RTP Payload Format for MVC Video – draft-wang-avt-rtp-mvc-00

Ye-Kui Wang, Nokia
ye-kui.wang@nokia.com

Thomas Schierl, HHI
thomas.schierl@hhi.fraunhofer.de
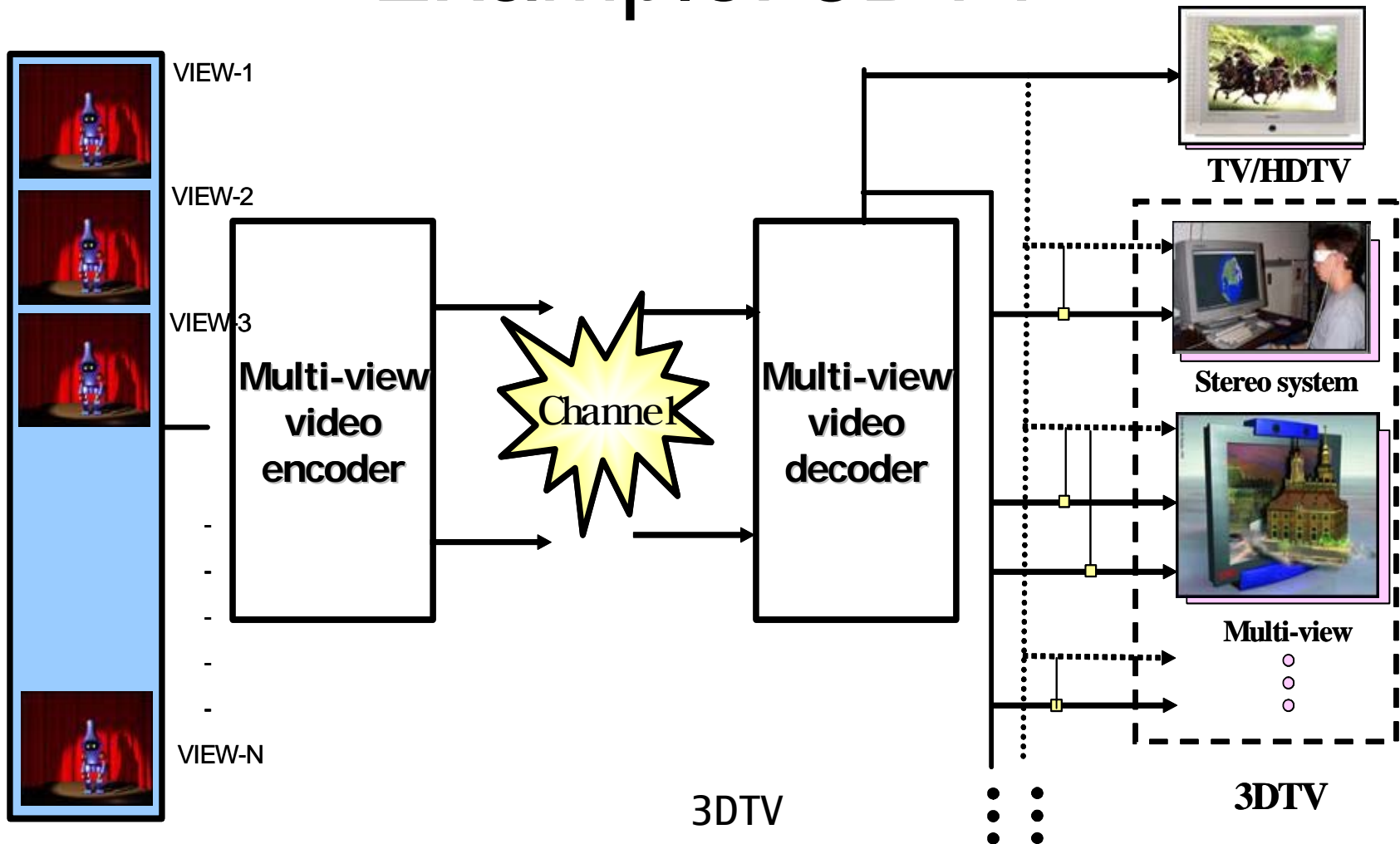
03 December 2007, Vancouver

Outline

- MVC introduction
- MVC standardization status
- Summary of the draft
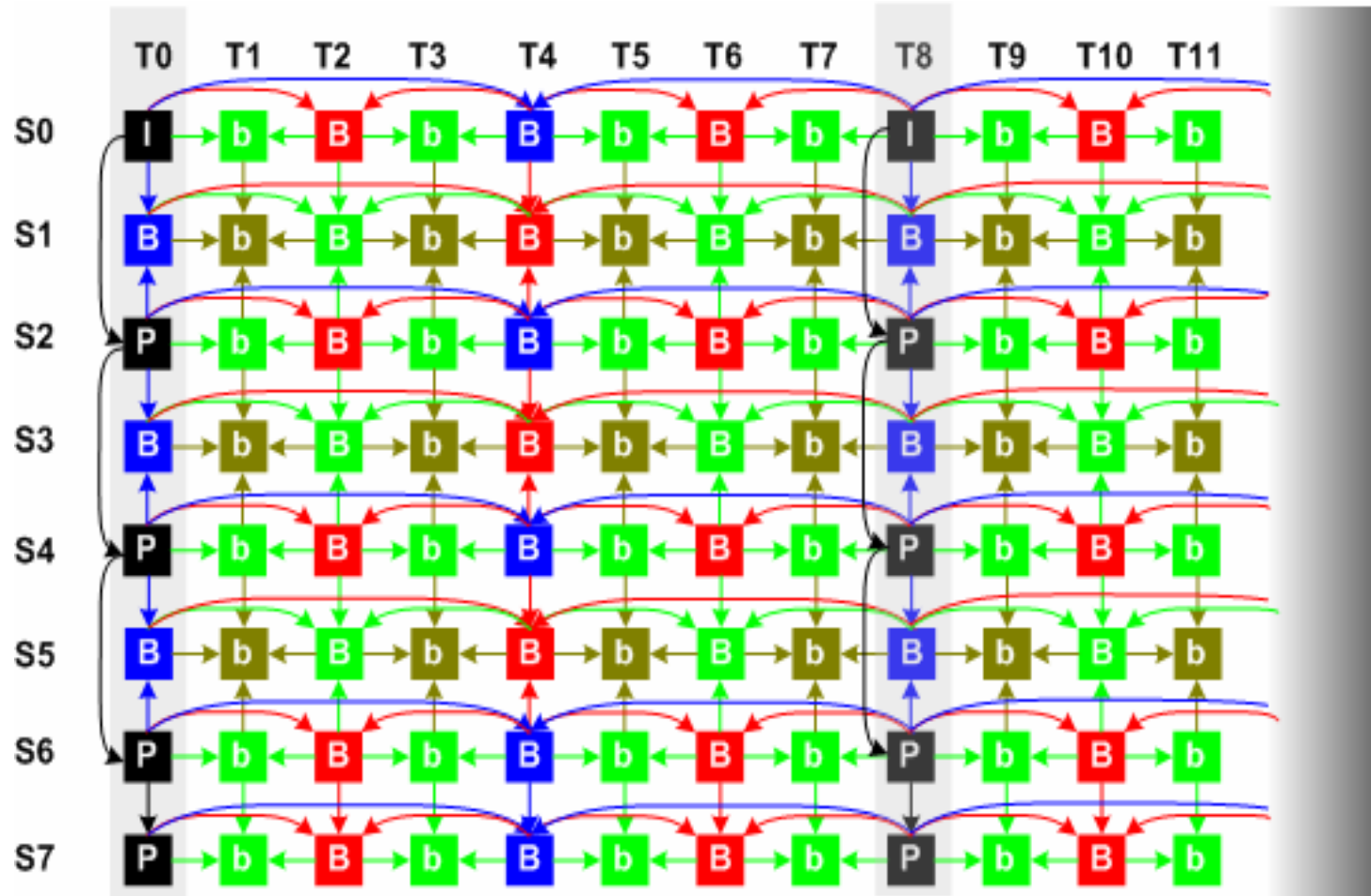- Questions to WG

Multiview video coding

- Coding video sequences captured by multiple cameras from the same scene

Example: 3DTV

VIEW-1

VIEW-2

VIEW-3

-
-
-
-
-

VIEW-N

Multi-view video encoder

Channel

Multi-view video decoder

TV/HDTV

Stereo system

Multi-view

3DTV

3DTV

AVT IETF70 - Wang, Schierl - draft-wang-avt-rtp-mvc-00

A typical MVC coding structure

MVC v.s. SVC

MVC is similar to SVC in many places

- Another extension to H.264/AVC
    - Inherited NAL unit based bitstream structure
        - But the NAL unit header structure is different
    - Inherited the parameter set concept
    - Base view must be H.264/AVC compatible
    - Each view itself may be temporally scalable
- Inter-view prediction is used to improve coding efficiency, similar to SVC inter-layer prediction

Status of MVC Standardization

- Work started in JVT in July 2006

- Latest Joint Draft (JD) in JVT-Y209, and Joint Multiview Video Model (JMVM) in JVT-Y207, both (will soon be) publicly available from http://ftp3.itu.ch/av-arch/jvt-site/2007_10_Shenzhen/

- According to the current schedule, the standard will be ratified in 2008
  – Desirable to have a payload format available shortly thereafter

Summary of the draft

- Due to the similarity between MVC and SVC, the MVC RTP draft is also similar to the SVC RTP draft
  - Packetization rules re-used
  - PASCI NAL unit (table of contents of aggregation packet) re-used
  - Layered multicast process re-used

- One difference – new media type

- It is at this point unclear whether the MVC draft requires new packet formats, or other non-signaling mechanisms

Question to WG

Which of the following options for draft structures to use?

1. Draft contains description of MVC, all packet formats (basically copy-pasted from the SVC draft), and signaling. Reference only to RFC3984, not to the SVC draft

   + cleaner draft design, self-contained

   - redundancies; most people implementing MVC will probably have implemented SVC before, and for them a delta would be better

   - potential alignment issues

2. Draft contains description of MVC, short summary of packet formats new in SVC (e.g. PACSI), and signaling. All other info is being referred to both SVC draft and RFC3984

   + shorter, more concise draft

   - users have to read/understand/refer (too?) many documents

3. Merging of SVC/MVC drafts

- Thank You!