DOCKETED

Docket Number:	14-AAER-02
Project Title:	Computer, Computer Monitors, and Electronic Displays
TN #:	204155
Document Title:	Aggios CEC Computer Efficiency Standards - Technical Demo, April 15, 2015
Description:	N/A
Filer:	Patty Paul
Organization:	Aggios
Submitter Role:	Public
Submission Date:	4/13/2015 4:38:39 PM
Docketed Date:	4/13/2015

CEC Computer Efficiency Standards
- Technical Demo -

aggios™

04/15/2015

Who we are

- California startup
- Our technology: Software Defined Power Management
- Why we are here:
  – Support CEC's energy efficiency activities
  – Promote mobile efficiency for plug load devices
  – Increase awareness of the new IEEE P2415 standard
- Presenters:
  – Davorin Mista, MSEE, VP Eng.
  – Vojin Zivojnovic, Ph.D., CEO

California startup focused on energy management of electronic devices

Learning from nature
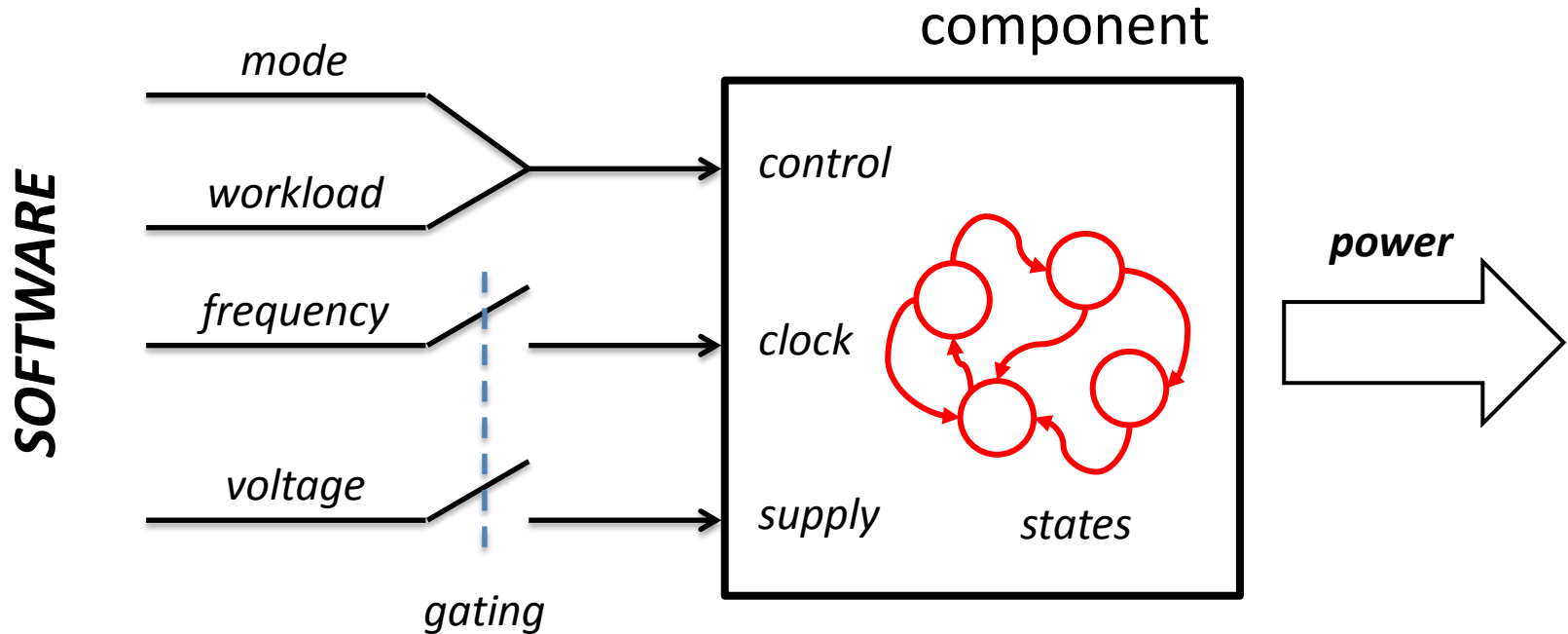
How WE design systems …

… for maximum performance

How NATURE designs systems …
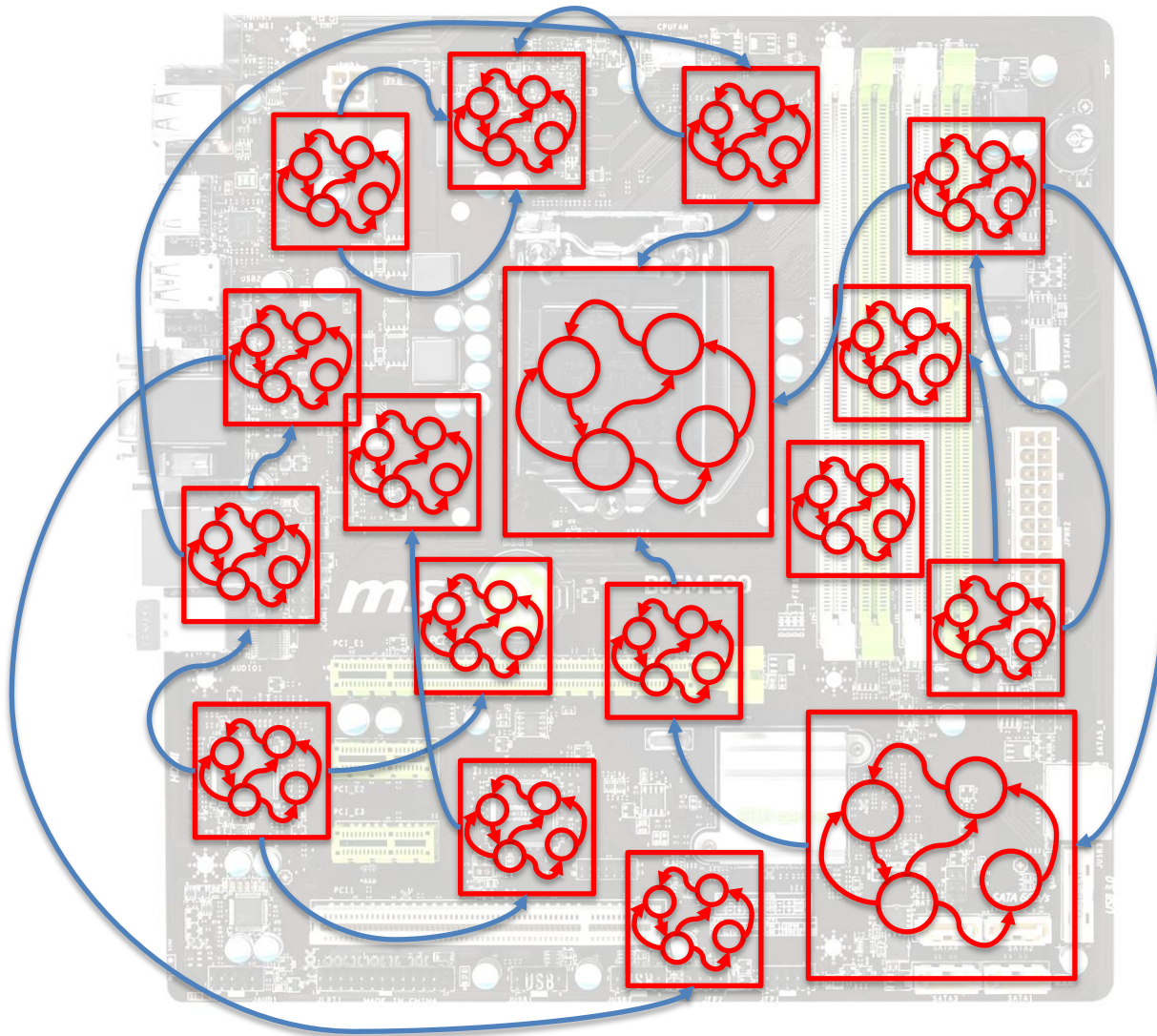

… for maximum efficiency

source: prof. Jan Rabaey, UC Berkeley

Component power consumption

Component power is a function of operating mode, frequency and voltage

Device/system power consumption

Device power is a complex combination of component power and intricate power dependencies – best understood for mobile devices!

Demo summary

- Two demos using common software and components

- Demo #1: assembled desktop PC (cost ~$550)
  - MSI motherboard, Intel processor, Western Digital hard disk drive, Seasonic power supply, Windows 8.1
  - Showing impact of <u>software defined power management</u>

- Demo #2: off-the-shelf desktop PC (retail $499)
  - HP ProDesk 400 G1, Windows 8.1
  - Showing impact of <u>improved voltage conversion</u>

Demo 1 recap

Idle-power for MSI assembled desktop PC:

- Default settings: 22W

- Optimized software: 12.4W
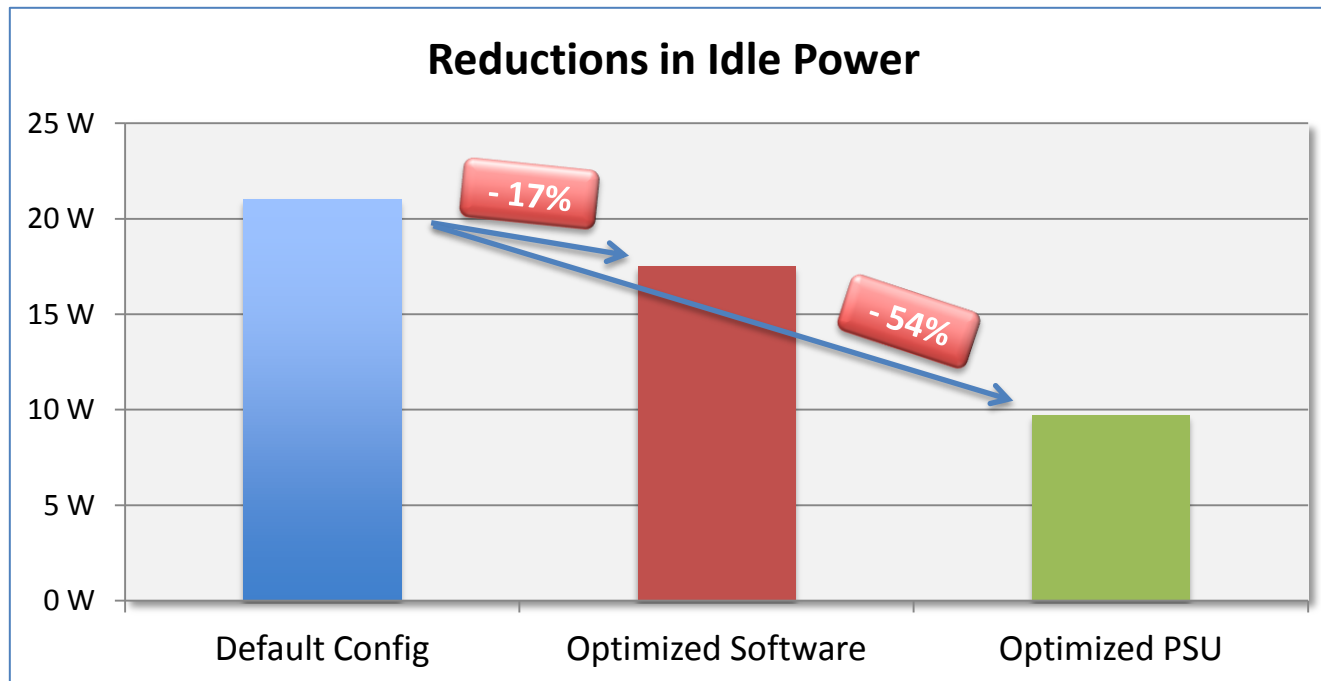
- Optimized + right-sized PSU: 8.6W

Reductions in Idle Power

- 44%

- 61%

| | Default Config | Optimized Software | Optimized PSU |

© AGGIOS, Inc.
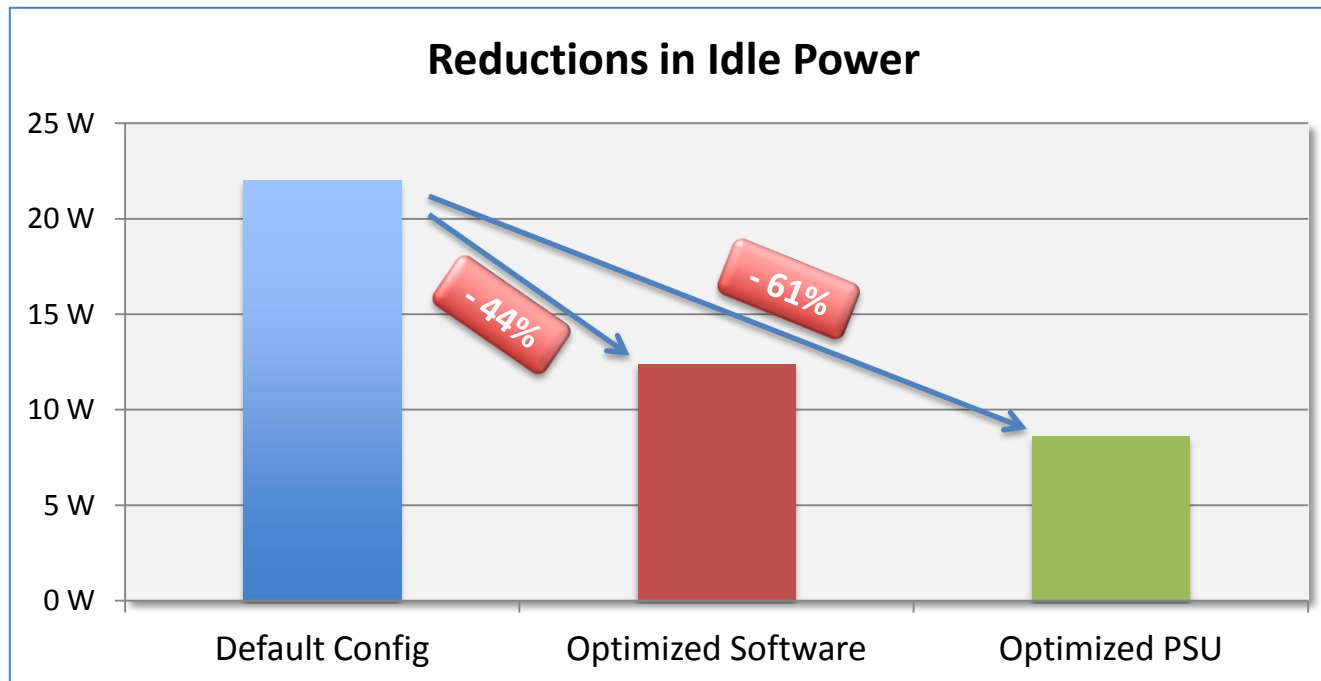
Demo 2 recap

Idle-power for HP commercial desktop PC:

- Default settings: 21W

- Optimized software: 17.5W

- Optimized + right-sized PSU: 9.7W

Reductions in Idle Power

- 17%

- 54%

| | Default Config | Optimized Software | Optimized PSU |

Conclusions

- Components that meet expected power levels are available today

- We still need to improve the way we select and combine such components to optimize whole device (system) power

- New unified technologies and standards are necessary for cost effective deployment of advanced power solutions across the industry

aggios™

… think energy.