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Title: Test design to accommodate the inclusion of common processed video sequences (PVSs) and the use of hidden reference in all subjective experiments

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Introduction

The current MM test plan specifies a common set of (identical) 24 PVSs per resolution to be included in every subjective experiment.

Subjective tests will be conducted using the ACR method with use of hidden reference. For the evaluation of full-reference and reduced-reference models, DMOS will be computed using the hidden reference to evaluate the performance of objective models.

The use of a hidden reference is compulsory to compute DMOS for a given PVS, i.e. for a PVS showed in a test the corresponding hidden reference MUST be included in the same test.

For each of the PVS from the common set, the corresponding (hidden) SRC must therefore also be included in the same test.

The current agreed experimental design is the following:

- 136 non-common PVSs (8SRCs x 17HRCs):
 - 8 SRCs as hidden reference (from non-common set of SRCs)
 - 128 PVSs derived from these 8 SRCs
- 24 common PVSs (derived from the common set of SRCs)

=> Total: 160 PVSs per experiment

If a set of common PVSs is to be used in every experiment, then the corresponding SRCs must also be included in the same test.

Proposal

Each common set of SRCs (one set per resolution) includes 6 SRCs as proposed by the current pool selected by the ILG (see list in the next section of this document).

It is proposed to generate 4 PVSs from each SRC in the common set. Each of these 4 PVSs can be generated from a different error condition (HRC). This results in (6x4=) 24 common PVSs to be used in every experiment (as per the current MM test plan). Additionally, each test MUST also include the 6 common SRCs as hidden reference.

We propose to modify the current experimental design to the following:

- 136 non-common PVSs (8SRCs x 17HRCs):
 - 8 SRCs as hidden reference (from non-common set of SRCs)
 - 128 PVSs derived from these 8 SRCs
- 24 common PVSs (derived from the common set of SRCs)
- 6 common SRCs (as hidden reference)

=> total: 166 PVSs per experiment

Additional requirement

Additionally to the proposed modification of the test design, the following requirement must be met. It must be ensured that each common SRC in a test is different from the non-common SRCs in the same test (i.e. a given SRC **can not** be used as common and non-common SRC in the same test). Otherwise we will have one hidden reference showed twice (once as the common SRC and once as the non-common SRC) in the same test and it will not be possible to know which of the 2 occurrences must be used to compute DMOS for the corresponding PVSs.

In the proposed sets, some SRCs are currently both in a non-common and common set:

- KBS_SRC_newsG_vga.avi: both in VGA_K and CommonSetVga
- KBS_SRC_mubankA_cif.avi: both in CIF_M and CommonSetCif
- KBS_SRC_gayoB_qcif.avi: both in QCIF_W and CommonSetQcif
- NTIA_SRC_stadpan_VGA.avi: both in VGA_K and CommonSetVga
- SVT_SRC_CrowdRunP_vga.avi: in VGA_C, VGA_H and CommonSetVga

The current list of sets must therefore be amended accordingly to the proposed requirement of not having the same SRC in both common and non-common sets.

List of common scenes (as provided by the ILG on 26 April 2007)

QCIF Common Set

IRCCyN_anim1_qcif.avi
CU_SRC_bbshoot_qcif.avi
NTIA_SRC_SusieStill_qcif.avi
CU_SRC_bcancer2_qcif.avi
KBS_SRC_gayoB_qcif.avi
CU_SRC_presents1_qcif.avi

CIF Common Set

IRCCyN_anim13_cif.avi
CU_SRC_presents3_cif.avi
NTT_SRC_Talk_1-4_cif.avi
KBS_SRC_mubankA_cif.avi

NTIA_SRC_WashdcStill_cif.avi
CU_SRC_bbfoul_cif.avi

VGA Common Set

NTIA_SRC_stadpan_vga.avi
SVT_SRC_crowdrunP_vga.avi
KBS_SRC_newsG_vga.avi
KBS_SRC_gayoD_vga.avi
NTIA_SRC_duckmovie_vga.avi
OPT_SRC_013_vga.avi