Smart Battery & MS OS

Phil Mummah, Intel Corporation

March 1999

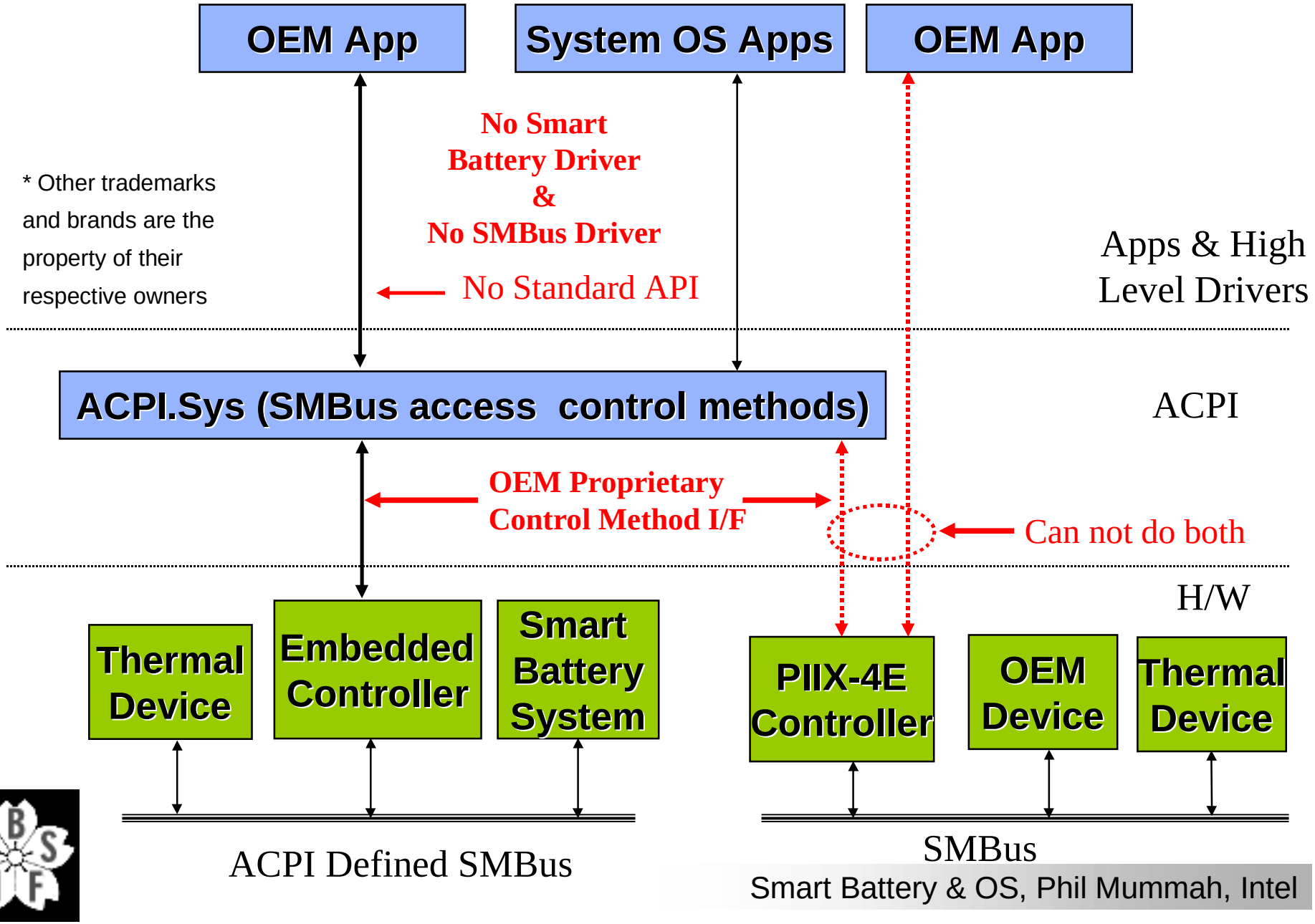
Agenda

- Issues
- New OS Interface
- Benefits
- Summary
- Future

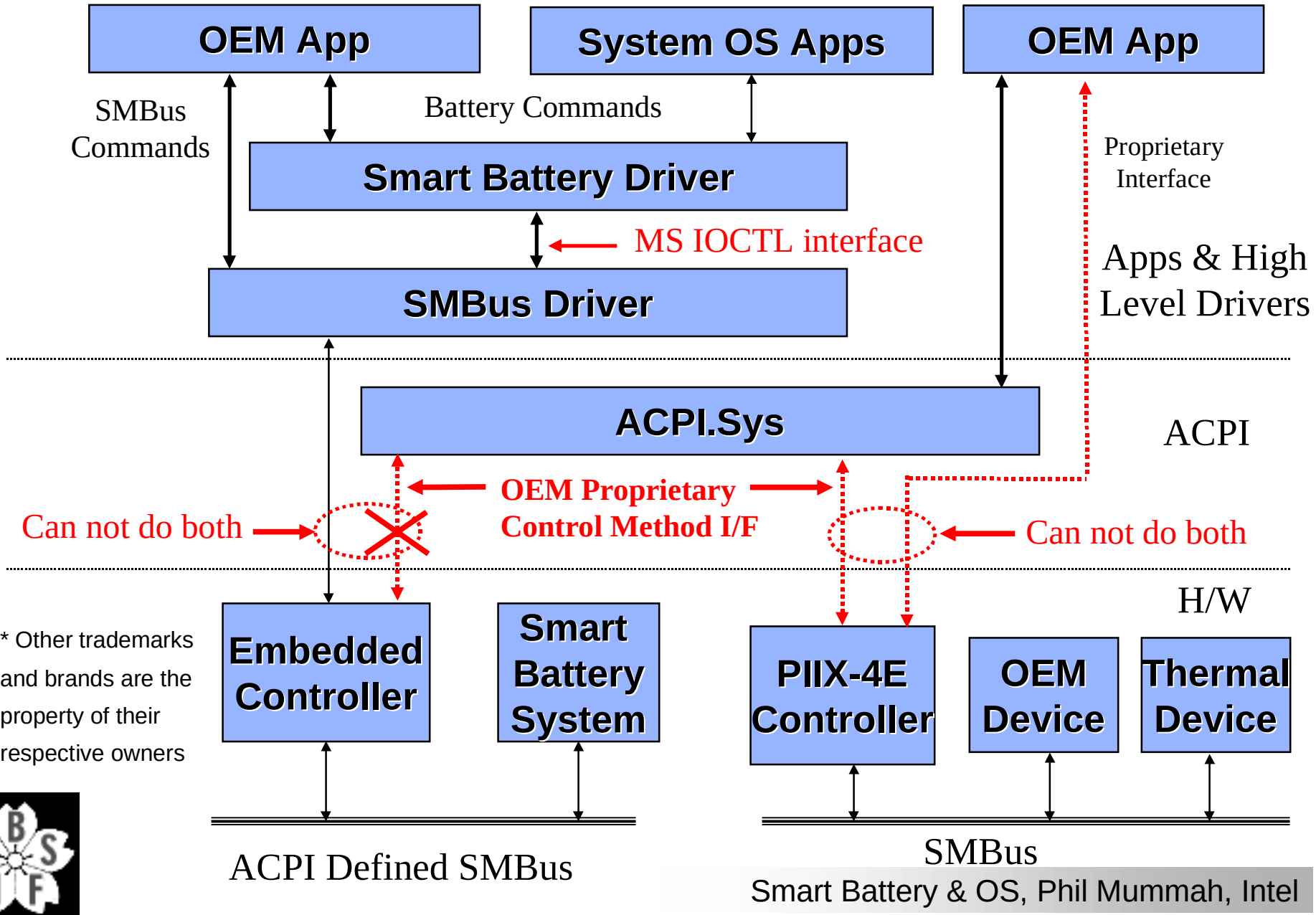
Issues

- No complete SMBus/Smart Battery software interface
  - Windows 98*
    - Smart Battery/SMBus Drivers not present
  - Windows 2000* has incomplete SMBus solution
- SMBus access is OEM specific
  - Unique to each OEM box
  - Not standard across different systems
  - Applet update may require ROM update also

Windows 98* SMBus Access



Windows 2000* SMBus Access



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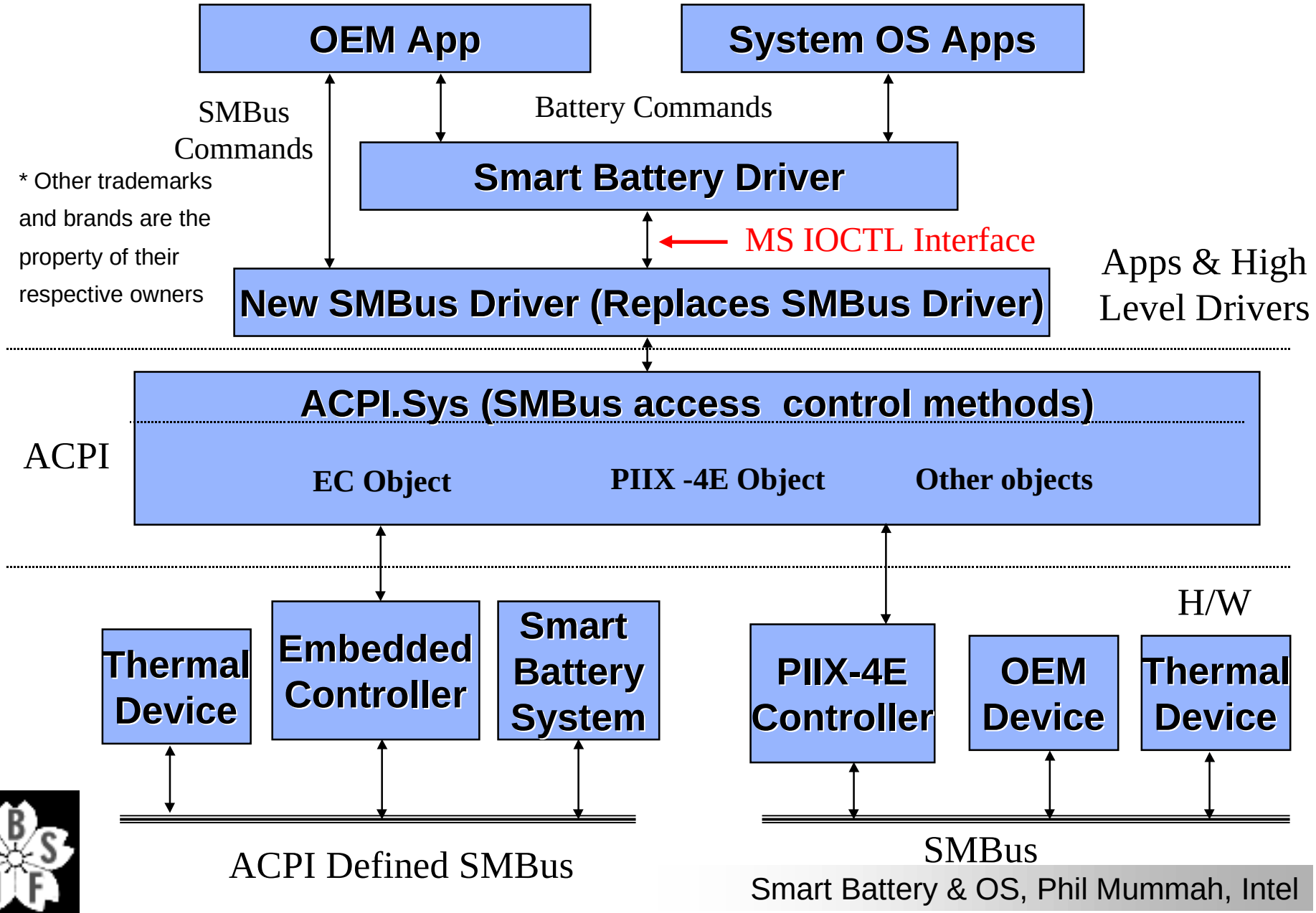
Solution

- Define a common SMBus solution for Windows 98/2000* OS's
  - A specification that defines a standard CM interface to access any SMBus device
  - Create a matching SMBus driver that presents the MS IOCTL interface to other drivers
- Provide coordination between ACPI and OEM SMBus devices
- Define extensions to ACPI to access SMBus HW
  - Smart Batteries
  - Sensors (temp, voltage, fan etc.)
  - Watchdog timers (OS hang)

Software Access to Smart Batteries

- Define and provide new SMBus driver
  - API will be the same as the existing SMBus host controller driver
  - Allows Microsoft* smart battery driver to work without modification
    - Will load in Windows 98* and Windows 2000*
- New SMBus driver will access standard control methods
  - Control methods send SMBus commands to SMBus controller
    - Could be Embedded Controller
    - Could be PIIX-4E (not recommend for Smart Batteries)
  - Coordinated access to the SMBus (e.g. Thermal zone)

Proposed Windows 98/2000* SMBus Access



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Benefits

- Common solution for Windows 98* & Windows 2000*
  - New SMBus driver can load in either
- Provides access to SMBus devices from OEM software
- Resolves synchronization problems between ACPI and SMBus device software
  - SMBus driver conflict eliminated
- Eliminates need for *a priori* knowledge of SMBus devices by software
  - Use standard API defined by new driver
- Abstracts complexities of hardware
  - Will work on any machine
- Provides increased flexibility / innovation opportunity to OEMs
  - OEM can write their own Battery Data display

Status of “new” driver

- Preliminary definition done
- Meeting held with Microsoft*
  - Positive response
- Preliminary driver written and working on Windows 98* AND Windows 2000*

Summary

- Currently Smart Battery and SMBus device access not available in Windows 98*
- SMBus problems in Windows 2000* may conflict with battery data access
- New SMBus driver proposal uses standard Microsoft IOCTL interface to SMBus devices
- Single OEM Applet will work on all platforms
  - Allows OEM or software vendor to have single application for all battery devices or SMBus devices

Futures

- Participants invited to review and comment on the specification (http://www.sbs-forum.org)
- SBS Forum owner to be identified
- Driver specification needs to be voted on by membership
- Distribution model needs to be determined
  - SMB Forum could write and distribute
- BIOS vendors need to support control method interface
  - Intel will work with BIOS vendors for this

DEMO

- Windows 98* & Windows 2000*:
  - ACPI defined embedded controller
  - Microsoft's* battery display applet
  - Microsoft's smart battery driver
  - New SMBus driver defined control methods