EchoNode Ghost-Key: Development Roadmap

v1.0 – The Prototype (Foundation)

- **Core Engine:** Established the 8×8 Grid-Coordinate Matrix.
- **Mechanism:** Initial conversion of text into Row/Column coordinate pairs.
- **Output:** Pure numeric strings.
- **Security:** Level 0 (Basic Substitution).

v2.0 – The Morse-Anchor Update

- **Obfuscation:** Introduced the conversion of coordinates into Morse-style binary.
- **Structural Anchor:** Added the !#BSOD#! signature, allowing the decoder to find the message within a wall of text.
- **Aesthetic:** First iteration of the "Blue Screen of Death" (BSOD) cover story.

v3.0 – The Logic Shift (Skip-Count Engine)

- **The "Ghost" Layer:** Introduced the **10-Digit Dynamic Skip-Key**.
- **Entropy:** Shifted from static substitution to a synchronized skip-count logic. The key now dictates where bits are hidden within random noise.
- **Noise Pool:** Created a 43-character pool to generate "junk" characters.

v3.1 – The Decoupling Patch

- **Refinement:** Separated the "Aesthetic Wrapper" (the crash report text) from the "Core Payload."
- **Stability:** Fixed regex errors that were accidentally "cleaning" the message out of the log.
- **Camouflage:** Added variable memory addresses and system process names to the header.

v3.2 – The Audio-Engine (EchoNode) Rebrand

- **Contextual Pivot:** Rebranded the tool as a "Music VST Debugger" (EchoNode) to better fit a GitHub repository.
- **Process Variance:** Swapped generic system files for .vst3, .dll, and .sys audio drivers.
- **The Terminator:** Introduced a technical marker (0XDEAD) to signal the end of the message, allowing for infinite junk data after the payload.

v3.3 – The Entropy Expansion

- **Auto-Junk:** Replaced manual junk sliders with a 0–1000 character RNG flood.
- **Marker Update:** Changed the Terminator to the user-specified %1O0X! for personalized security.

- **Traffic Analysis Defense:** Ensured that message length no longer correlates with file size.

v3.4 – The File System Integration

- **I/O Operations:** Added **Import** and **Export** functionality for .log files.
- **Automation:** Set the decoder to automatically run upon file import.
- **Mirror Bug Fix:** Switched terminal rendering to textContent to prevent raw HTML code from "executing" in the transcript.

v3.5 – UI/UX Minimalist Refinement

- **Layout:** Moved to a vertical "Command Line" stack for professional aesthetics.
- **Color Coding:** Assigned Blue to Outbound (Encoder) and Green to Inbound (Decoder) to prevent user error.
- **Footer Restoration:** Re-implemented the STREAMS_CAPTURED: 1 status marker for technical authenticity.

v3.5.2 – The "State Management" Patch (Current)

- **Transcript Sync:** Fixed a bug where the user's outbound messages weren't appearing in the terminal transcript.
- **Export Safety:** Implemented the lastActionWasEncrypt flag. This prevents the "Echo Bug" where a user could accidentally re-export an imported message under a new name.
- **Final Aesthetic:** Removed emojis to maintain a "Strictly Professional" developer vibe.