

Task 1: Video Recorder Definitions

Anson Wu

Background

VCRs to present

- First VCRs in 1970's. Analogue, magnetic tape recording
 - Recording from TV
 - Time and place shifting
- 1990's DVD. Optical, digital disc
 - Majority devices playback only
 - Place shifting
 - Very low cost media and hardware
- 2000 Blu-ray and hard disk drive
- Other formats inc Laser Disc, VCD, DivX
- Current and future trends
 - Optical disk recording
 - Combined, HDD, optical drive
 - Solid state drives

- Need to capture current and future products in robust, distinct, flexible definition


Existing Definitions

Device specific definitions

- Few existing definitions, focus on particular devices
- CEC: Digital Versatile Disc (DVD) Product: A commercially available electronic product encased in a single housing whose intended purpose is the production or recording of digitized video signals on a spinning reflective disc media.
- ENERGY STAR: “Digital versatile disc (DVD) player” means a commercially-available electronic product encased in a single housing that includes an integral power supply and for which the sole purpose is the decoding of digitized video signals on a DVD.
- CEC: “Video Cassette Recorder (VCR)” means a commercially-available analog recording device that includes an integral power supply and which records television signals onto a tape medium for subsequent viewing
- ***Production/decoding [playback] of [pre-recorded] video signals from a storage medium***




Risk assessment of definitions

Included products

			
Blu-ray player	DVD/HDD player/recorder	HDD media player (enclosure only)	DVD player
Optical Drive Blu-ray/DVD decryption and decoding Ethernet Video out	Optical drive Integrated HDD Video encoding and decoding Tuner Video in Video out	WiFi USB Ethernet Interface for internal HDD (HDD not supplied) Decoding support for multiple video codecs and file formats Video out	Optical Drive DVD decryption and decoding Video out

Risk assessment of definitions

Excluded products

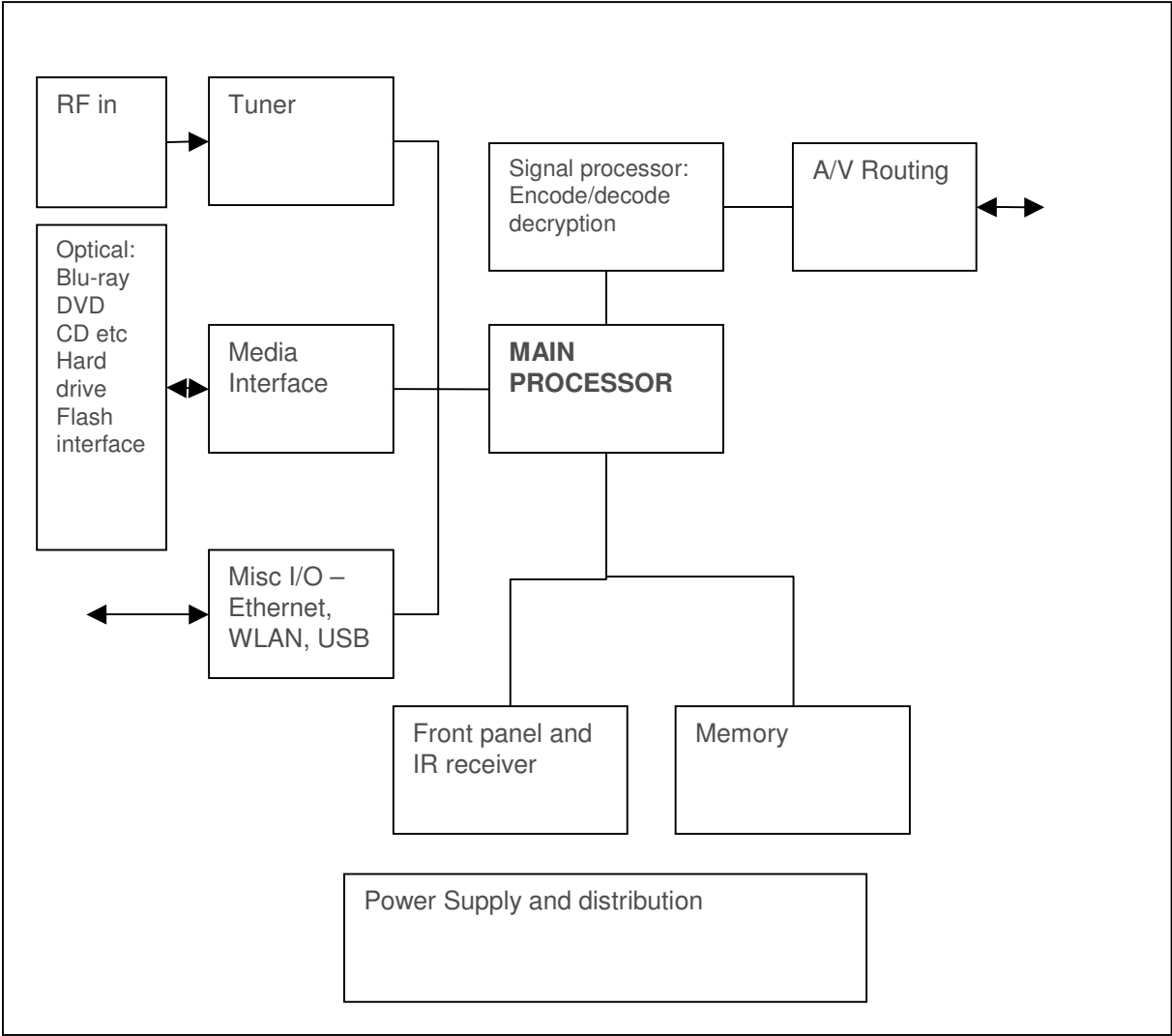
		
Set top box	Home cinema system (with speakers)	Portable DVD player
Tuner HDD Video out	Optical drive DVD decoding Video out Audio amplification Speakers	Optical drive DVD decoding Integrated screen Battery operation

- Streaming media players/media center extenders??

Draft definition for Lot 3 Prep Study

Definition

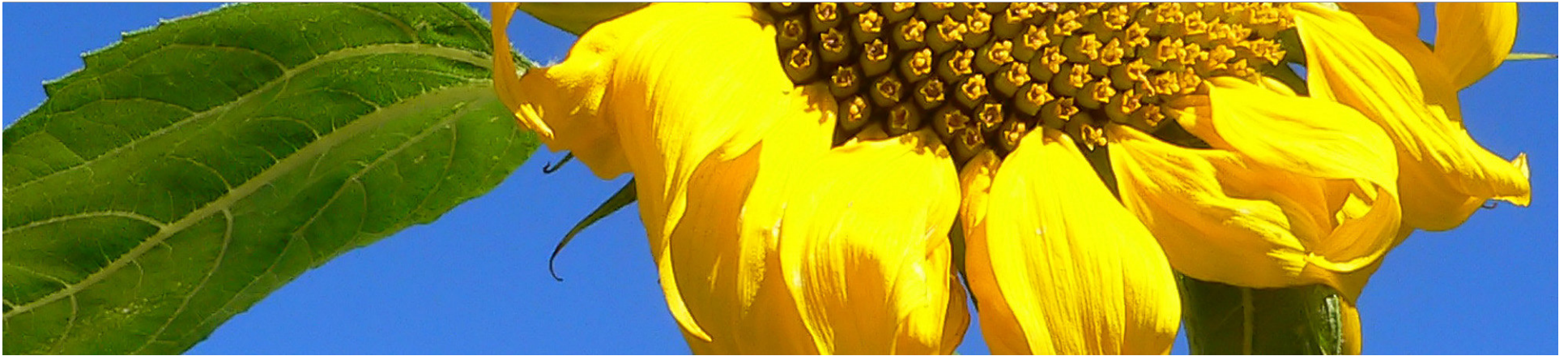
- Based on the definition risk assessment, a video player/recorder is a stand alone device which:
 - Decodes video to a separate display
 - from pre-recorded media via an integrated media interface such as an optical drive, or HDD interface
 - Has no integrated audio amplifier
 - Has no tuner unless it records on a removable media in a standard library format
 - Is designed to be primarily mains powered



Existing Legislation and Policies

Regulation and labels

- WEEE, RoHS, EuP Standby IM, EuP EPS IM
- ENERGY STAR, Korea Eco label, Nordic Swan, Blue Angel, Top Runner
- Many current policies do not reflect market well
- Top Runner is the most up to date
- New ENERGY STAR and Blue Angel are in development



Task 2 and 3: Video Recorder Market and Consumer behaviour

Anson Wu

European VR Market

More data is needed

- Can assume every household with a TV has a VR based on very low cost of DVD players ~ 185million
- But less than the total number of TVs ~ 350 million
- This translates to approx 25-60 million devices sold per year based on 6-7 year lifespan
- Please suggest data sources, or industry data

Market trends

Market is changing

- More diverse features
 - Networked products
 - high definition
 - combination optical drive and HDD
- Competition from other products
 - STBs allow time shifting, but not place shifting or archiving
 - Portable media players with docks can place shift but not record...yet
 - Home cinema systems can present surround sound but not record
 - Computers can play and are highly networked
 - Game consoles can play and record

More Market Trends

Technology trends

- High definition (Blu-ray)
 - 1080p 40Mbps video quality and 7.1 surround sound
 - HDTV needed for full benefit
 - Costs are high compared to DVD but falling rapidly
 - BD players are backwards compatible with DVD
 - Competition from internet download/streaming
- Internet access and HDD players
 - BD Live
 - Transfer of existing media library to HDD/online storage?
 - Purchase of downloadable video to own/rent?
 - Size of video files – long download time or lower video quality
 - Speed of internet connections increasing
- Summary
 - Stock will not increase
 - Blu ray will largely replace DVD
 - But long term will be out competed by internet

Daily use patterns

More data is needed

	Live pause	Video playback	Video recording	EPG downloading	Fast start	Standby
Tuner				1-2 hr	Same as TV	Remaining time
HDD and tuner	Same as TV, possibly up to 16 hr.	<i>accounted for in live pause time - 1 hr</i>	<i>accounted for in live pause time - 2hr</i>			
HDD		1 hr	<i>Internet download time (?)</i>		Same as TV	
Optical drive		0.5-4 hr	?		Same as TV	