agreement
- Pairs - no agreement
- Power Maintenance - not enough discussion
- Power Characteristics - Ready for proposal
- Mid-Span Insertion - no agreement
- 1000BASE-T - limited agreement

Not proposed



Power Presentation to
802.3af Task Force

6 -9 March 2000