Reflection Log – Milestone 3

Title: *Echoes of the Observer*
Developer: Danila Sergienko
Milestone: 3 – Final Polish and Submission Preparation
Period: August 4 – August 26, 2025

What I Accomplished

- **Playable end-to-end build** with menu → intro → Mission 1 → Biosphere → Habitat → space finale → credits/menu loop.
- **Narrative delivery** through on-screen subtitles, contextual hints, and timed prompts that guide the player without breaking the mood.
- **Robust cinematic handoff**: standardized BeginPlay fade and cleaned Sequencer bindings to eliminate dark/incorrect exposure starts.
- **Audio systemization**: built **BP_AmbienceDirector** that cross-fades city trees vs. river using AGV zones and MetaSound parameters.
- **Moment-to-moment SFX polish**: footsteps/jump hoop cues, elevator loop with fade-in/out, boat interactions.
- **UI/Material polish**: artifact-free speedometer with tri-color feedback (blue/green/red), plus smoothed values via **FInterpTo**.
- **Packaging & streaming**: configured maps-to-cook, iterative cooking, and a working Pixel Streaming test for presentation.

Challenges Faced

- **"Everything goes dark" on PIE or level start** caused by overlapping exposure and Sequencer fades.
  Fix: Forced a manual camera fade at BeginPlay and audited all sequence fade tracks.
- **Sequencer possession vs. spawn** issues where the player wasn't visible/bound.
  Fix: Replaced spawn with a level-placed possessable and used tag binding only for special shots.
- **UI material artifacts** (cross/line) from mip sampling and wrong sampler type.
  Fix: UI-2D textures, NoMipmaps, clamped UVs; replaced threshold logic with SmoothStep blends.

- **Ambience cross-fade math** felt jumpy.
  Fix: Per-zone weight uses distance-to-brush with a falloff, accumulated via Max, then smoothed each tick with **FInterpTo**.
- **Elevator sound not audible** even though fades fired.
  Fix: Turned **Auto Activate Off**, explicitly **Play** on move start, ensured the component is attached to the moving root, and stopped after FadeOut.
- **Long first cook** (shaders & DDC).
  Fix: Locked in **Iterative Cooking**, trimmed cook list to only shipped maps, and staged a local DDC for future builds.

What I Learned

- Centralizing **fade/exposure control** prevents a whole class of edge-case lighting bugs during transitions.
- **Audio Gameplay Volumes** + a small director BP are a fast, art-directable way to regionalize ambience without authoring dozens of sound cues.
- For UI, the right **texture compression & sampler** settings matter as much as shader logic—especially for crisp 2D graphics.
- Small **debug habits** (print strings, au.debug.sounds, animation debug, -log) pay huge dividends during late-stage polish.
- Packaging early—even if slow—reveals hidden dependencies, missing maps, and command-line needs for the final demo.

Performance & QA Notes

- Kept Lumen/Nanite defaults; validated 60 FPS on dev machine.
- Avoided runtime level streaming during cinematics; used visibility tracks for stability.
- Clamped ambience mix (0.15–0.85) to maintain a floor/ceiling and prevent scenes from going silent or overwhelming.

Submission Preparation

- Default map set to **MainMenu**; added return-to-menu flow after finale.
- **Maps to cook** whitelisted; "Directories to never cook" excludes dev/test folders.
- Packaged **Development** for internal verification (-log), then **Shipping** for the final handoff.
- Pixel Streaming checklist: signalling server ports open (80/8888), VC++ redist installed on host, local run verified.

Reflection

This milestone transformed a working prototype into a coherent, performative piece. The game now communicates intent—through sound, light, and timing—without heavy UI. The small systems I wrote (AmbienceDirector, subtitle/hint flow, speedometer feedback) are reusable and easy to tweak, which kept late-stage iteration fast.

Next Steps (Post-Submission)

Collect presentation feedback and, if time permits, add a short onboarding interaction at Mission 1 start.

Record a polished trailer from the packaged build.

Consider adding accessibility toggles (subtitles size, colorblind-safe UI accents, master mix presets).