

ANNEX 8 SITE ACCEPTANCE TEST (SAT) — UNREAL ENGINE / UNITY3D LED CAVE

OBJECTIVE

Verify the system can run high-end Unreal Engine 5.5 stereoscopic content (Lumen, Nanite, MetaHuman, nDisplay) and high-end Unity3d stereoscopic content on all LED walls and floor. All criteria must be met simultaneously during a continuous run. We will be conducting two separate runs: one using Unity3d and the other using Unreal Engine.

TEST CONTENT

MPI Acceptance Project (UNREAL ENGINE 5.5) with:

- Lumen GI + Reflections (High+)
- Nanite meshes (≥15M triangles)
- At least one MetaHuman (Close-up LOD0, further away LOD1, animated face and body)
- Dynamic shadows, Epic scalability setting, TSR anti-aliasing (DLSS as option)
- nDisplay stereo across all LED surfaces
- at 120Hz (60Hz per eye) average, at native screen resolution
- MPI delivers project files

MPI Acceptance Project (UNITY3D) with:

- Be able to run a Unity demo using MiddleVR.
- Run a scene like “ArchVizPRO Interior Vol.6 HDRP” or similar (in agreement with MPI) at 120Hz (60Hz per eye) average, at native screen resolution

SUGGESTED INSTRUMENTS

- High-speed camera (≥1000 fps) or photodiode + scope (*supplied by MPI*)
- Class 1 sound meter (*supplied by MPI*)
- Unreal Insights / nDisplay stats / GPU logs
- Unity3d logs

PASS/FAIL CRITERIA

Performance:

Average rendering framerate ≥60 Hz per eye, measured over the full test duration (≥ 1 hour). Rolling 2-second average framerate shall not drop below 50 Hz per eye. No sustained frame drops resulting in effective framerate <45 Hz per eye (i.e. prolonged half-rate updates at 30 Hz or lower).

Sync:

Intra-wall / inter-panel sync (Do all panels inside one wall update at exactly the same time?)

Tolerance: ≤4.2ms at 60Hz per eye

Inter-surface sync (Are the different walls/floor in sync with each other?)

	Tolerance: ≤8.3ms at 60Hz per eye
Stereo:	Correct eye mapping; Correct depth perception; shutter glasses in sync, no double imaging
Noise:	≤45 dB(A) measured at CAVE center
Vicon Tracking (if included):	End-to-end (moving reflective marker-to-photon on screen) ≤160 ms (95th percentile), ≤120 ms median; jitter ≤0.5 mm; accuracy ≤5 mm
Stability:	1-hour soak without crashes, sync loss, or >5% FPS drop
Pixel health:	No uncorrected bright dots or cluster defects beyond warranty

PROCEDURES

1. Launch MPI Acceptance Projects on final nDisplay \ middleVR config.
2. Record logs, high-speed video of sync bar across surfaces, stereo pattern through glasses, and noise levels.
3. For tracking: record both marker and screen. When marker is over physical line: flash white on screen. Measure latency with High-speed video.
4. Run pixel defect test (Display R,G,B,BL,W solid frames + grid).

FOR APPROVAL

Executed by:	
Approved:	

The offered VR-lab meets all executed acceptance tests and thus complies with the conditions and requirements as set out in the program of requirements from tender TN551917. The system delivered and installed by is accepted by MPI and will be put into operation as of
The applicable warranty period starts from this date.

DD-MM-YYYY, MPI
Name of contact person
Position

DD-MM-YYYY, Name of supplier
Name of contact person
Position