



Birds of a Feather Imaging System Power Management

**Printer Working Group
Face-to-Face Meeting
February 16, 2009
Waikoloa, Hawaii**

Intellectual Properties Policy Statement



This meeting is being held in
accord with the PWG Intellectual
Properties Policy.

Agenda



- Identify Minute Taker
- Consider Agenda
- Background
- BoF Objectives
 - Establish whether there is sufficient interest and support
 - Consider Scope
 - Consider Requirements
- Consideration of Factors Determining Requirements
 - Assign tasks of collecting determinants and summarizing requirements
- Scope of Project
- Consideration of Requirement
- Cut at Project Statement and Timeframe Objective

Background



- Requirement for effective use of electrical power
 - Economic and Environmental Issues
 - Purchaser Requirements
 - Government and Organizational Standards
- OS Vendors (e.g., Microsoft) making “Green” push
 - Power Monitoring and Management Provisions
 - Effect Host System and Associated Devices
- Imaging Devices are prime candidates
 - Require “instant” availability but have intermittent use
 - Can have extended periods of non use
 - Many devices use technology requiring significant power
- Industry Standard Power Management Elements
 - Benefits manufacturers, applications and users

BoF Objectives



- Consideration of Power Management Issue
 - Is it something to be addressed?
 - Is it desirable to your company to have Industry Standard Management Elements?
 - Will your company support the development of Standard?
 - What are your company's determining requirement factors?
- Consensus on the creation of a project.
 - Scope
 - What devices? Or Services?
 - Monitoring or Management?
 - Modes of operation? Power states?
 - Definition of elements and what bindings? (MIBS, CIM, WS Man)
 - Remote and Local interface?
 - First cut on Project Objectives, Steps and Schedule

Factors Determining Requirements



- **Government Standards**
 - EU Directive, Energy Star, others? (US States' standards governing purchases)
 - Specific requirements relative to hardcopy imaging equipment monitoring/management, just value for power consumption, or just general objectives?
 - Task to collect and summarize government standards
- **Compatibility with OS System Features**
 - Microsoft, others?
 - What are the requirements?
 - Task to collect and summarize OS's requirements

Factors Determining Requirements



- **Compatibility with other Standards**
 - CIM
 - Advanced Configuration and Power Interface (ACPI)
 - IEEE 1621-2004
 - ECMA
 - Others?
 - Task to collect and summarize Power Management requirements in applicable, recognized standards
- **Compatibility with existing practices**
 - Consider and summarize existing practices
- **Customer Requirements**
 - Government and Private RFQ and purchase requirements
- **What is Effective, Appropriate and Feasible**

Scope Issues



- For MFDs or just printers?
 - Both Single and Multi Function Hardcopy Imaging Devices
 - But requirements and factors may be very different for different types of device
- Management of a Device, Subunit or a Service Basis?
 - Different Services/Subunits have different characteristics
 - One element set fit all
- Limit scope to Management elements for access?
 - Also define Power states, local user interaction?
- Monitoring or Management?
 - Report state but also provide set to state? (yes)
 - Provide for setting of policy determining state? (yes)
 - Provide for setting power state according to ToD clock (yes)

Scope Issues



- Deal with power consumption objectives?
 - Just deal with power states?
- Are reported power states reflecting
 - actual power consumption (levels or relative levels)?
 - Operational Mode (e.g., idle, standby, sleep, etc.)?
 - Latency (times to come to full operation)?
 - Other?
- Consider sets of elements for different environments?
 - Make distinction between usage environments
- Certification Capability?
- ACPI V4.0 is under development. Do we want to participate?
- Other Scope Issues

Requirement Issues?



- How many power states and how to name them?
(e.g., Active, Idle, Standby, Sleep, Hibernate, Off)
- How to address “awake-able” subunits in lower power states?
 - network
 - incoming phone line
- Security
 - How to prevent Power Management from being vehicle for DOS attack
- Bindings/Transports for defined elements
- Other

Other Issues



- Power Management may have implications beyond remote reporting or setting of Power State or Policy.
 - Independent power control of subunits
 - Local user power control
 - Logical Design of the System
 - Physical partitioning of the Device

Project Statement



- **Statement of Problem**
- **Objectives**
- **Out-of-scope**
- **Project Phases & Timeframes**
 - General Requirements
 - e.g., compliance with certain standards and directives
 - Specific Requirements
 - e.g., definition of states, monitoring, setting of states, policies,
 - Specification of Elements and Actions
 - Representative Binding
 - Prototype

References & Resources



- http://ec.europa.eu/enterprise/eco_design/directive_2005_32.pdf
 - EU General directive on “ecodesign” requirements and enforcement – nothing specific on power management
- <http://www.euractiv.com/en/energy-efficiency/eco-design-requirements-energy-products-eup/article-117467>
- http://europa.eu/eur-lex/LexUriServ/site/en/oj/2005/l_191/l_19120050722en00290058.pdf
- <http://www.itu.int/ITU-T/studygroups/com15/sg15-q14.html>
- http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?tp=&isnumber=31207&arnumber=1453037&punumber=9863 (IEEE 1621-2004 " IEEE Standard for User Interface Elements in Power Control of Electronic Devices Employed in Office/Consumer Environments")
- http://www.dmtf.org/standards/cim/cim_schema_v220/

References & Resources



- <http://www.greensupplyline.com/showArticle.jhtml?articleID=19700884>
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 - Article summarizing EU and US Energy Star provisions
- <http://www.leonardo-energy.org/drupal/tracker>
 - Tracking of energy related articles and posts
- http://www.bureauveritas.com/wps/wcm/connect/bv_com/group/home/about-us/our-business/our-business-consumer-products/regulatory-bulletins/eup_standby_offmode_household_office+equipment/?presentationtemplate=bv_master/CPS_full_story_presentation
on
 - Summary of Requirements and Timescales for Information technology equipment intended primarily for domestic use. Can sign up for bulletins.
- http://www.newark.com/jsp/bespoke/base.jsp?bespokepage=newark/en_US/edworld/legislation-center/EuP/eup-scope.jsp
- <http://www.acpi.info/> (ACPI V4.0 is under development. Do we want to participate?)

Wrapup



- Summary of Conclusions
- Schedule Estimates
- Action Items

Thanks for your participation!