



# Korea's Energy Efficiency Program in terms of Networked Standby

Sanguk Jung

**March 7, 2013**

Telecommunications Technology Association

## I

### **Power Reduction Programs in Korea**

- **Energy Efficiency Labeling Program**
- **e-Standby Program**

## II

### **Other Approaches**

## III

### **Reverse Effect**

- Definition of “networked standby” in this presentation

“Networked standby modes are conditions, in which the equipment provides **reduced functionality**, but retains the capability to **resume applications through a remotely initiated trigger via network connection**.”

**Networked standby modes may distinguish different levels of network availability and by that different resume-times-to-application as well as power consumption.” (Source : EuP Preparatory Studies, Lot 26)**

- Include : Sleep mode, Idle mode, Active standby mode, Standby mode

- Exclude : Passive standby mode(only waiting for remote controller)

Sleep mode(wake up by proximity or touch sensor, such as bidet, hand dryer)

- Focus on networked devices(e.g., TVs, Set-top boxes, Computer, etc) rather than network devices(e.g., switch, router, etc)

## Energy efficiency labeling program



- ▶ Implementation('92)
- ▶ Mandatory labeling, applying MEPS
- ▶ 35 items included

## High efficiency certification program



- ▶ Implementation('96)
- ▶ Voluntary
- ▶ 41 items included

## e-Standby program



- ▶ Implementation('96)
- ▶ Voluntary
- ▶ 22 items included

Certification of high efficiency equipment (support market entry)

energy efficiency labeling program (support the market consolidation)

lowest energy efficiency standard (throw out the low-energy efficiency appliances)

# Energy Efficiency Labeling Program

- **7 Target Products have networked standby power limits.**

- Air conditioners, washing machines, drum washing machines, dish washers, household gas boilers, gas water heaters, TVs.



- **Other 28 products have efficiency level, off mode and passive standby mode power limits.**

# Energy Efficiency Labeling Program



- Summary of 7 Target Products

Target Product	Networked Standby Mode Power Limits	Network Function	Networked Standby Mode
Air Conditioners	$\leq 1W$ (Passive Standby) $\leq 3W$ (Active Standby)	Available (some)	Available (Ethernet Communication)
Gas Boilers	$\leq 3W$ (Sleep Mode)	Available (majority)	Available (Serial Communication)
Gas Water Heaters	$\leq 3W$ (Sleep Mode)	Available (majority)	Available (Serial Communication)
Washing Machines	$\leq 2W$ (Active Standby)	Not available	-
Drum Washing Machines	$\leq 2W$ (Active Standby)	Available (some)	Available (Ethernet Communication)
Dish Washers	$\leq 3W$ (Active Standby)	Not available	-
TVs	$\leq 0.5W$ (Passive Standby) $\leq 2W$ (Active Standby)	Available	None

# e-Standby Program

- **11 target products have networked standby power limits.**

- Computers, Printers, Fax machines, Copiers, Scanners, Multi-function devices, Set-Top Boxes, Door Phones, Cord/Cordless Phones, Modem, Home gateways,



- **Other 11 products have passive standby and idle mode power limits.**

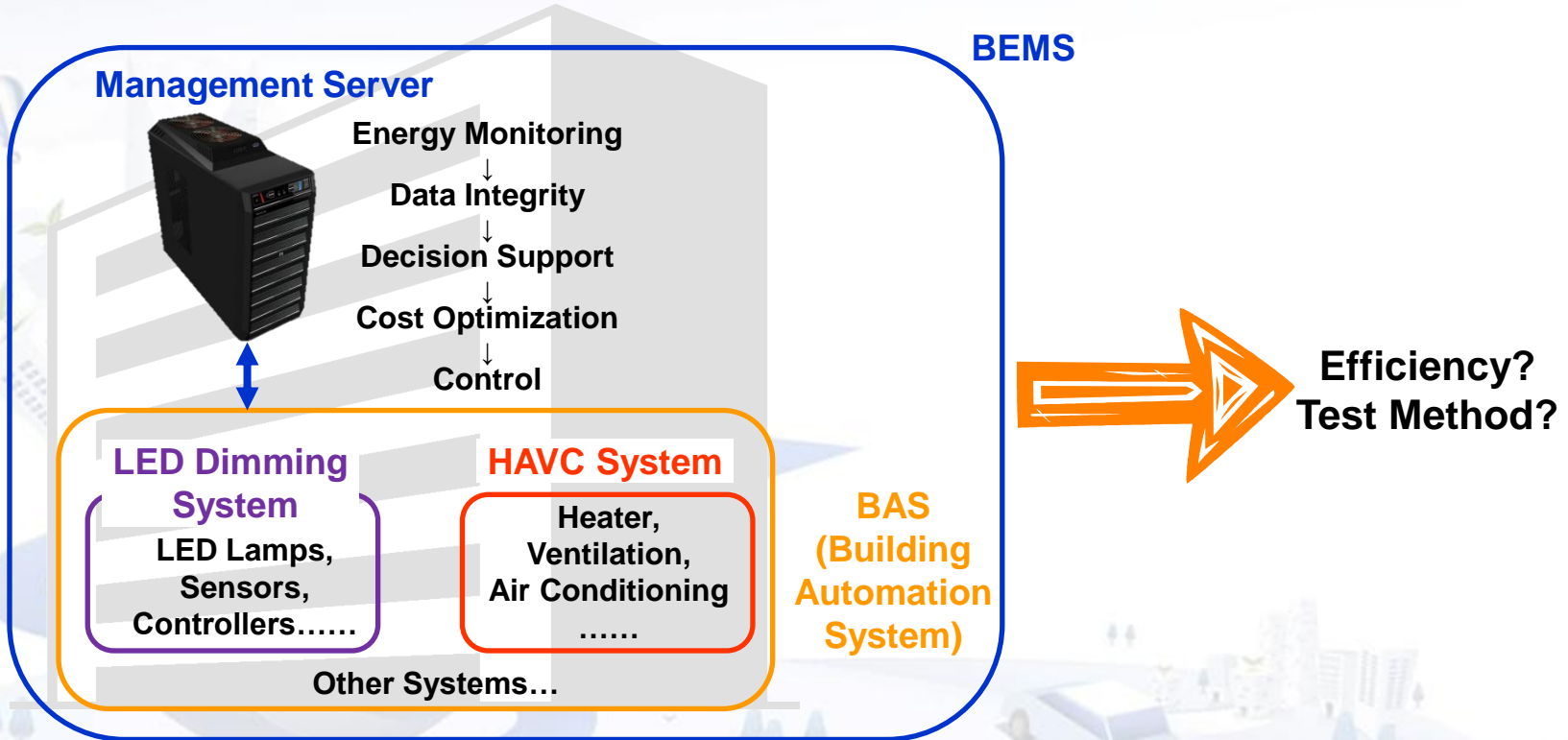
## ● Summary of 11 Target Products

Target Product	Networked Standby Mode Power Limits	Network Function	Networked Standby Mode
Computers	TEC including <b>Sleep Mode</b> , <b>Transition Time</b> and Off Mode	Available	Available (Wake On LAN mode)
Printers, Fax Machines, Copiers, Multifunction devices	TEC including <b>Sleep Mode</b> , <b>Transition Time</b> and Off Mode	Available	Available
Scanners	$\leq 15$ min (Transition Time) $\leq 5\sim 10$ W (Standby Mode) $\leq 0.5$ W (Off Mode)	Available	Available
Door Phones, Cord/Cordless Phones	$\leq$ Various (Standby Mode)	Available	Available (Backlight off control)
Set-Top Boxes	$\leq 1$ W (Optional, Passive Standby) $\leq 10\sim 20$ W (Active Standby)	Available	None
Modem	$\leq 0.75$ W (Off Mode) $\leq$ Various (Standby Mode)	Available	None
Home Gateways	$\leq 10$ min (Transition Time) $\leq 10\sim 20$ W (Sleep Mode)	Available	None



- **Extending single product level program into system level program**

- Korea government is considering new programs about ICT convergence product.
- For example, BEMS(Building Energy Management System), HEMS(Home Energy Management System), FEMS(Factory Energy Management System), Data Center



## ● Ex. ENERGY STAR Set-top boxes Program

### ■ Calculation of Maximum TEC Requirement

$$TEC_{MAX} = TEC_{BASE\_MAX} + \sum TEC_{ADDL\_i}$$

Base Functionality	Version 3.0 Allowance (kWh/year)
Cable	60
Satellite	70
Cable DTA	35
Internet Protocol (IP)	50
Terrestrial	22
Thin-client / Remote	35

Additional Functionality	Version 3.0 Allowance (kWh/year)
Advanced Video Processing	12
CableCARD	15
Digital Video Recorder (DVR)	45
DOCSIS®	20
High Definition (HD)	25
Home Network Interface	10
Multi-room	40
Multi-stream – Cable/Satellite	16
Multi-stream – Terrestrial/IP	8

**Adding more functions, power allowance will be bigger.  
In other words, products need more functions to get enough power allowance.**

**Products consume more power to pass the program.**



# Thank you.

Sanguk Jung  
IT Testing & Certification Laboratory  
Telecommunications Technology Association  
jjssgg@tta.or.kr, + 82-10-5111-1241