

Project: IEEE P802.15 Working Group for Wireless Personal Area Networks

Submission Title: [Projected applications and data rate]

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Re: []

Abstract: [Update of activities in the channel modeling sub-group and call for participation]

Purpose: [Contribution to 802.15 TG3c at July 2005 meeting in San Francisco]

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Profile of Submitted Applications

#	Description of Applications	Indoor	Document Number
1	<ul style="list-style-type: none"> Gigabit Ethernet link, wireless IEEE1394, wireless USB Wireless home video server connected to HDTV, PC and other video devices 	<ul style="list-style-type: none"> LOS, FDD, TDD Data rate: 100 Mbps to 3.2 Gbps Range: ≤ 12 m 	19, 98, 118, 348, 351, 653, 665
2	Ad-hoc meeting, heavy content download, distribution system	<ul style="list-style-type: none"> LOS, NLOS, TDD Data rate: 62 Mbps, ≥ 1 Gbps Range: 3 m to 20 m 	97, 155, 156, 352, 514
3	Small office/meeting scenario, general office applications, PowerPoint applications	<ul style="list-style-type: none"> LOS and NLOS OFDM Data Rate: ≤ 200 Mbps Range: 2 to 4 m Space diversity 	141

Source: 15-05-0353-03-003c-draft-tg3c-system-requirements

The Vision

- Previous applications provided a snap shot of existing applications
- Assuming that 802.15.3c becomes a standard in 2007- 2008 timeframe

What will be the prevalent applications then?

802.15.3c work must be meaningful and pertinent for applications in 2007 – 2008 timeframe

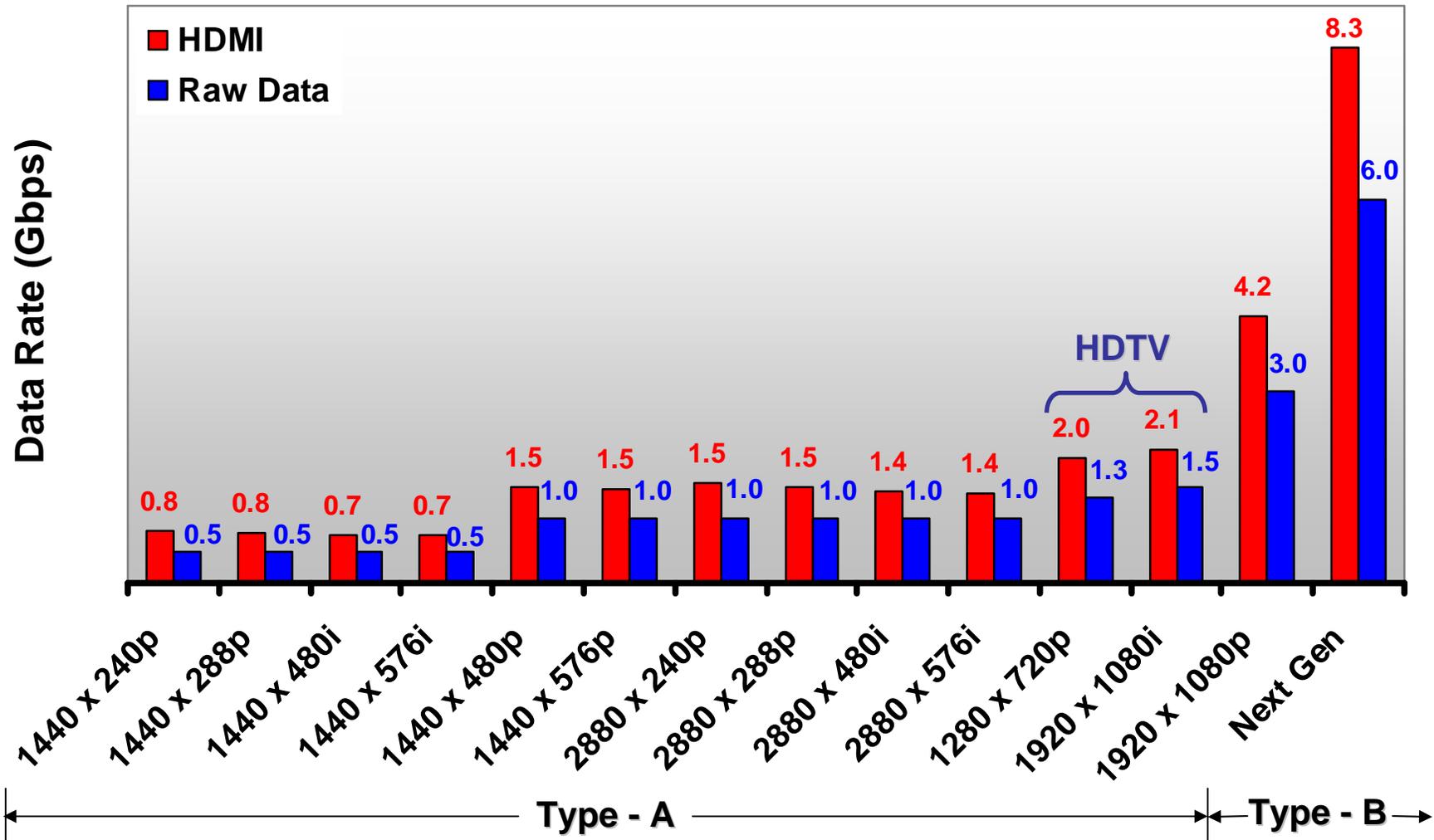
Application Forecast



What is the future?

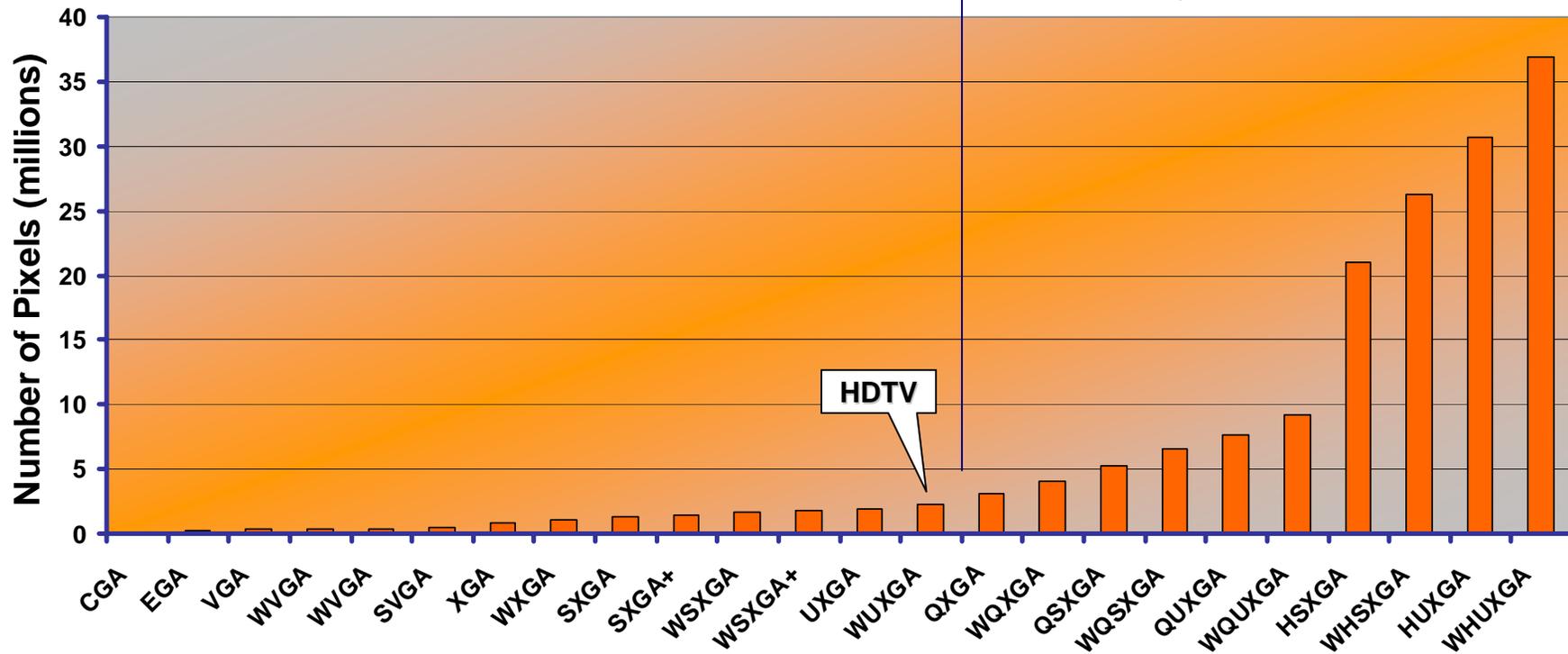
Understand the market trends to project the applications and data rate requirements in 2007 – 2008 timeframe

HDMI Data Rate



Data Intensive Applications

- Medical imaging
- Digital cinema
- Consumer electronics
- Specialized applications – air traffic control, etc.



Video Gaming HDTV Resolution

	PS3	XBox 360	Raw Data Rate (Gbps)
1280 x 720p	✓	✓	0.5 to 1.3
1920 x 1080i	✓	✓	1.2 to 1.5
1920 x 1080p	✓		1.5 to 3.0

Product life cycle is 3 to 5 years

Enterprise Network

- Gigabit Ethernet modular switch port outsold 100 Base ports, 3.4 million to 3.1 million
- Gigabit Ethernet port costs \$280, Fast Ethernet cost \$140
- 10 Gigabit Ethernet port shipment increased by 71% in 4Q 2004
 - Second quarter of aggressive growth
- P802.3an is developing standard for 10 Gbps copper standard

10 GigE-To-The-Desk ??

Investment In Infrastructure

"The market in the U.S. for HDTV and IP video, as well as broadband Internet services, is developing into the strongest in the world, which makes it highly attractive for PanAmSat to add capacity and take advantage of this growth opportunity."

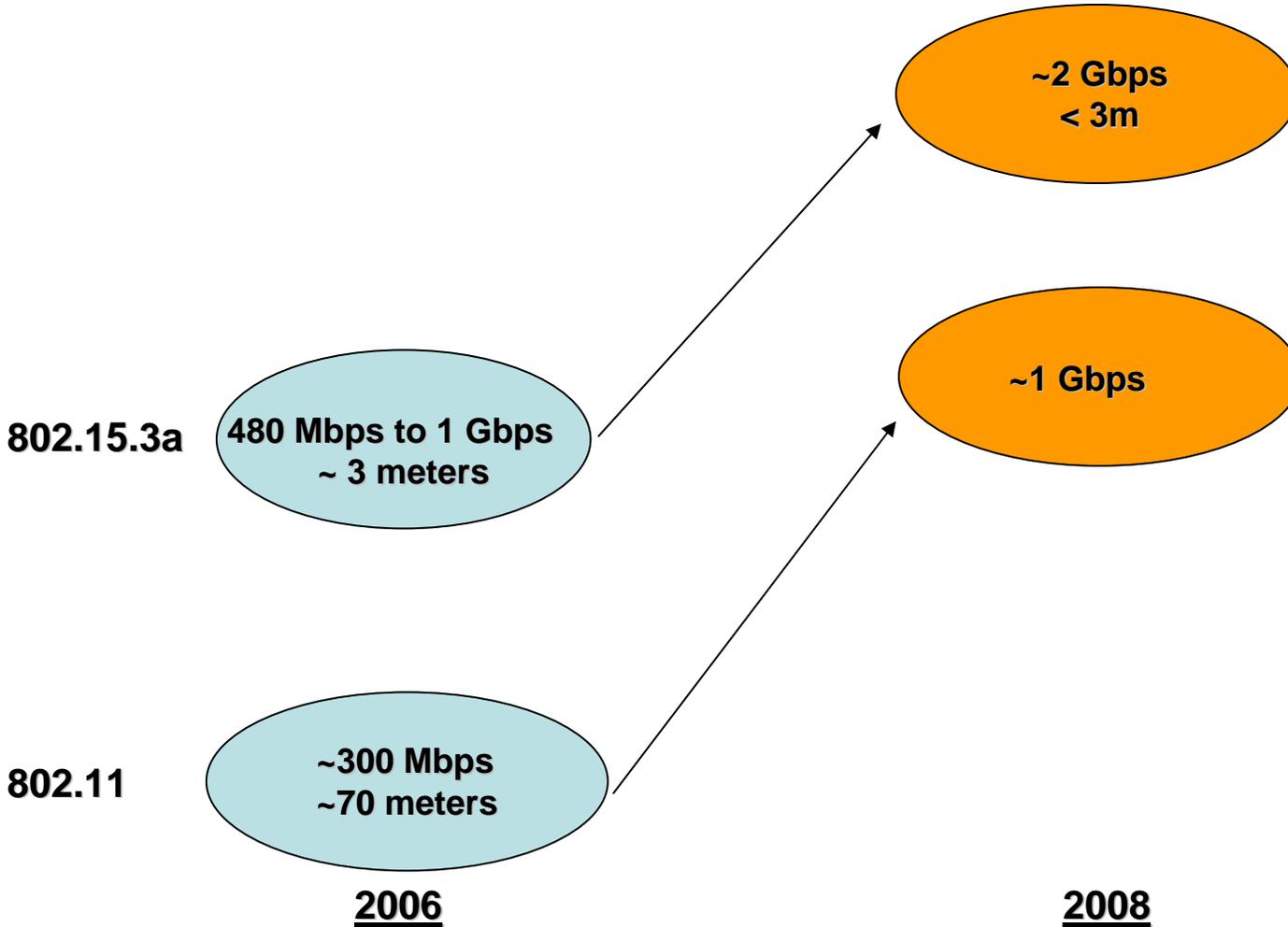
Source: Joe Wright, CEO of PanAmSat , press release on June 27, 2005

The Alternatives

Positioning 802.15.3c

Differentiators

- Higher data rate
- Greater distance



- Higher data rate

Conclusions

- **1 Gbps minimum *throughput* at the PHY SAP**
 - Lower data rates transmitted at a burst rate of 1 Gbps minimum
- **10 Gbps must be the vision**
- **Not encumbered by legacy – applications and standards**

