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PCI Pwrctrl woes

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On non-ACPI systems, such as the ones using DeviceTree for hardware description, the PCI host bridge drivers were responsible for managing the endpoint power supplies. While it worked for some simple use cases like the endpoints requiring 12V, 3.3V supplies, it didn't work for complex supplies required by some endpoint devices like the integrated WLAN/BT devices.

The PCI Pwrctrl framework [1] was created to solve these issues by moving the power supply handling away from the PCI host bridge drivers. While it solved the intended issue, like managing the supplies of a single WLAN/BT endpoint connected to a Root Port, it fell short of being the generic PCI framework managing the endpoint supplies. For instance, it doesn't support handling PERST#, which needs to be toggled on some form factors, managing the supplies of multiple endpoints under a Root Port with different power supply requirements, etc. So the developers still cannot use it on all platforms.

This session outlines the issues with the pwrctrl framework and presents proposals on addressing them.

[1] <https://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git/tree/drivers/pci/pwrctrl>

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