

Sky Protocol: Data Availability for Cardano Layer 2 Solutions

Project Close Out Report



Table of Contents

[Project details](#)

[List of challenge KPIs and how the project addressed them](#)

[List of project KPIs and how the project addressed them](#)

[Key achievements \(in particular around collaboration and engagement\)](#)

[Key learnings](#)

[Next steps for the product or service developed](#)

[Final thoughts/comments](#)

[Links to other relevant project sources or documents.](#)

[Link to Close-out video](#)

Project Details

Project Number: 1200203

Project IdeaScale URL: <https://cardano.ideascale.com/c/cardano/idea/122541>

Name of project manager: Gauthier Lamothe

Date project started: August 23, 2024

Date project completed: August 21, 2025

List of challenge KPIs and how the project addressed them

Scaling Side Chains on top of Cardano requires a Data Availability Solution. Sky Protocol provides a capital-efficient solution to this Data Availability problem for all Layer 2 DApps on Cardano.

The Sky Protocol Network makes Data Available to Side-Chain participants. Its committee members sign messages in a format designed to be easy for Plutus contracts to validate and use.

Scaling Side Chains on Top of Cardano:

The Data Availability Solution is tailored to Cardano. It is aligned with the requirements of Cardano. Our approach involves publishing data in a format conducive for Cardano smart contracts to seamlessly validate and integrate into Layer 1 contracts.

Data Availability to Side Chain Participants:

One crucial feature of Sky Protocol is the ability to rely on decentralized committees such that a $\frac{2}{3} + \epsilon$ majority of honest functioning participants is enough to keep the system running. Thus, our Bridge contract must accept some M-out-of-N multisignature scheme, where N will be the size of its committee, and M will be $1 + \text{floor}(\frac{2 \cdot N}{3})$.

List of project KPIs and how the project addressed them

We developed both offchain and onchain as part of this project.

We tailored the Sky Protocol Data Availability Network to the needs of Cardano.

- We published data in a way that makes it easy for Plutus contracts to validate the data and to use it as part of Layer 1 contracts.

- Our network is rooted in Cardano with its own Cardano-based token, which will require fewer trust assumptions than using other networks.

Our network allows many Cardano-based DApps to share the same Data Availability network and pool the costs of both software development and immobilized capital for validation of this network, as compared to each app building its own network.

Our network will eventually sport additional censorship-resistant features: for instance, time-locked blinding of data so that committee members cannot selectively censor data.

Our network will also eventually use RAID5-style coding of data so that committee members only each see a fraction of the data, and the whole data can be recovered with a 2/3 honest fraction of the committee members.

Finally, our network will support DApp validation in both "optimistic" style through interactive games, and "pessimistic" style through zero-knowledge proofs.

Key achievements (in particular around collaboration and engagement)

During the process of developing and debugging Plutus code to make the Sky Testnet operational, we got a chance to improve upon Plutus. This allowed us to make additional unexpected improvements to the Cardano ecosystem.

Key learnings

We were accepted into the CV Labs Cardano Accelerator, where we (CEO, Gauthier Lamothe, and our CTO, François-René Rideau) got mentorship from mentors and received feedback on the Sky Protocol Roadmap, which we have already eagerly started to apply.

Next steps for the product or service developed

We have submitted the following Catalyst Fund 14 proposals to continue developing Sky Protocol.

- **A Scalable Gossip Protocol for Data Availability on Cardano:** Thanks to Catalyst Fund 12, we have a smart contract for Cardano and some minimal (centralized) off-chain infrastructure to test it. For Catalyst Fund 14, we will implement the basis for network decentralization for the DA infrastructure: a Gossip protocol that can automatically scale with our users. Depending on the findings of our initial study, the Gossip protocol will either be a variant of Cardano's gossip protocol extended to scale libp2p (e.g. with per-topic copies of the gossip network), or a variant of libp2p possibly extended to be more like Cardano, or yet another protocol to be determined. Whichever protocol we pick, we will interface it with SkyDA's server so our nodes can talk to each other in a secure, scalable way.
- **A Scalable MultiSig Protocol for DA Subcommittees:** Thanks to Catalyst Fund 12, we have a smart contract for Cardano and some minimal (centralized)

off-chain infrastructure to test it. For Catalyst Fund 14, we will implement prerequisites for a *decentralized* network for the DA infrastructure: in this case, a scalable protocol for contract-verified MultiSig, so that members of validation committees can generate MultiSig signatures that a Cardano contract can efficiently check. The protocol includes not just the cryptographic primitives, but also all the steps of the communication and synchronization over the network. We will assume a suitable MultiSig protocol will otherwise be developed in another subproject, and for this project will be satisfied with a centralized coordinator handling the communications between participants.

We are also launching a node sale and have upcoming plans to utilize the technology behind Sky Protocol to build enhanced Security Information and Event Management (SIEM) tooling. Gauthier delivered an initial pitch about Olapa, at the CV Labs Cardano Accelerator Demo Day on Tuesday, July 29, 2025.

Final thoughts/comments

We take great pleasure in Sky Protocol's potential to lower the cost of launching DApps on Cardano, both in development time and in capital to immobilize for continuous DApp validation.

We look forward to continuing to build on Cardano, starting with the scalable gossip protocol for data availability and the MultiSig protocol for the DA subcommittees. Members of the Cardano community continue to express enthusiasm about the Sky node sale, and we look forward to proceeding with that. We are also excited to drive enterprise adoption of Sky Protocol and Cardano by implementing our Olapa go-to-market strategy.

Links to other relevant project sources or documents.

The following relevant documentation can be found in the Sky Protocol [GitHub repository](#).

- Project [README file](#), containing installation instructions and how to navigate the repository
- Instructions for testing on the [preview network](#)
- Instructions for [participating in the active development](#)
- [General flow](#) for the demo script

The following content on our YouTube channel is also relevant to the project deliverables.

- Announcement of Testnet code completion and an explanation of the Plutus bug we later fixed: <https://www.youtube.com/watch?v=oekaDS5QWL0>
- Announcement of operational testnet: <https://www.youtube.com/watch?v=2r1iz2qFAZo>
- First testnet demo: <https://www.youtube.com/watch?v=LsOdS-BY6GA>

- Announcement about participation in the CV Labs Cardano Accelerator program and technical talks at LambdaComf: <https://youtu.be/4Yg7Rax-8no>
- Our Sky node sale plans: https://www.youtube.com/watch?v=xtUAV6t_ft8&t=974s

Link to Close-out video

You can learn more about our Catalyst Fund 12 development journey by watching François-René's project close out video. <https://youtu.be/AJAMuSXPz9c>