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### Multivendor Interop Specification Review

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### Presentation agenda

- Interop objective and challenges
- Key challenges addressed in earlier work
- This session
  - Interoperability process outline
  - Interoperability specification template review
- Next steps including ORV3
- Summary









### **Electrical Challenges**

- Current sharing and dynamic response
- Input and output interface circuitry
- Power up
- Recovery from AC loss and/or OCP
- Firmware compatibility for monitoring, control and communication











### Mechanical and Thermal Challenges

- Dimensions and tolerances
- Connectors, pins and pin types, pin length
- Latching and ejectors
- LED color details, intensity

\*Interoperability of Mixed Supplier PSUs in An Open Rack Power Shelf

- Fan performance, fan speed control algorithms
- Thermal considerations with multiple vendors





- David Sun (May 2018)





RACK & POWER

### **Current Sharing and Dynamic Response**





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#### Current Sharing Interoperability Possible modes of operation :





**Specifications** 

Instability without proper consideration

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### Challenges addressed in the past

- Electrical challenges
- Current sharing dynamic response
- Peak loading
- Mechanical challenges
- Design considerations
- Thermal Interoperability

https://www.opencompute.org/projects/rack-and-power



**RACK & POWER** 







### Interoperability Specification Process

- Execute Multi-Party NDAs
- Interoperability specification template key sections
  - Specifications definition and information exchange
    - Define parameters for interop specification beyond normal PSU specification
    - Cooperate with other supplier(s) to exchange necessary information and material
  - Design
    - Perform additional analyses and design tasks
  - Define and execute test program









### Interoperability Specification Draft













### Next Steps

Requirement details to be added to the specification Define testing configurations and program details:

- Steady state and dynamic conditions
- Start-up, shut down, hot swap
- Fault simulation
- Temperature effects
- Corner cases
- Role swaps
- Use this as a building from for ORV3 from the start

Completed Specification for team review









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### Call to Action

- We need your help!
- This group can benefit from your experience.
- Final stretch before publishing final specification
- You can find more details of project here:

https://www.opencompute.org/wiki/Rack-%26-Power

• You can find more details on V2 Specifications here:

https://www.opencompute.org/wiki/Open-Rack/SpecsAndDesigns







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OCP Regional Summit 26–27, September, 2019

