VideoLocus Inc.

AVC Real-Time SD Encoder Demo

July 2002

1st Realtime JVT SD Encoder

- MPEG-4 Part 10/H.264 (WD2R8-compliant)
- Real-time video encoder
- Standard definition (720x480)
- Full frame rate (30 f/s)
- DVD quality
- Very low bit rate (near 1 Mbps)

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Invitation to See Demo

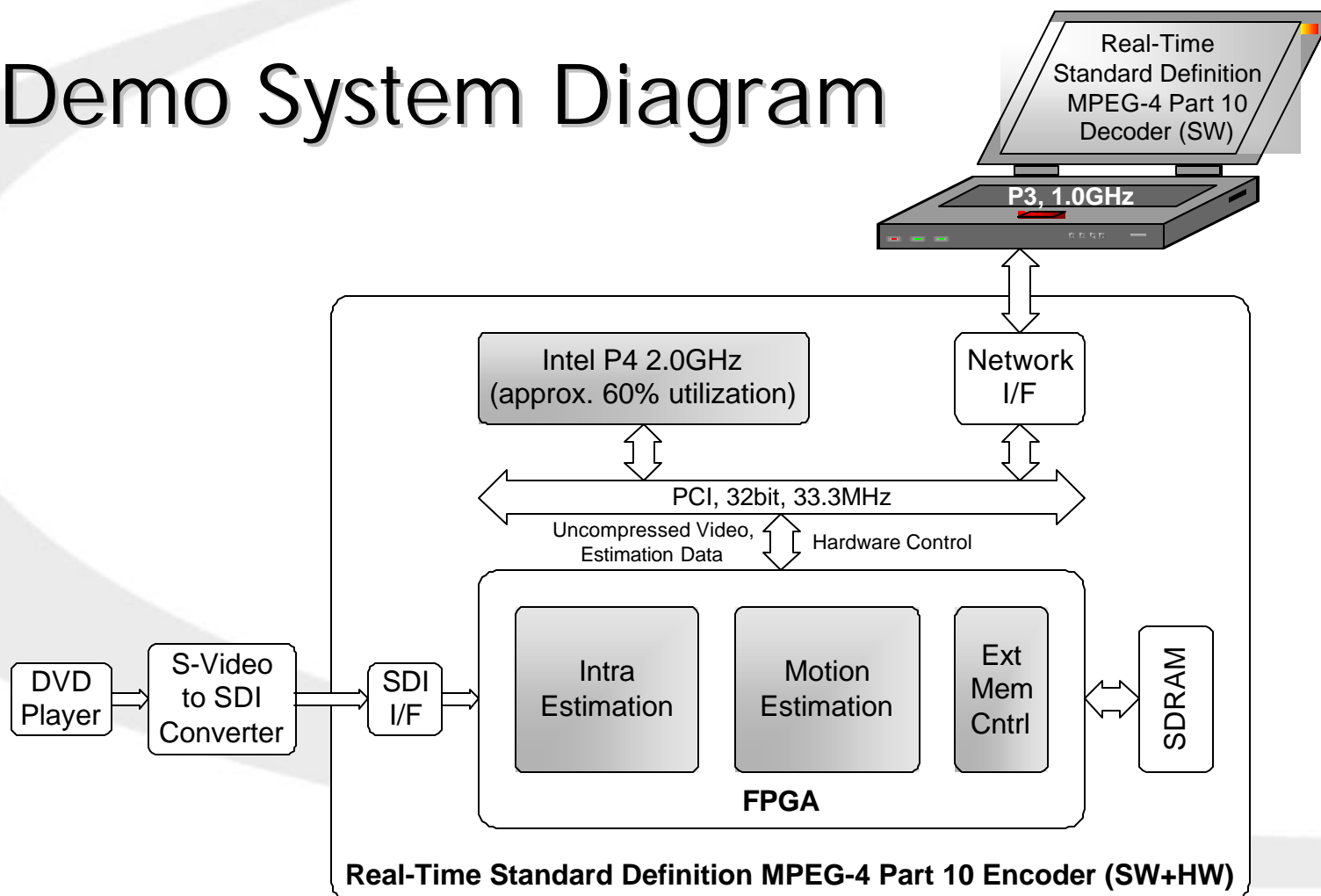- JVT Meeting, Klagenfurt
- Time & Place to be assigned.
- Lowell Winger

local address July 22-26, 2002:

Hotel Europa
Villacher Straße 222, A-9020 Klagenfurt

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Demo System Diagram

Real-Time Standard Definition MPEG-4 Part 10 Decoder (SW)

P3, 1.0GHz

Intel P4 2.0GHz (approx. 60% utilization)

Network I/F

PCI, 32bit, 33.3MHz

Uncompressed Video, Estimation Data

Hardware Control

DVD Player

S-Video to SDI Converter

SDI I/F

Intra Estimation

Motion Estimation

Ext Mem Cntrl

SDRAM

FPGA

Real-Time Standard Definition MPEG-4 Part 10 Encoder (SW+HW)

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H/W Assisted S/W Implementation

- I and P frames (B frames in development)
- No Intra8 modes (in development)
- Full, ½, and ¼ pel Motion Estimation
- VLC (CABAC in development)

Demo Encoder H/W Functions

- Intra Estimation
- Motion Estimation
- Skip Estimation
- Estimation Decision
- Memory Controller
- Video Input
- Host Interface (PCI)

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Demo Encoder S/W Functions

- Transform/Quantize
- Inverse Quantize/Inverse Transform
- Motion and Intra Compensation
- Loop Filter
- VLE
- Rate Control (adaptive quantization VBR)
- Frame-level compression decisions
- UDP/IP multicast compressed stream output

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In Development

- CD and FCD compliance
- B frames support
- Extended Motion Estimation
- Enhanced Rate Control
- Entropy Coding H/W Assist
- System-level packaging and audio
- Pre- and post-processing filters
- Sub-real-time HD encoding

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Evaluation Platform

- VideoLocus will sell MPEG-4 Part 10 (AVC) Evaluation Platforms
  - Real-time SD encoder hardware platform
  - Real-time SD software decoder (P3, 1000MHz)
  - AVC stream analysis tools
  - Features complete set of coding tools (beyond current demo)
- Suitable for evaluating AVC in several scenarios
  - Analyze AVC use in Broadcast, Web Streaming, and DVD Authoring applications
  - AVC decoder qualification and verification platform
- Tracks compliance with evolving standard
  - Leverages programmable environment
  - VideoLocus will issue updates that track changing standard
- Availability starting in Sept 2002

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About VideoLocus Inc.

- **Technology:** VideoLocus develops next generation video compression products and technologies, emphasizing very low bit rate, high quality, full resolution, and full frame rate applications

- **Applications:** VideoLocus technology drastically reduces the cost and enables entirely new applications in consumer electronics, next generation DVD, DSL transmission, security/surveillance, TV-over-Internet, and many other storage and communications markets

- **Standards:** VideoLocus is dedicated to open, standards-based technology implementations and is an active leader in international industry standardization efforts

Questions? More Info?

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