ITU-T P.NATS Phase 1 – Current progress and plans

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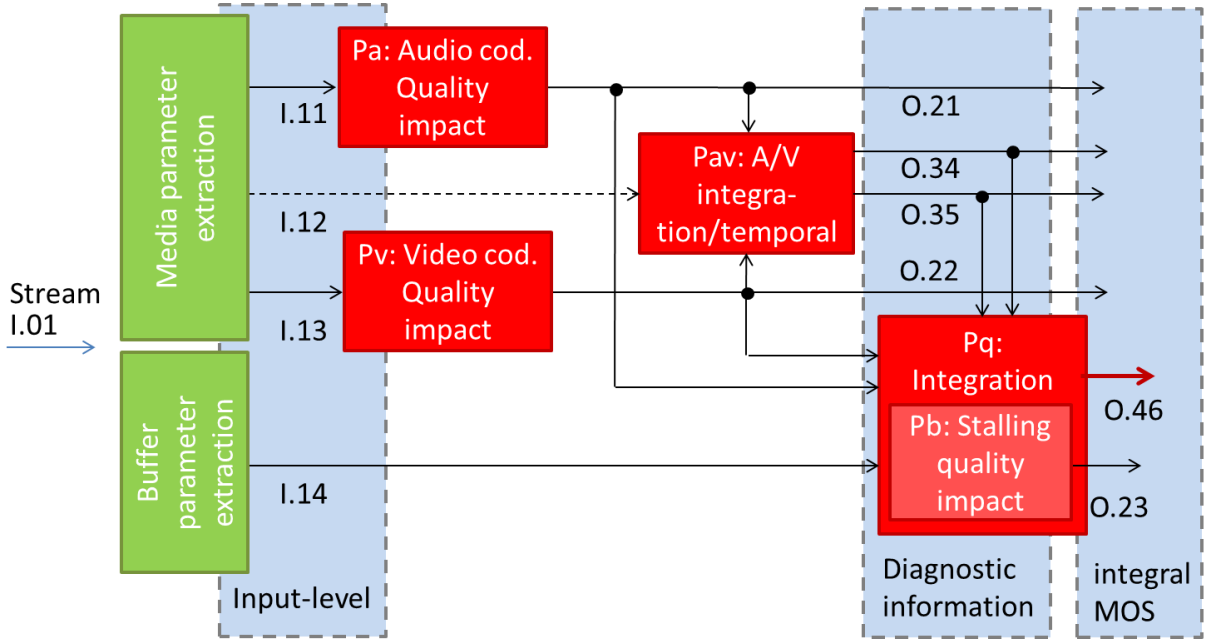
Development conducted in ITU SG12 Q14 (J. Gustafsson , A. Raake)

P.NATS overview

- Services: **HTTP-streaming, adaptive**
- Video-encoding-resolutions: **360p, 480p, 720p, 1080p**
- Covered degradations:
  - Encoding changes (bitrate/QP, framerate, scaling) due to stream-switching
  - stalling,
  - initial loading.
- Input: model **mode-dependent** , from side-info to full bitstream
- Output: audiovisual quality estimate for up to **5 min** video + diagnostic information
- 8 participants

P.NATS building blocks



I.GEN: display resolution

I.11: audio coding information (e.g. audio codec, bitrate, ..., non-/encrypted bitstream*)

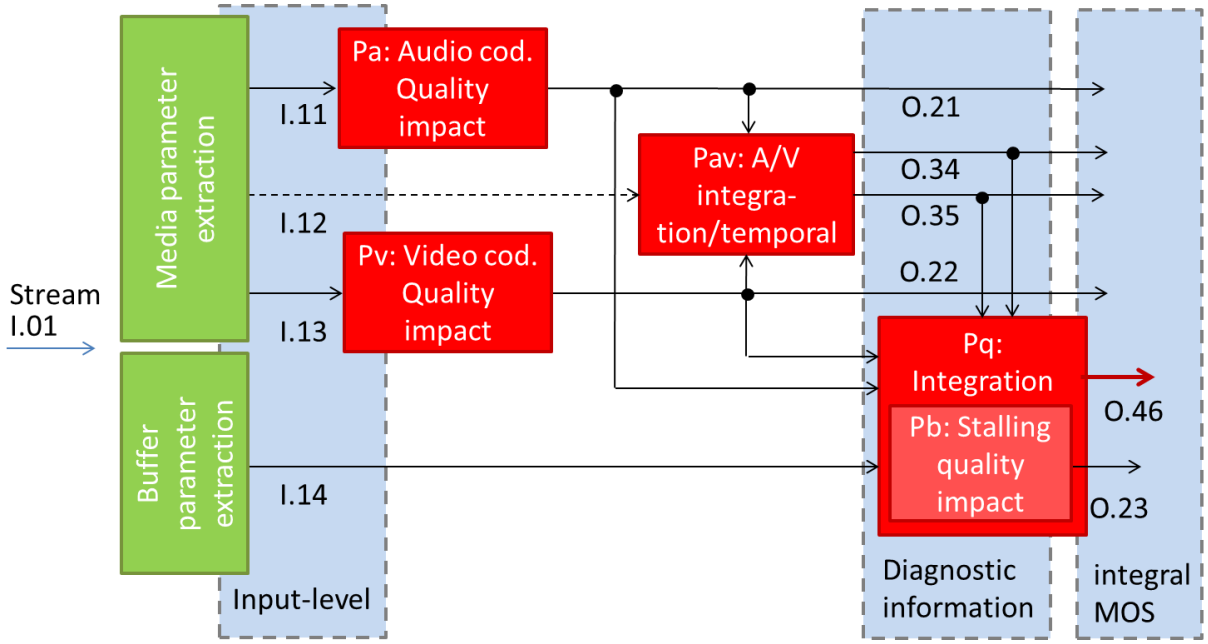
I.13: video coding information (e.g. video codec,...,frame-based info*, non-/encrypted bitstream*)

I.12: I.11 + I.13 without the bitstream

I.14: Stalling event start and duration

(* model-mode dependent)

P.NATS building blocks



O.46: Final media session quality score, single score for the session

Diagnostic info:

- All inputs I.NN
- O.21: Audio coding quality per segment (here segment = 1s)
- O.22: Video coding quality per segment
- O.34: Audiovisual segment coding quality per segment.
- O.35: Final audiovisual coding quality score per session.
- O.23: Perceptual buffering indication per session

P.NATS modes

Mode	Encryption	Video frame info available	Bitstream parsing
0	Yes	No	None
1	Yes	Yes	Headers only
2	No	Yes	2% of bytes
3	No	Yes	100% of bytes

P.NATS subjective tests

Test design

- Audiovisual
- ACR, 5-point scale
- No SRC repetition within a test, but 50%-67% SRCs re-used between labs
- Use of anchors, at least for tests with same SRCs duration
- Degradation types: quality switches, stalling, initial loading, mix
- Same proportion of degradation types in all tests

Training

- 5 databases from P.NAMS-PD (progressive download)
- 2 buy-in databases (progressive download and adaptive streaming)
- 16 new training databases
  - 9 LCD: 4x1min-SRCs, 3x3min-SRCs, 2x5min-SRCs
  - 8 mobile: 4x1min-SRCs, 3x3min-SRCs, 1x5min-SRCs

Validation

- 16 validation databases

P.NATS current progress

- Stable test procedure
- Stable processing chain
- Current activities:
  - Selection of SRCs for training tests
  - Test matrices design for training test

P.NATS work plan

- Training SRCs: June 30
- Training test matrices: June 30
- Training PVSs: July 30
- Training databases submitted and checked: Sept 30th
- Model submission: Nov. 20th
- Validation SRCs: Nov. 31st
- Validation test matrices: Dec. 23rd
- Validation databases submitted and checked: Feb. 28, 2015
- Winning model selection: March 15, 2015
- Consent P.NATS: May 2015 (ITU SG12 meeting)

THANK YOU!