TL;DR

The following deliverable represents the culmination of Phase II of a multi-phase research project for Lido DAO, with the goal of designing a mechanism for decentralized maintenance of Lido's operator set. The project is one of the steps toward enabling Lido to onboard new operators in a permissionless manner.

Phase I involved a systematization of knowledge of decentralized identity and verifiable credentials and was [delivered](#) in late 2022. Phase II was approved in March 2023 and the corresponding research proposal can be found [here](#).

In Phase II, we explored the research and design considerations behind a decentralized dispute resolution mechanism for the Lido protocol, created to punish misbehaving operators.

To design a dispute resolution mechanism, we first identified a wide variety of protocols that could be used to rule over a white-labeling dispute. Among these, we went over decentralized oracles, prediction markets, and decentralized justice.

We provide our recommendation on selecting an appropriate arbiter protocol for the problem at hand and the parties that should be involved in providing a resolution. Next, we scoped out the architecture and design required to use an arbiter protocol to punish white-label operators. Notably, our mechanism should introduce the correct financial incentives, so that the following conditions are satisfied:

- Operators using white-labeling services should be punished such that the expected financial return of using these services is negative.

- Honest operators should have a positive expected return from their services, even in light of potential misaccusations.

- External parties should be able to make a profit from acting as accusers

against white labels—that is, gathering appropriate evidence against these malicious operators and presenting a case in the dispute resolution mechanism.

We have also described various safeguards around our mechanism, such as:

- An experimental testnet phase to initialize the mechanism's parameters

- A failsafe mechanism for the DAO to be able to overrule any malicious verdicts

- A web-of-trust approach, starting from a trusted seed, to vet the juror set.

References

[Phase 1 Proposal](#) & [Phase 1 Delivery](#)

[Phase 2 Proposal](#) & [Phase 2 Delivery](#)

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