RTP Payload for Anti-shadow Redundancy

< draft-xie-avt-rtp-anti-shadow-00.txt>

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IETF is notified about potential Motorola IPRs on this draft

 Streaming (broadcast/multicast/unicast) of pre-recorded media over IP to wireless mobile devices is getting more attentions lately.

Examples: 3GPP, 3GPP2, and OMA are all working on broadcasting or multicasting multimedia content to next generation IP mobile phones.

• When the receiver is wireless and mobile, there is a possibility that the signal may get blocked by buildings, trees, tunnels, etc. (cellphone and XM radio users know this too well).

• This type of blockage can run from a fraction of a second to a couple of minutes and FEC is not effective.

Sender side Operations

• Base media stream and a forward-shifted anti-shadow stream sent at the same time.



- Amount of forward shift (< 1 sec. to minutes) determines the max length of blockage that can be recovered without service interruption.
- Works with any codecs and the anti-shadow stream may use different codec than the base stream.
- The anti-shadow stream may be a lower-quality or decimated version of the base media stream to conserve resources. For example
 - If the base media stream is audio, the anti-shadowing stream may be digitized at a lower rate.
 - If the base media stream is an MPEG-4 video stream, the anti-shadowing stream may be a lower quality version of the base media stream.

Receiver in normal operation state



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Receiver in anti-shadow mode



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Anti-Shadow RTP Payload Format

• Propose to use RTP header extension to carry anti-shadow frames.

• AS header extension is defined as:

- Receivers that do not understand anti-shadow header extension ignore it.
- AS RTP packet in the extension header is a standard RTP packet that carries one or more AS frame (padded to the next 32-word boundary, if necessary).
- The timestamp in the AS RTP packet MUST use the same base and resolution as that of the primary RTP header.
- The amount of forward-shift is indicated by the timestamp of the AS RTP packet and SHOULD be a constant for a given session.
- AS stream frame(s) carried in the AS RTP packet may be differently coded, use a different mode, and/or be decimated from the primary stream.

Welcome review and comments