Polkadot

Proposal: OpenZeppelin x Polkadot Ecosystem Growth Phase M4

Proponent: 126KK6oTXgmtkKDqgFJZkDQSvH5oes5xwHhnbpzPMBBTJShp

Date: 10.03.2024

Requested DOT: US$260,000 converted to DOT using the EMA7 rate on Subscan. This proposal is for the third of four installments over an initial 12-month period (as detailed below).

Short description: This is the fourth of four quarterly proposals that OpenZeppelin will submit to the community for the development of **open source parachain runtimes** and underlying FRAME pallets in order to **accelerate the development and deployment of new and secure parachains**. Since the proposal was approved at the end of August 2023 by the Treasury, OpenZeppelin has:

(a) **Completed the development of the Generic Runtime and underlying FRAME pallets.** The runtime has been audited by SR Labs and can be found here. We have also created and updated all the documentation for the Generic Runtime. The documentation can be found here along with a quick start guide.

(b) **Developed and independently audited the EVM Runtime Template**, enabling seamless execution of Solidity smart contracts on Substrate chains. This template includes a detailed developer guide to assist in migrating Solidity contracts from Ethereum to the EVM runtime template.
As part of this milestone we have also collaborated with R0gue to Integrate the templates into POP CLI, providing developers with a streamlined experience and making it easier than ever to start a local parachain. We plan to continue working with their team to ensure new releases are integrated.
Security is at the heart of the essence of OpenZeppelin, that's why our EVM template has been independently audited. The audit report can be found here.

(c) **Beyond development:** Our team has engaged with the community by conducting more than 10 meetings with existing parachain teams to validate ideas, gather input and feedback and participated in multiple conferences and workshops to engage with devs and show how to build securely using our templates.

In this proposal (4 of 4), in consideration for the Requested DOT above, OpenZeppelin shall:

(d) **Continue the development and enhance the developer experience through the introduction of pallet abstractions.** We will integrate Tanssi for faster parachain launch time, improve XCM capabilities, and integrate with Snowbridge as stated in this Github Milestone Page. This funding is specific for the period **starting July 2024 to October 2024 as outlined and agreed in the first, second and third proposal** presented to Polkassembly.

Status Report

Following the approval of the third proposal in June 2024, the OpenZeppelin team has completed the first development deliverable by releasing the EVM Runtime Template pre-configured with Frontier pallets.

This phase, spanning from the start of development in February 2024 to June 2024, involved defining the scope of the EVM runtime templates, developing the runtime template and coordinating the audit. Additionally, our team went beyond simple development and engaged with a variety of ecosystem players and teams and attended Decoded in Belgium.

EVM Runtime templates

In July, we finalized the EVM runtime template, making it simpler than ever to deploy an EVM chain on Polkadot. This was audited and released at the beginning of August.
Our templates leverage battle-tested Frontier pallets for EVM compatibility while incorporating essential features to facilitate a smooth transition for dApps from Ethereum or existing tooling. The work includes

1. Frontier pallets enabling EVM on substrate chains and allowing users to deploy smart contracts in Solidity with `pallet_ethereum` and `pallet_evm`.
2. 20 byte addresses: Existing tooling works out of the box, no more awkward conversion, this template handles that for you.
3. Account Abstraction support: The Entrypoint contract is included as part of the pre-deployed contracts that will be in the genesis block.
4. Extensible pre-deployed contracts: In addition to the entrypoint, you can add your own smart contract to be included in the genesis block.
5. Developer guide detailing migration of Solidity contracts from Ethereum mainnet to the EVM runtime template.

The second release of our templates has been fully audited and the report can be found here.

Beyond Development

Since November 2023, the OpenZeppelin team has been engaging and meeting with a large number of ecosystem teams and players in order to better understand the needs of existing and new parachain builders. The main goal has been to validate our plans for the first generic runtime and decide on the best path forward for the second runtime template.

We've also participated and plan to continue attending Polkadot events to present our work, engage with developers and gather feedback. Here are some of the events that our team attended ❤️

1. Nikita Khateev and Ozgun Ozerk attended this year's Parachain Summit and Sub0 held in Bangkok, Thailand where they presented a workshop on how to spin up a parachain using our Generic Runtime Template.

2. Gustavo Gonzalez and Ozgun Ozerk attended Polkadot Decoded 2024 where they demonstrated how to bootstrap an EVM parachain easily.

3. Nikita Khateev and Ozgun Ozerk participated in Encode Club's Educate series showing new builders how to leverage our templates to get started.

Next Deliverables and Roadmap

Below is a summary of what we have in scope for this funding period. For full details on the deliverable we recommend visiting [the GitHub repository](). Please note that the deliverables and roadmap are subject to change based on feedback from stakeholders in the Polkadot ecosystem. Within the scope of this proposal OpenZeppelin plans to deliver:

For this deliverable, one of our main focuses will be to provide what we are calling 'meta pallets'. These are a set of pallets, macros and configs that abstract away complexity for developers. These pallets, such as `oz-system`, `oz-evm`, `oz-assets` offer a more opinionated approach, reducing the need for teams to configure individual pallets (which is not only cumbersome, but also introduces opportunities for security issues). This will allow new parachain developers to get started more easily, but will also allow existing teams to import individual OpenZeppelin pallets, and won't sacrifice advanced developers since they will still be able to configure or opt-out as needed. This proposal is the result of several weeks of research, and valious feedback and input provided by the Parity team.

More details about this milestone

1. **Meta Pallets**: Streamline developer experience by creating higher-level, opinionated "meta pallets" that encapsulate common pallet functionalities. This reduces the number of pallets required for a project, simplifying development and accelerating time-to-market.
2. **Tanssi Integration**: Enhance developer experience and increase parachain launch time by making our templates compatible with Tanssi and working with their team to integrate into their UI.
3. **Zombienet-sdk improvements**: One issue we've faced when writing integration tests is being able to easily spin up a local chain and tear it up. After speaking with some teams we realized this is a common problem across the ecosystem, that's why we are collaborating with Parity to improve DX for zombienet by contributing upstream. An initial iteration for this design can be found [here]().

4. **Snowbridge Integration**: Snowbridge is a general purpose, trustless and decentralized bridge between Polkadot and Ethereum. Our goal is to include out of the box support for parachains that use our templates.
5. Developer guides detailing the use of Meta Pallets and all new features.

Repository and Contributions

The repository is the same as the previous deliverable, and our goal is to have all runtime templates share the same repository to improve discoverability and developer experience. Each template will live in its own subdirectory. You can find work specific to the mentioned deliverables here.

We invite anyone from the ecosystem to contribute, by sharing feedback on specific issues, or adding their ideas or feature requests directly by opening an issue in the repository, following the contributing guidelines.

Additionally, we have also posted an update on the developer forum.

Overall Roadmap

There are no indications yet to make changes to the anticipated timeline presented in the last three proposals for M1, M2 and M3. Nonetheless, the Polkadot ecosystem is rapidly evolving and our team is regularly engaging with teams to make sure that the roadmap of upcoming deliverables remains relevant for substrate developers.

We still anticipate to launch a new runtime every 6 months, which will allow for the full development of code, automated testing, security review, documentation, and guides for all the runtime capabilities and the underlying pallets.

As we conclude our first year working in the Polkadot ecosystem, this is a summary of our timeline and the work we've achieved.

a. Generic Runtime and underlying FRAME pallets (**released**).
b. EVM Runtime and underlying FRAME pallets (**released**)
c. Improved Developer Experience, Tanssi integration and Snowbridge integration (**in development**)

OpenZeppelin will continue to provide business-hour support for all deliverables in keeping with its standard support policies. Work for maintenance releases and enhancements to the parachain runtimes and FRAME pallets will be included in the roadmap planning process. We invite the community to provide feedback and ideas to this proposal and the runtimes template by engaging on the forum post, the Polkassembly discussion and the GitHub repository.

We're happy to share that this milestone marks the completion of our first year of engagement. It has been a rewarding experience contributing to the Polkadot ecosystem, and we're grateful for the opportunity. As we look ahead, we're excited to begin discussions about our potential involvement in the coming year. We're eager to continue our work and explore new ways to add value to this community.

Quality and Security Assurance

Among other practices, OpenZeppelin will ensure:

1. All code is being maintained in Github public repositories. OpenZeppelin shall license such code under an appropriate open source license compatible with the open source code of Polkadot (GNU General Public License v3.0) that shall be determined in collaboration with the Polkadot community and Parity.

2. All Github repositories are secured and managed by OpenZeppelin team members, public contributors, and pull requests will be allowed, all pull requests require 2 code reviews by OpenZeppelin team members.

3. OpenZeppelin is developing full test suites for all parachain runtimes. The automated tests are integrated into the repository CI/CD with 100% tests passing required for every pull request and merge.

4. OpenZeppelin is also conducting frequent reviews with Parity to evaluate the satisfaction with OpenZeppelin's development services under the agreement, and also to identify any areas for improvement.

Deliverables & Cost

Phase	**Community Proposal Date**	**Deliverable**	**Cost**	**Status**

M1	Aug 2023	OpenZeppelin will create a dedicated 3-member open-source development team and publish a roadmap for quarterly releases and begin development work.	$220k USD	Awarded
M2	Nov 2023	First phase (6-month) release of parachain runtime, FRAME pallets, and associated OpenZeppelin Platform support.	$230k USD	Awarded
M3	June 2024	Second phase (9-month) release of parachain runtime, FRAME pallets, and associated OpenZeppelin Platform support.	$240k USD	Awarded
M4	September 2024	Third phase (12-month) release of parachain runtime, FRAME pallets, and associated OpenZeppelin Platform support.	$260k USD	Current

Although this outlines the first 12 months, based on future feedback given by the community, OpenZeppelin is excited to participate in, and assist the Polkadot community for years to come.

Payment Conditions

- Please note OpenZeppelin is requesting its first year of work be covered in four initial stages and payments as outlined above, provided that each relevant proposal is approved by the community.
- DOT allocation to be calculated based on EMA7 Rate by Subscan on the day of each proposal submission.
- The subsequent on-chain proposals will be pushed to OpenGov on the timeline set out above, along with detailed status reports providing updates on the achievement of prior milestones and full plans for activity in the forthcoming quarter for which funding is being requested.
- If any difference in the allocation arises based on DOT volatility, the difference will be included in the budget for the following on-chain submission.

Terms & Conditions

- By approving this proposal and proceeding to make payment of the fees to OpenZeppelin, Polkadot agrees to our DAO Terms of Service found here.