



# Astrochat with Axelar co-founder Georgios Vlachos

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Axelar Network's IBC channels allow stablecoins including axlUSDC and axlUSDT to move freely across the Cosmos and Terra 2.0 ecosystems and beyond. AstroIntern dives deep into Axelar's architecture in an exclusive chat with the network's co-founder Georgios Vlachos.

## Can you talk about your background and how you contribute at Axelar?

My co-founder Sergey Gorbunov and I were previously part of the founding team of Algorand, where I designed the consensus protocol that we launched to Algorand mainnet. Sergey led the effort to standardize BLS signatures, and the standard is now adopted as draft in CFRG and was followed by Ethereum 2.0 implementations and others. Together we've been building secure blockchain infrastructure for more than five years.

At Axelar, on the technical side I focus on protocol design. I also spend much of my time talking to developers, helping them think through their cross-chain strategy and navigate the various trade-offs.

## How did Axelar come to be and how long has it been under development?

Back during the DeFi summer of 2020, we spent a lot of time talking with application developers. The consistent feedback was that, to launch on a new L1, projects required liquidity from major assets like ETH, USDC and USDT. At the same time, multiple strong teams were building new L1s, each catering to a different developer demographic. It was clear that the future is multichain, so we started Axelar to enable developers to build on the best platform for their use case, while leveraging composability with assets and applications across all blockchains. Our long-term vision has always been to enable similar UX to Web 2. We envision a universal interface through which Web3 users get access to all assets and applications, without having to worry whether their asset lives on Ethereum, the application runs on Polygon, or thinking about paying gas. Seamless UX is essential to onboard billions of users to Web3.

Axelar has been under development for almost two years. Since day 1, we have been laser focused on building secure infrastructure. The team has recruited heavily from MIT and the University of Waterloo, where both founders have affiliations. Team members have deep technical backgrounds, for example core engineer João Sousa built the first practical implementation of Byzantine consensus, BFTSmart, which has served as inspiration for many researchers over the years.

## How does Axelar work at a high level?

Axelar is the full-stack decentralized transport layer, governed by permissionless consensus, providing universal composability of programs with any-to-any cross-chain capability. The Axelar network has three key components across two functional layers.

The first is the actual network itself, composed of a set of validators that are responsible for maintaining the network and executing transactions. The validators run the cross-chain gateway protocol, which is a multi-party cryptography overlay that sits on top of a Layer 1 blockchain. They are responsible for performing read and write operations to Gateway accounts deployed on connected external chains, voting and attesting to events on those chains.

The second are the Gateways, which are effectively smart contracts that provide the connectivity between the Axelar network and its interconnected external chains. Validators monitor Gateways for incoming transactions, which the validators READ. They then come to consensus on the validity of that transaction and, once agreed, they WRITE to the destination chain's Gateway to execute the cross-chain transaction.

The validators and Gateways compose the core infrastructure layer.

Sitting on top are the APIs that enable developers to access the tools and infrastructure enabled by those validators and Gateways. This is the application-development layer that applications will interact with to go cross-chain. It uses the underlying core infrastructure layer to pass customizable, generalized messages across chains. These APIs are how developers can easily lock, unlock and transfer assets between any two addresses on any two blockchain platforms, execute cross-chain application triggers, and more generally handle any cross-chain requests.

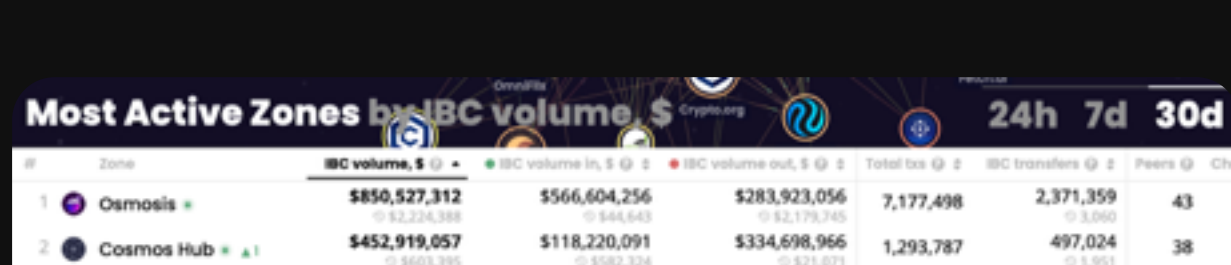
## What differentiates Axelar from popular bridges and IBC?

Axelar is a cross-chain communication platform, not a bridge. Developers are using Axelar to abstract away the bridging part, and build apps with secure cross-chain communication under the hood and 1-click UX. There are bridges built on Axelar, but many developers are going beyond that, integrating cross-chain calls of any kind, using General Message Passing.

Axelar's security approach is the other big differentiator. Most solutions, with the exception of IBC, are custodial — they depend on a small permissioned set of validators to pass messages across chains. Axelar is based on proof-of-stake technology, with a decentralized validator set. Historically, the complexity of decentralizing the message passing layer is why interoperability has been hard. While others have taken shortcuts, we are focused on building robust infrastructure that will power the next generation of dApps.

Axelar was designed to be consensus agnostic, making it possible to connect chains like Bitcoin and Ethereum, and any other PoS chain and supports multiple methods of connectivity including IBC and its native Cross-Chain Gateway Protocol.

## How many assets do you currently support and what sort of volume are they seeing?



Axelar supports multiple major assets, including ETH, USDC, AVAX, MATIC and DOT. Much of the asset related volume today comes from the Cosmos ecosystem, where Axelar has been voted as the canonical interoperability solution for major chains. As is typical, this mostly comes from ETH and USDC. Over the last 30 days, Axelar surpassed \$200m in total volume just within Cosmos, making it one of the most active IBC-compatible chains.

## Why did Axelar decide to support Terra 2.0?

Setting up an IBC channel between Axelar and IBC chains, like Terra 2.0, is a permissionless process. Our goal is to make cross-chain communication as frictionless as transacting on a single chain, so everyone is welcome to contribute and make new connections. Given a strong developer community at Terra 2.0 it makes sense for the network to support it.

## If I hold axlUSDC on Terra 2.0, what am I actually holding? And what happens with the original USDC that was issued on say Ethereum?

axlUSDC is Ethereum native USDC, wrapped over to Terra through Axelar and secured by Axelar's validator set. The original USDC is locked on the Ethereum side, so that an axlUSDC holder on Terra can burn axlUSDC and claim the USDC back on Ethereum.

## What do you see in the coming years for Cosmos and more broadly cross-chain crypto transactions?

Cosmos was the first ecosystem, along with Polkadot, to envision a multichain future. It's amazing to finally see this vision materialize, with blue chips like dYdX building on the Cosmos SDK, as well as dozens of new teams. At the same time, other ecosystems are embracing the narrative, with Polygon projects building Supernets and Avalanche teams launching on subnets. Based on our recent conversations with application developers, I expect 100s of application specific chains to launch within the next year.

It's important to make a distinction here, between two models:

- Multi-chain deployment: Deploying an app on every chain, while using interoperability to connect all the different instances together
- Cross-chain deployment: Deploying an app on a single chain, while using interoperability to compose with applications and assets on every chain.

Developers that build in the multi-chain model, which is typical today, need to re-deploy their applications on multiple platforms, while having to rewrite their smart contract logic for different VMs. By picking a home base where the core smart contract logic lives, developers can substantially reduce engineering friction, making the cross-chain deployment model more likely to gain adoption in the long term.

## Where can people find out more about Axelar?

- [Whitepaper](#)
- [High level overview video](#)
- [Zero Knowledge Podcast Interview](#)
- [Proposal to Osmosis governance](#)
- [Axelar — Avalanche 10m integration video](#)
- DM me <https://twitter.com/yorgosv> on Twitter

+

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### DISCLAIMER

Remember, Terra 2.0 and Astroport are experimental technologies. This article does not constitute investment advice and is subject to and limited by the Astroport disclaimers, which you should review before interacting with the protocol.



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