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IEC62623: Measuring the Energy Consumption of Personal Computing Products

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Aligning Energy Efficiency Regulations for ICT Products: Developing a Strategic Approach
Seoul, Korea
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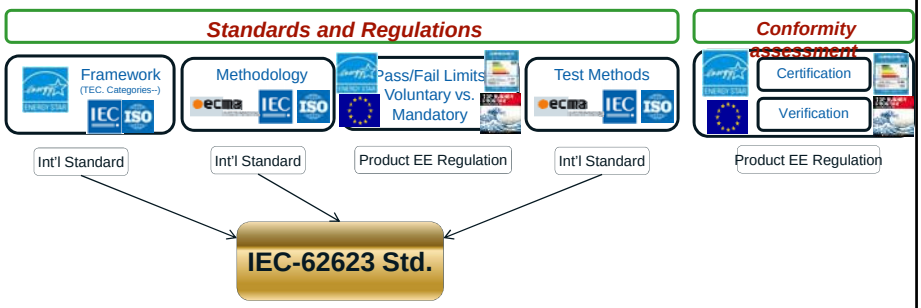
Agenda

- Overview/Background
- IEC-62623 snap shot
- Normative and informative elements of IEC-62623
- Summary

ICT standards and regulations IEC-62623 Framework



IEC-62623 Background and Motivation

- Personal Computer energy regulations are accelerating
- Governments are regulating energy consumed by electronic equipment which requires a standard way to calculate/measure that energy
- TC38/TG2 under ECMA published Ecma-383 standard in Dec. 2010 (3rd Ed)
- IEC TC108 ENV WG served as the liaison to Ecma TG (to convert Ecma-383 to IEC-62623)

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Ecma-383/IEC-62623 - Snapshot

- **Methodology:** Single global method for describing, measuring and evaluating PC energy consumption & usages
- **EE Metric:** Annualized energy consumption TEC metric based on power modes, duty cycle and a majority usage profile
- **Categorization:** Provides a market driven flexible category framework to compare like for like products
- **Implementation:** Converted ECMA-383 3rd edition into an IEC standard 62623.
  - IEC-62623 currently in Final Draft International Standard (FDIS) phase, final approval release expected Q4 2012

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Key Elements of IEC-62623

Normative (critical for Int'l convergence)

- Product scope; Terms; Definitions; abbreviations; Power Modes
- Majority Power Profile, Duty Cycle attributes & weighting, and annualized energy consumption equations
- Product category attributes (common list of attributes used to set up product categories – separate for Notebooks, Desktops, and Integrated Desktops computers)
- Test set-up (test environment to conduct test procedure)
- Test Procedure (procedure to measure each power mode, test conditions, etc.)
- Product categories (posted in International registers to allow flexibility for faster category changes than the standard)
  - *Note: It is not critical to maintain identical product categories in different jurisdictions. Product categories should be selected from International Registry (once established, and should be based on shipping products in the jurisdiction.* ***It is important that product attributes and criteria that make up the product categories (Cat A, Cat B, Cat C, etc.), should be consistent.***
- Annualized Energy consumption formulas (criteria for active workload, and formulas with and without active workload)
- Critical equipment specification/tolerances (True RMS watt meter, luminance meter, etc.)

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Key Elements of IEC-62623

Informative (less critical for convergence)

- Reporting of test results, test conditions, formats (this will be a candidate for convergence in the future, once there is agreement on a single conformity testing)
- Majority and minority profiles
- Methodology for conducting profile studies
- Sample Energy calculations needed for calculating and reporting
- Power measurement methodology not addressed under Normative
- Procedure for the registration of categories for IEC 62623 (see product categories above)

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Not in scope for IEC-62623 standard

- Pass/fail criteria (user of the test result defines the criteria)
- Criteria for data-set, needed to establish pass/fail limits for voluntary or MEPs programs (Base TEC limits, TEC adders)
- Product conformity assessment criteria (for each jurisdiction)
- Product energy efficiency labeling criteria (single/multiple grades, criteria, and implementation methods)
- Product certification and accredited lab criteria

Summary

- Governments are regulating energy consumed by electronic equipment which requires a standard way to calculate/measure that energy
- IEC-62623 is a standard to calculate/measure and categorize computer equipment for energy
- Standardized methodology to group client computers with similar capabilities and usage
- TEC is calculated through a combination of statistically measured power states weighted by usage duty cycles
  - TEC based on a majority usage profile (Enterprise PCs); establishing a new majority profile will require a new study (future focus)
- IEC-62623 final approval release expected Q4 2012; anticipate adoption by EU Commission on ErP Lot 3 and next revision of ENERGY STAR® Computers Version 6.0.