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MPEG VIDEO CODING

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Title	MIV anchors
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Abstract

This document provides the generated ISO/IEC 23090-12 MPEG Immersive Video (MIV) anchors based on the Common Test Conditions for MPEG Immersive Video and with use of the Test Model 8 for MPEG Immersive Video (TMIV) reference software 8.0.2. The crosscheck was successful.

1 Introduction

The *Common Test Conditions for MPEG Immersive Video* (CTC) document [N0051] specifies three anchors:

- MIV anchor (A), tested in:
  - A97: full frame configuration with 97 coded frames,
  - A17: reduced frame configuration with 17 coded frames,
- MIV view anchor (V), tested in:
  - V17: reduced frame configuration,
- MIV decoder-side depth-estimating anchor (G), tested in:
  - G17: reduced frame configuration.

All anchors are based on *Test Model 8 for MPEG Immersive Video* (TMIV) reference software 8.0.2 [N0050] and *VVenC* software, version 0.2.0.0.

2 Anchor generation and crosschecking

This document is a collaborative effort of 7 organizations: Poznań University of Technology, Nokia, Tencent, Philips Research Eindhoven, Electronics and Telecommunications Research Institute, Intel and Interdigital.

Anchors A17, A97 and V97 were generated by 6 organizations, as listed in Table 1. G17 anchor was generated by 3 organizations, as listed in Table 2.

The participants performed a full crosscheck.

Table 1. A17, V17 and A97 anchors generation.

Organization	Sequences	Compiler/system	Version/commit
PUT	B, I, L, O, P	GCC 9.3.0 Linux 64-bit	TMIV: 8.0.2 IV-PSNR: 3.0
Nokia	C, E, Q, T, U	GCC 9.3.1 Linux 64-bit	TMIV: 8.0.1 IV-PSNR: 3.0
Tencent	B, O (+ A17&V17: D, J, N)	GCC 8.1 Linux 64-bit	TMIV: 8.0.1 IV-PSNR: 2.1.1
Philips	C, I, L, P, Q (+ A97: D, J, N)	GCC 10.2 Linux 64-bit	TMIV: 8.0.1 IV-PSNR: 3.0
ETRI	A, D, J, N, R	VC16 Windows 64-bit	TMIV: 8.0.1 IV-PSNR: 2.1
Intel	A, E, R, T, U	VC16 Windows 64-bit	TMIV: 8.0.1 IV-PSNR: 3.0

Table 2. G17 anchor generation.

Organization	Sequences	Compiler/system	Version/commit
PUT	All	GCC 9.3.0 Linux 64-bit	TMIV: 8.0.2 IVDE: 3.0 IV-PSNR: 3.0
Intel	All	VC16 Windows 64-bit	TMIV: 8.0.1 IVDE: 3.0 IV-PSNR: 3.0
Interdigital	D, E, P	GCC 9.1.0 Linux 64-bit	TMIV: 8.0.2 IVDE: 3.0 IV-PSNR: 2.1

3 Results

A selection of pose trace videos is available on the MPEG content server at /MPEG-I/Part12-ImmersiveVideo/Anchor_TMIV8.

The CTC reporting templates are attached to this document:

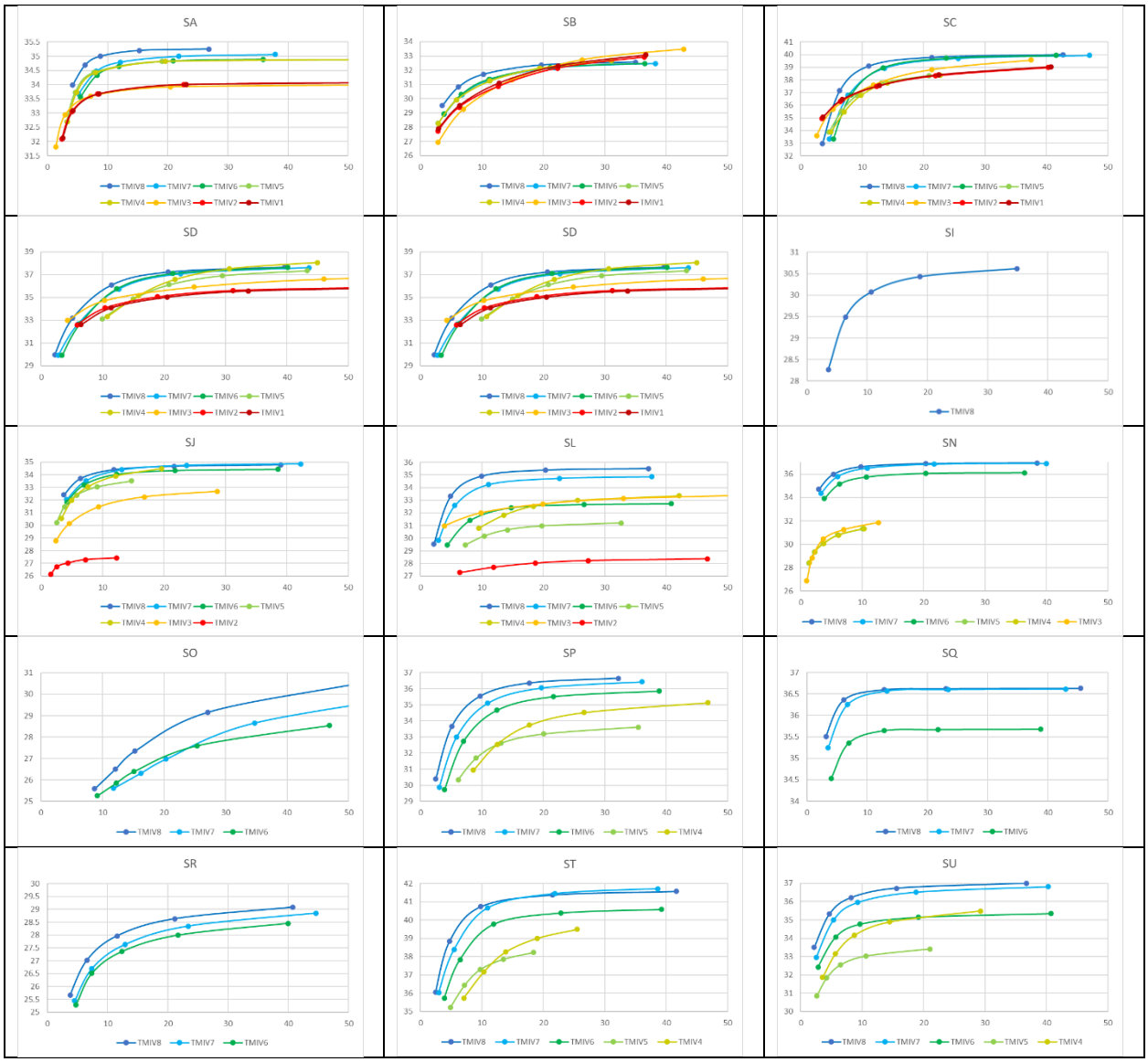
- anchor_A17.xlsm
- anchor_A97.xlsm
- anchor_V17.xlsm
- anchor_G17.xlsm

In subsection 3.1, current A97 and G17 anchors were compared with previous anchors to show the overall progress of TMIV development. In subsection 3.2, three anchors in reduced frame configuration were compared. Comparison is presented as WS-PSNR RD-curves. Full data are attached to this document:

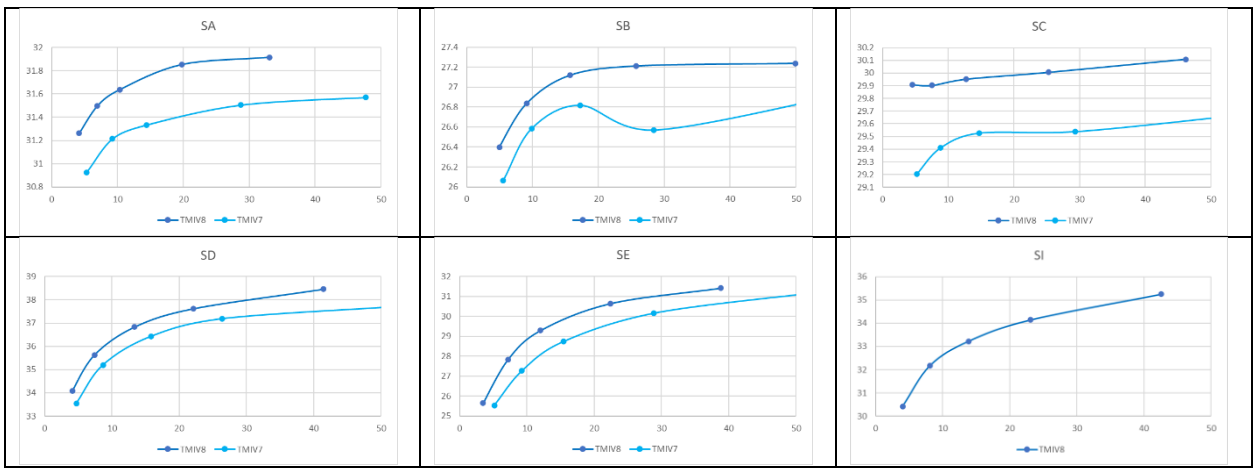
- anchorComparison.xlsx

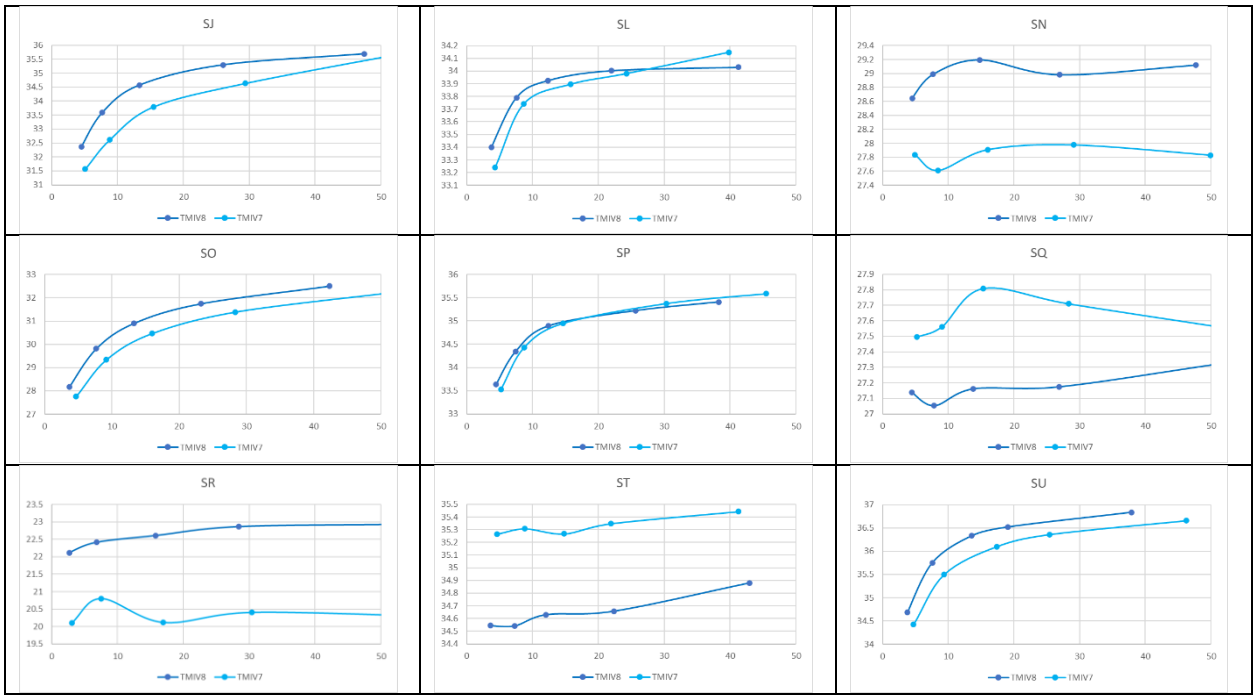
3.1 TMIV8 anchor vs. previous anchors

3.1.1 A97



3.1.2 G17

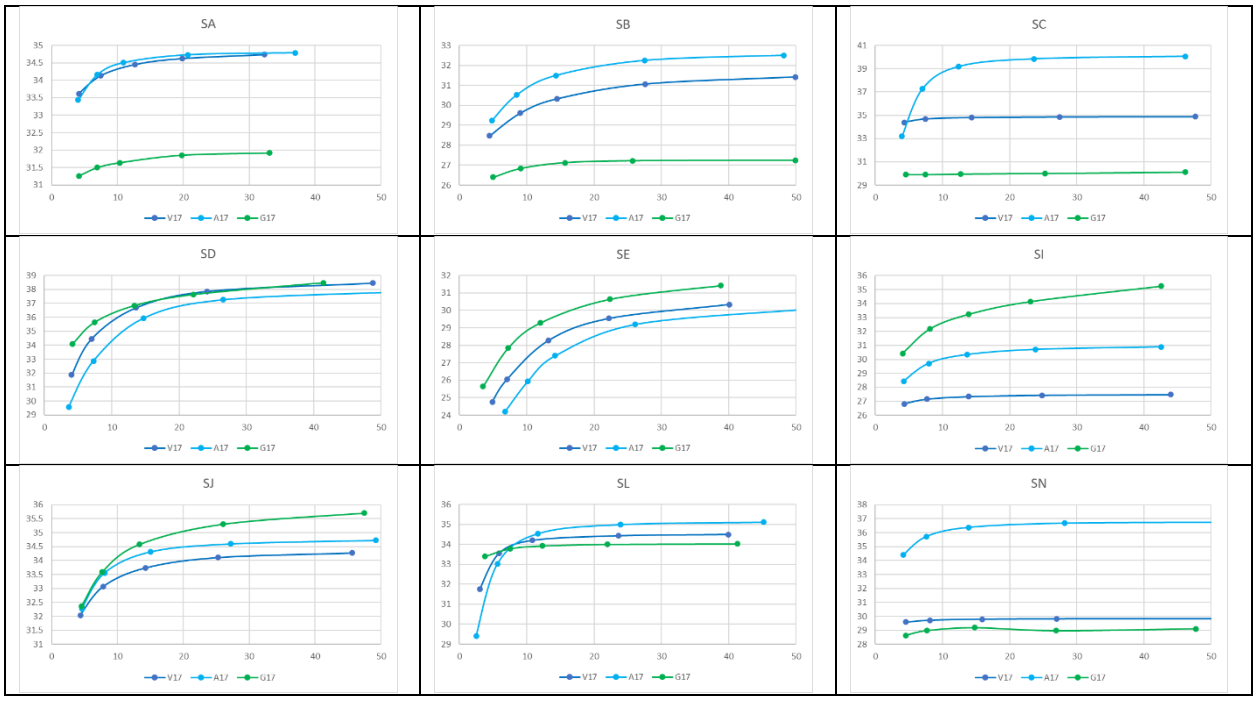


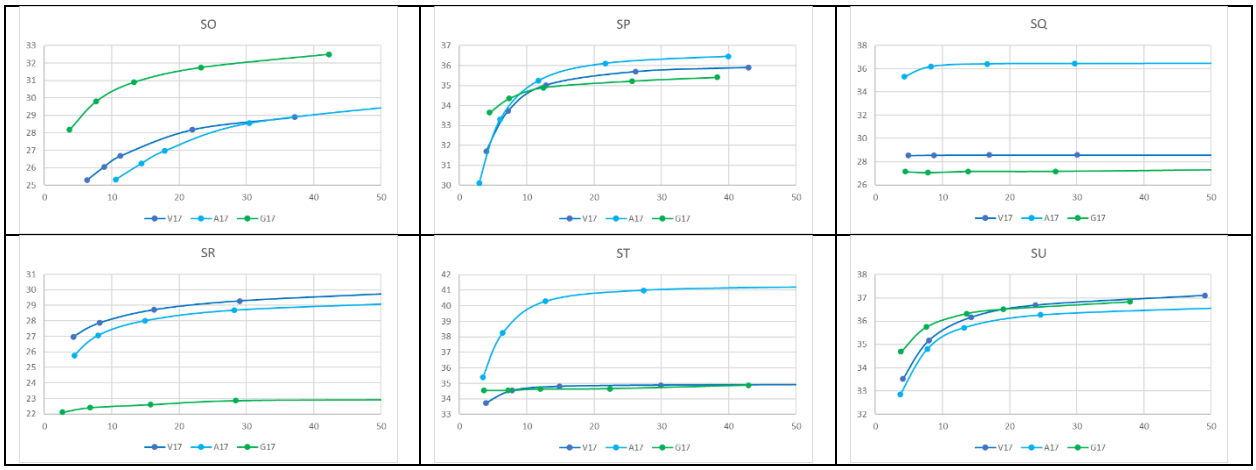


Data from:

- m55671 – TMIV7,
- m54856 – TMIV6,
- m54028 – TMIV5,
- m53053 – TMIV4,
- m51560 – TMIV3,
- m49961 – TMIV2,
- m48099 – TMIV1.

3.2 TMIV8: V17 vs. A17 vs. G17





4 Recommendations

We recommend using attached reporting templates for all proposals.