

**Once your team completes a milestone, please post a short comment underneath your Questbook application with the milestone report google doc linked & send an email to pruitt@entropyadvisors.com or dm to @pruitt_m on Telegram to notify the committee that the deliverables have been completed.*

Application:

Stylus SDK: Building a AssemblyScript to WebAssembly Solution

Team: *WakeUp Labs*

Milestone: Feature Extension – Advanced Mapping Support & Stability Improvements - Milestone #8

Funding Amount Unlocked: 50,000 ARB

Date Submitted: 1/27/2025

Summary of the Deliverables:

We are pleased to announce the successful completion of Milestone #8, focused on extending mapping support and improving overall stability based on real-world usage and community feedback.

Summary:

During this milestone, we significantly expanded the SDK's data modeling capabilities by implementing advanced mapping support with multiple type combinations, enabling developers to express more complex and realistic smart contract state patterns.

Deliverables & Proof of Work:

Key Achievements

Our main efforts during this milestone included:

- **Extended mapping support** with multiple combinations of supported basic types as keys and values.

- **Beta implementation of structs as mapping values** (excluding *string* fields), enabling richer state representations while maintaining predictable layouts.
- Improved handling of mappings across memory and storage contexts, reinforcing correctness and interoperability.
- Ongoing bug fixes and refinements identified during alpha usage and internal QA.

Community Contributions

A major highlight of this milestone is the successful integration of our first external community contribution.

*We reviewed, iterated on, and merged a contribution by **@Alstomaldev**, which has been included in this milestone:*

- *The contribution introduces automatic local testing by spinning up a Nitro dev node via Docker before running the test suite, and tearing it down afterward.*
- *This significantly improves local developer experience, making testing more reliable, reproducible, and frictionless.*

PR Link: <https://github.com/wakeuplabs-io/assembly-script-stylus-sdk/pull/120>

Demo & Validation

As a practical demonstration of the new capabilities, we implemented a Voting App, showcasing:

- *Advanced mapping usage*
- *Struct-based state modeling*
- *Realistic contract logic aligned with common DAO and governance patterns*

This demo validates that the extended mapping system unlocks higher-level use cases beyond basic ERC standards.

Deliverables

- *Extended mapping implementation with broader type combinations*
- *Beta support for structs as mapping values*
- *Improved stability and bug fixes across SDK and CLI*
- *Merged community contribution improving local testing workflows*
- *Voting App demo showcasing real-world usage*

Useful Links

- [GitHub Repository](#)
- [NPM package](#)
- [Developer Documentation](#)
- [Developer Playground](#)
- [Demo video contract](#)
- [Demo video app](#)
- [Demo github](#)
- [Developer Community Talk](#)
- **Devconnect presentations:**
 - [Stylus Awakening event](#)
 - [Stylus Builders Panel at Arbiverse](#)

This milestone and the new SDK version enable developers to build more complex smart contracts, expanding supported use cases and strengthening the robustness and flexibility of the AssemblyScript Stylus SDK.

Challenges and/or Adjustments to Next Steps:

Nothing to mention at this moment

Do you attest that all the provided information is accurate and the deliverables meet the expectations set at the onset of the grant agreement.

Yes