Audio/Video Inter-Device Power Control

Background

Electronics are an increasing fraction of electricity use in buildings, with those devices that support audio and visual display one of the largest portions. Collections of interconnected A/V devices in buildings are becoming larger as they become networked to A/V devices in other rooms, to traditionally IT devices, to non-electronic devices, and to the Internet. Managing the power state of such connected devices is increasingly difficult, resulting in user confusion and wasted energy.

What is needed is an overall architecture for how power state could be managed automatically to both increase user amenity and reduce energy use. The key guiding principle is that in future, devices should:

"Wake up when they need to; go to sleep when they can"

Accomplishing this will require the active engagement of A/V equipment manufacturers, standards organizations, and public policy organizations.

Timeline


December 2013. CEA R7 creates WG16 to address this topic area.

January 2014. CEC project concludes.

February 2014. R7WG16 holds first meeting.

Documents

The following are background material for consideration of standards development needs in this area.

- **Products:** Existing Product Assessment and Conclusions (June 2012)
- **Technologies:** Analysis of Communication Link Technologies (September, 2013)
- **Use Cases:** Use Cases, Analysis Method, and Candidate Device Behavior Model (December 2012)
- **Potential standard content:** "Sleeping Streams": Technology Standards Proposal (October 2013).
- **Audio/Video Inter-Device Power Control:** A conference paper on the topic, presented at the Energy Efficient Domestic Appliances and Lighting (EEDAL) conference in September 2013.
- **1-page summary:** Automatic Power Control of A/V Devices using Sleeping Content Streams (February 2013)

Sleeping Streams

The proposal is to add a "sleep" state to A/V content streams, wherein the stream is not active, but knowledge of it's structure is retained in the participating devices to enable it to be "woken" quickly. The diagram below shows a potential state diagram for content streams.
Possible next steps:

- Creation of a 'meta-standard' that defines the semantics of sleeping content streams; CEA is the organization best suited to hosting this.
- Addition of features to existing standards to enable named, persistent content streams.
- Implementation of the sleeping stream functionality into products, including how to deal with legacy products.
- User education to understand the new scheme.

Contact

Bruce Nordman, 510-486-7089, BNordman@LBL.gov

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