

DAM: An Introduction

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Abstract

Liquidity fragmentation between sovereign networks kills innovation. Emerging networks lack market depth for native assets, and existing token onramps are both insecure and insufficient for a meaningful omnichain experience. The net result is stifled adoption and massive capital inefficiency. DAM introduces a shared liquidity layer for sovereign web3 networks that enables value to seamlessly flow to where it's needed most. Built modularly on top of existing cross-blockchain communication protocols, DAM powers a universe of omnichain applications, starting with its stablecoin d2o. d2o can be minted on and teleported to any blockchain as a native asset. The latter occurs through the dReservoir, a decentralized, composable primitive designed to power blockchain applications coordinating the movement of global value. Through its scalable aggregation of messaging systems and omnichain-dapp building blocks, DAM's protocol is a mission critical liquidity infrastructure for onboarding the next billion web3 participants.

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The Case for DAM

We live in a world with multiple sovereign networks, especially across the digital assets space. This trend is fueled by the need for use case-specific specialization, user experience tradeoffs, different regulatory frameworks and cultural preferences. To suggest that the world will not be multi-blockchain is analogous to arguing that the world should be one country. Blockchains power an increasing range of decentralized services for unique communities. They are fundamentally virtual property rights systems for an exponentially growing range of digital assets. Networks attract participants due to the nature of the assets they secure, the services they enable and the cultures they nurture. However, in the status quo, liquidity remains siloed on certain networks, despite an obvious desire to flow towards the next frontier of web3 innovation.

The demand to move on-chain liquidity between web3 networks has been most clearly demonstrated through the emergence of non-custodial token bridges. Non-custodial token bridges are middleware sitting between a set of blockchain networks and generally require users to lock up collateral on a source blockchain network and create a depositary receipt on the destination blockchain network representing a claim for the collateral on the source blockchain network. This architecture has proven nothing short of catastrophic, resulting in some of the space's largest security exploits. The close proximity of the locked tokens to the middleware logic usually means that any vulnerability exploited in the middleware and smart contracts, result in the locked tokens being immediately stolen. The associated smart contracts requiring the locking up of a large pool of liquidity at either end of the pipe becomes a honeypot for bad actors.

A modest improvement to the non-custodial token bridge architecture is the abstraction of arbitrary cross-blockchain messaging protocols. The main component of these players is a persistent message queue or relay which consumes signed messages from a source blockchain network, verifies them, and then forwards them on to a destination network where some other operation is performed. The trouble with this commoditized tooling is that it is insufficient and insecure for omnichain application developers on a standalone basis. Firstly, the lack of modularity forces

lock-in - application developers can only reach the networks supported by the chosen cross-chain messaging protocol, and there is no mechanism to mitigate against middleware exploits. Additionally, these protocols lack developer infrastructure to coordinate cross-chain flows and establish controls unique to their specific applications.

Therefore, maximizing the cross-network liquidity opportunity requires an aggregation of cross-chain messaging protocols with pluggable support for new networks alongside a suite of developer tools to enable a universe of omnichain solutions, and ultimately, connecting DAM's Liquidity Layer to all sovereign Web3 and Web2 networks.

DAM Overview

DAM is an omnichain liquidity infrastructure facilitating the flow of value to where it's needed most. It is a multi-network platform powering applications that coordinate the flow of global liquidity.

d2o Overview

d2o, DAM's first use case, is an omnichain stablecoin designed to provide emerging networks an immediate solution for scaling native stablecoin liquidity. Initially collateralized by native USDC on Ethereum, d2o can be minted by a basket of native assets on any blockchain and teleported to any web3 network.

Architecturally, d2o is created in one of two ways: *Direct Mint* or *Portfolio Borrow*.

Direct Mint: Only reserved for the least risky, and most stable collateral, d2o can be minted with existing stablecoins at a 1:1 rate.

Portfolio Borrow: Borrowers deposit protocol-recognized collateral into the DAM's linked-multi-collateral-vault ("LMCV") to mint d2o, which is based on the borrower's total portfolio value and asset quality. Protocol-recognized collateral will include canonical blue-chip, mid-cap and yield-generating tokens, and will vary by chain. d2o is borrowed on an overcollateralized basis.

dReservoir

The dReservoir is a decentralized protocol enabling the secure teleportation of value between blockchains, starting with d2o. Through the dReservoir, digital assets are burnt on one blockchain network and re-minted on another, creating a means of piping liquidity from one place to another.

Starting with Ethereum and Polkadot, users will be able to mint d2o on Ethereum, which can then be piped to Polkadot in a matter of minutes. On Polkadot, users will receive a native d2o, which can be used within the Polkadot ecosystem or piped back to Ethereum where it can be redeemed for the pledged collateral.

This extensible approach allows d2o - or any digital asset - to be easily added to other blockchain networks by deploying the token contract there and building a rich layer on top of inter-blockchain middleware providers to accept and receive messages between blockchain networks. Furthermore, no wrapped tokens are required and so no large pools of liquidity sit within the bridge contracts themselves. And finally, in the background, we will have the dGuardian, ready and waiting to take action if anything looks suspicious.

dGuardian

Under normal circumstances, mint operations on a destination blockchain network must follow a burn operation on a source blockchain network, or come from the dJoin via borrowing. This is a protocol invariant, and so any mint operation observed in isolation can be immediately flagged as illicit.

Burn and mint events can be monitored in real-time by a decentralized guardian application, which would be highly available and provide coverage for all networks the token is deployed to.

In the event the guardian encounters an illicit mint, it would pause the account in question – whereby the newly minted tokens cannot be transferred – so a community-based investigation can be carried out. In the case of a collateral backed token, the collateral contracts can potentially be paused — this would prevent an

attacker using fraudulently minted tokens to redeem collateral. Additionally, a user can only ever pull collateral from their respective address.

Furthermore, other applications or services using the token in question can subscribe to security alert messages regarding the token. For example, consumers of these messages may wish to freeze liquidity pools for the token in question if there is reason to suggest fraudulently minted tokens might be deposited.

We call this the dGuardian and it is a key detective control to ensure that teleported assets remain a safe and secure medium of exchange for its users.

Whilst our token contracts have been audited and we are confident in their integrity, we feel strongly in relying on additional controls as there is always a non-zero chance of an attacker finding an exploitable vulnerability in any of the software stack used to implement the token.

dLP

Liquidity provider (“LP”) tokens represent a profound primitive to establish markets for digital assets. In addition to being able to use LP tokens - including those for pairs including d2o - as collateral to mint d2o, there will be a mechanism to teleport pairs of assets between networks in order to supply native liquidity wherever it is required.

DAM Tokenomics

DAM Token

The DAM Token is the Protocol’s Utility and Governance token. It will have several use cases including:

- Voting on directing liquidity incentives between networks and venues;
- Staking to help secure the protocol in exchange for protocol revenues;
- Setting risk parameters.

More information on the DAM token and tokenomics will be released in connection with DAM’s token launch in 2023.

d2o

While *d2o* represents DAM's initial dApp, it has immense utility in emerging networks given the absence of native stablecoin liquidity.

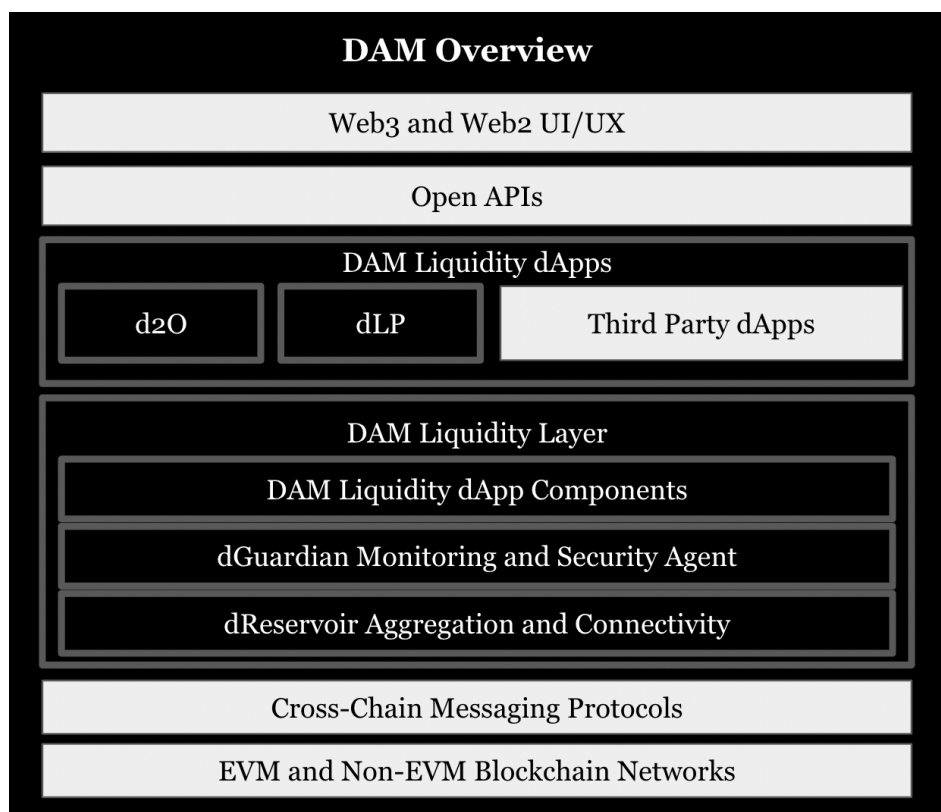
Use cases include:

- Providing an alternative mechanism for USD exposure or payments;
- Hedging against crypto market volatility;
- Swapping for the ecosystem's most attractive assets;
- Serving as collateral in the ecosystem's lending and borrowing market;
- Unlocking liquidity for the ecosystem's most attractive assets;
- Performing third-party liquidations; and
- Participating in economic opportunities native to DAM.

As a general matter, DAM seeks to integrate with existing emerging ecosystem projects. We strongly believe that composability results in a $1 + 1 = 5$ dynamic.

DAM Technical Stack

DAM's system can be bifurcated into two sections: the Liquidity and Liquidity dApps.

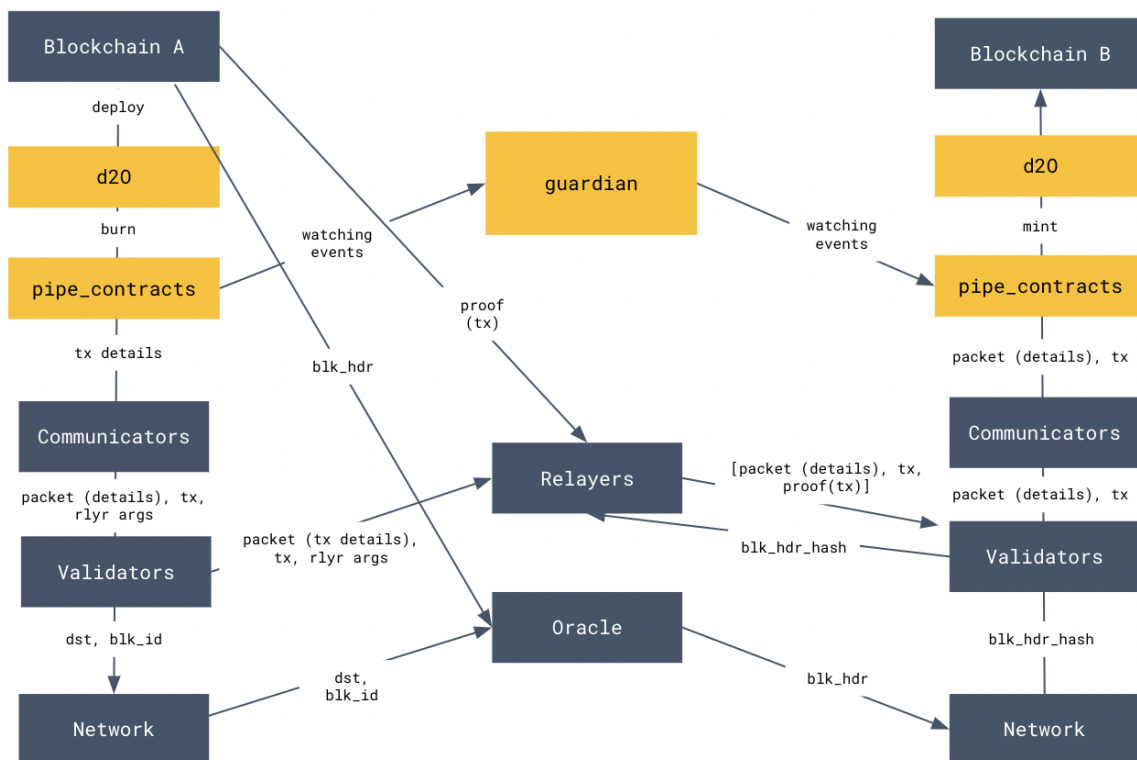


Liquidity Layer

DAM enables the secure teleportation of value between web3 networks using a mint-and-burn architecture. The base layer modularizes multiple cross-chain persistent message queues and relayers to expand the total addressable footprint, which can failover when required. Overarching this base aggregation, DAM's Protocol Layer contains a Monitoring Agent to resiliently match burns and mints and Security Controls to block attempts at unsupported transactions.

Another aspect of the Protocol are dApp Components, which are a collection of reference contracts that can be used by Liquidity dApps. These include a reference template that enables a digital asset to be a native asset on any blockchain to which it teleports, as well as a liquidity provider contract that enables value to be bundled prior to teleportation. As more Liquidity Dapps are developed, the more this layer will expand to support different use cases that interact with local primitives.

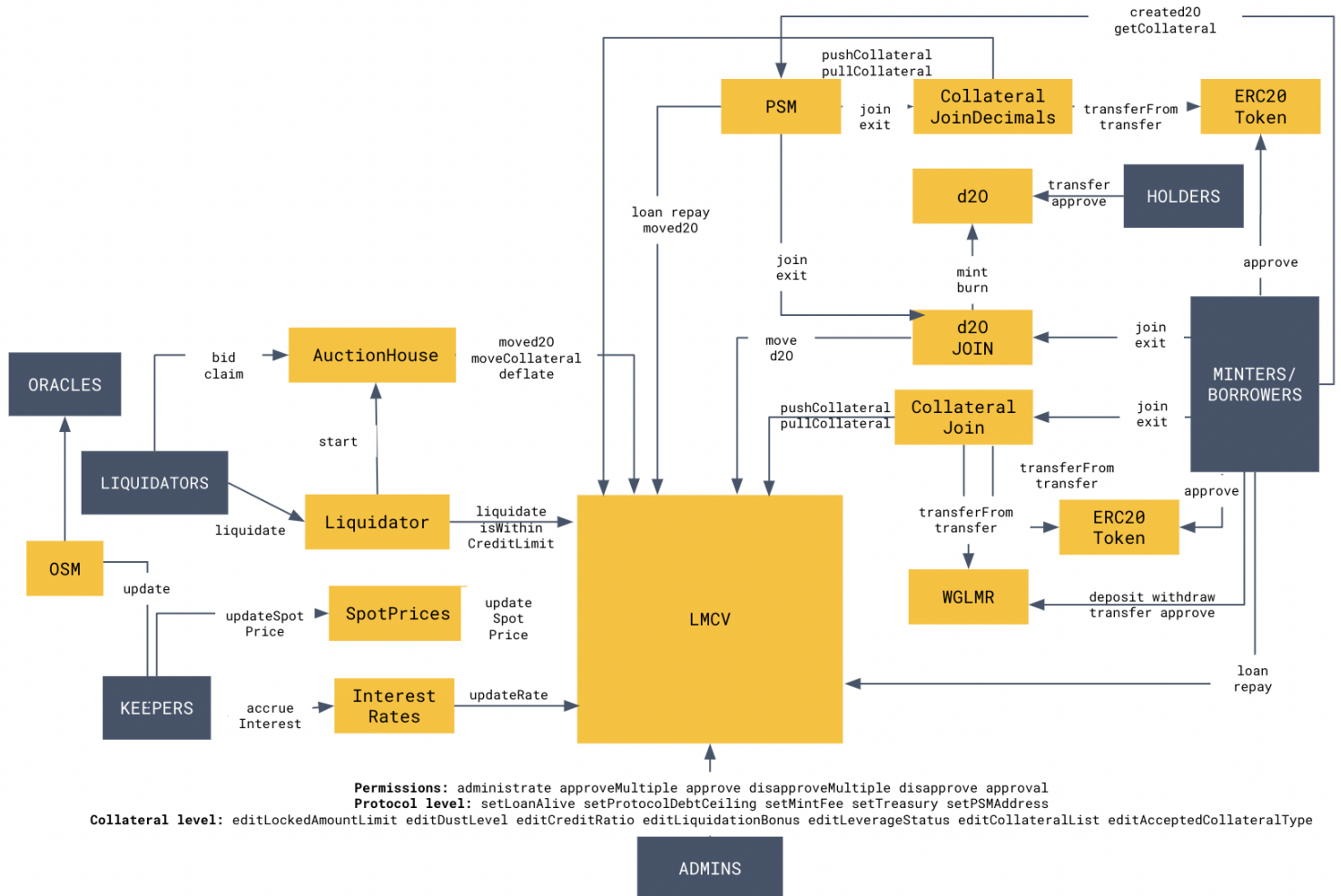
A flow summary of a Liquidity Layer use case can be found below:



Liquidity dApps

The Liquidity dApps universe will largely consist of third-party decentralized applications. To prove out the Protocol and dApp Components layers, DAM has developed an omnichain stablecoin protocol, a highly modified fork of MakerDAO to enable a decentralized stablecoin called d20 to be minted by a basket of tokens and a streamlined liquidation process. d20 helps web3 network bootstrap stablecoin liquidity to provide market depth for native tokens and serve as a local reserve asset.

A flow summary of the d20 Liquidity dApp can be found below:



Risk Management

Risk Management is a top priority for DAM. As it relates to the Protocol Layer, this manifests in the dReservoir and dGuardian. The dApp Components undergo rigorous security audits and testing methods consistent with traditional enterprise software

delivery are implemented. In addition to these items, DAM bifurcates risk management into *Project Level* and *Liquidity dApps*.

Project Level

- **Non-Custodial Protocol:** DAM does not custody any assets, this is the responsibility of borrowers and is explicitly mentioned in product documentation.
- **Operational Best Practices:** In connection with security learnings from Halborn, DAM's auditor and security advisor, including [smart contract audits](#).
- **Regulatory Compliance:** Working with third party legal counsel to take reasonable efforts to be compliant with relevant regulations to DAM.

Liquidity dApps

Moving forward, these areas of risk management will be the responsibility of third party application developers deploying onto DAM's liquidity infrastructure. However, given d2o is enabling the productization of the platform, see relevant topics below:

- **d2o Peg:** d2o is an overcollateralized stablecoin and the assets backing it can be monitored on-chain. A key part of the d2o design is that the underlying collateral is always redeemable by d2o minters. As d2o is initially only backed by the most trusted stablecoins, to the extent that the secondary market price deviates from \$1, an arbitrageur could purchase d2o at a discount, and burn it, and claim the underlying collateral for a profit, or vice versa. When minting d2o by using a basket of assets as collateral, a myriad of factors will be introduced such as loan-to-value ratios for each asset, asset caps, liquidation penalties and a third party liquidation system, all of which will be explained in significant detail with input from our advisors.
- **Your Collateral:** Collateral brought to the platform can be reclaimed at any time, which can be verified by auditing the smart contracts.
- **d2o Messaging.** d2o is not the same as fiat currency or U.S. Dollars and will never be marketed as such.

DAM Roadmap

DAM champions innovation by driving capital efficiency across sovereign networks. To achieve this, the roadmap is a function of not only expanding and enriching its technical infrastructure, but also pursuing partnerships to add as much utility to its ecosystem as possible. While DAM's roadmap is evolving based on community feedback, DAM's ethos is to promote secure participation in connection with agile development.

Core Contributors

DAM's core contributors have backgrounds in asset management, enterprise software and blockchain, working for firms such as R3, Myria, Fidelity, EY, IC Group and Oak Hill Capital. They've been collaborating for several years on both enterprise and public blockchain initiatives including the largest trade finance blockchain alliance, central bank digital currency pilots in several jurisdictions, a web3 native crypto index and a new NFT standard for scaling gaming assets.

Conclusion

DAM's omnichain liquidity infrastructure accelerates web3 innovation and adoption by helping optimize capital efficiency across all networks. Liquidity will flow to where it's needed most, and application developers will benefit from being able to deploy on multiple networks, expanding the reach and impact of their solutions. d2o represents DAM's initial liquidity dApp as a mechanism to solve an immediate challenge in emerging networks as well as laying the groundwork for powering a suite of dApps coordinating omnichain flows. DAM will unlock the next wave of killer web3 applications and ultimately, enable connectivity with traditional web2 sovereign networks to beget an ocean of liquidity.