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## INSTALAPTOP - INTELLIGENCE SYSTEM POWER CONTROL

HP INC

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## ***InstaLaptop – Intelligence System Power Control***

Battery life and resume time are key factors to evaluate a laptop performance and wireless connection is a very common tech on every single laptop so in this document we are going to take 2 user scenarios with wireless device support to show how we can solve the pain point and improve the battery life

Scenario 1: Mike is an office worker, and he wants to leave office when he finishes his work. Mike just closes the laptop lid and puts his laptop into his bag then leave, at this moment, his laptop might still stay in S0 or modern standby (S0ix) state which keeps consuming the system battery and might cause the security problem

Solution for sceario1:

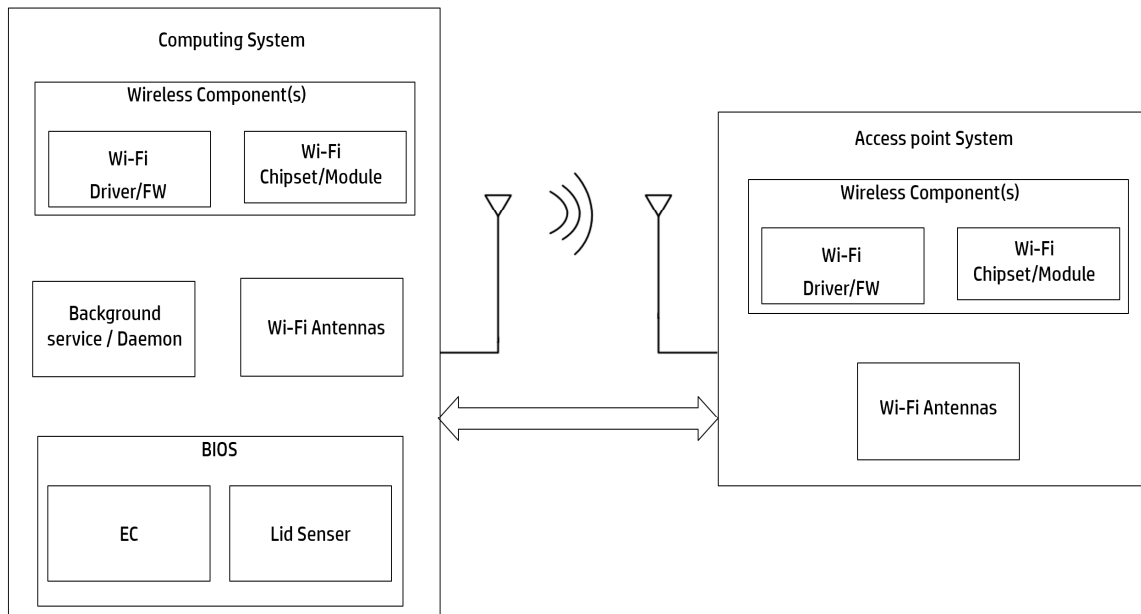
User connects his laptop to wireless AP at the office environment, after user finishes his work, user just closes lid and puts his laptop into his bag then leaving office. At this moment BIOS will detect this behavior then it will inform daemon that the lid is closed via method `_LID` and the daemon will detect the connected (known) AP if it is out of range for a certain threshold time. If yes, then daemon will call MSFT API to trigger system enter S4/S5 to save power

Scenario 2: Mike is an office worker, when he backs to office or home and takes out his laptop from his bag to start working, Mike needs to wait longer time to resume his laptop to S0 state when his laptop is in S4 or S5 state

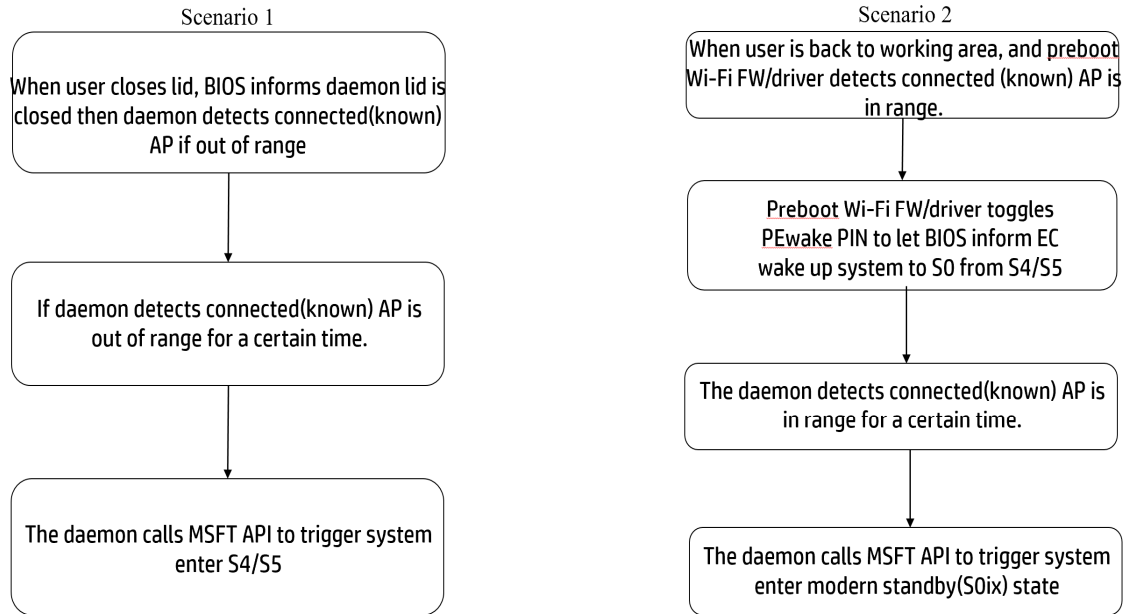
Solution for sceario2:

When user is back to office, Pre-boot Wi-Fi detects the connected (known) AP is in range, then Pre-boot Wi-Fi FW toggles PEwake PIN to let BIOS inform EC wake up system to S0 from S4/S5. When system is in S0 state, the daemon will call MSFT API let system enter modern standby state when connected (known) AP is detected to decrease resume time and let system be ready for using

## Function Block Diagram



## Workflow / How this works



*Disclosed by Frank Chen, Jackal Chou, Jim Kuo, Mike Cheng and Connant Lee, HP Inc.*