

Inter Protocol Lite Paper

V1.0

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1.0 Introduction

- Inter Protocol is a community-organized, decentralized application launched on the Agoric chain that implements the Inter Stable Token (IST). BLD stakers govern Inter Protocol.
- The Inter Stable Token (IST) is an over-collateralized, decentralized stable token for the interchain ecosystem. IST is designed to maintain parity with the US dollar (USD).
- Inter Protocol connects to the multi-billion dollar interchain ecosystem through the Inter-Blockchain Communication (IBC) protocol. IST is available to all connected chains in the growing IBC ecosystem.
- Inter Protocol's IST is the fee token for the Agoric chain (BLD is the governance token).

2.0 Inter Protocol

Inter Protocol issues the IST stable token. Users may currently mint IST by either opening a vault, or by swapping an approved stablecoin for it in the Parity Stability Module (PSM). IST is minted on the Agoric chain and therefore an Agoric Smart Wallet is used in addition to a Cosmos wallet.

2.1 Vaults

Any user can deposit community approved crypto-assets into their own vault. Users can then mint IST by using their assets as collateral. The amount of IST that can be minted is determined by the value of the collateral in the vault, and the collateralization ratio established for that collateral type. Users can retrieve their collateral by paying back the IST that was borrowed plus the stability fee.

An oracle is used to determine the value of the collateral. If the collateral value falls below the liquidation threshold, the protocol liquidates the collateral, pays off the debt, and returns any remaining collateral, minus the liquidation penalty, to the user.

Users pay a minting fee when they mint IST, and they are charged a periodic, stability fee on the amount of IST debt (IST minted minus IST paid back) in the vault. The fees are added to the debt, and must be paid by the user when they wish to withdraw their collateral. The fee revenue flows to the Inter Protocol Reserve.

2.1.1 Liquidation

Due to the volatile price of crypto-assets, a collateralization ratio for each collateral type is set. It is designed to maintain over-collateralization in most circumstances. A decentralized oracle network reports the USD price of the crypto-asset to the protocol. In some circumstances, the price of the collateral may fall such that the value of the collateral in a particular vault is now below the liquidation threshold. In this case, the protocol takes the collateral from the vault and liquidates it through an on-chain auction. The auction sells collateral assets to cover the outstanding IST debt in the vault, and charges a liquidation penalty to the vault. Depending on the result of the auction, excess assets may be returned to vault holders, prioritized by their collateralization ratio at the time of liquidation.

2.1.2 Parameters

Parameters for vaults are set by governance, and may adjust to meet changing economic circumstances and risk factors (see Governance section for details). Vault parameters include:

- debt limits per collateral type
- collateral ratio
- liquidation threshold
- minting fee
- stability fee
- liquidation penalty

2.2 Parity Stability Module (PSM)

Users can swap approved stablecoins for IST in the PSM, allowing for risk-adjusted exposure to a variety of stablecoin assets. The PSM mints IST in exchange for approved stablecoins at a 1-to-1 ratio, up to a governance approved mint limit. In addition, the PSM allows users to swap IST for the stablecoins in the PSM at a 1-to-1 ratio.

This adds a minting mechanism that is tied to off-chain assets (e.g. USDC can be onboarded from USD) as well as acting as an incentive for arbitrageurs to keep the IST price stable against the assets held in the PSM.

IST issued by the PSM are backed by the stablecoin held in the PSM.

Parameters for the PSM are set by governance, and may change to meet changing economic circumstances and risk factors (see Governance section for details). PSM parameters include:

- debt limits per stablecoin
- swap-in fees
- swap-out fees

The fee revenue flows to the Inter Protocol Reserve.

2.3 Reserve

Inter Protocol maintains a Reserve of IST, and potentially other crypto-assets, to provide additional collateral to cover any shortfall that may result from liquidation. A shortfall occurs when the liquidation could not sell the collateral at a price sufficient to cover any outstanding IST.

The Reserve is a smart contract that holds the crypto-assets as ‘protocol controlled value’. Inter Protocol fees flow into the Reserve. Governance, via the BLD staker community in consultation with the Economic Committee, determines the size of the pool, and how the funds in the pool are used to maintain solvency.

2.4 Oracle Network

Inter Protocol relies on a decentralized, oracle network to report US dollar prices to on-chain applications, such as Inter Protocol. Oracle prices are used by the protocol to determine the collateralization ratio, the liquidation threshold, and initial liquidation price.

Governance determines which oracle networks to use.

3.0 Governance

Inter Protocol is governed by BLD stakers. BLD Stakers vote on implementing governance processes. BLD stakers also approve new collateral types for vaults, and stablecoins for the PSM, based on the collateral on-boarding process evaluations.

The BLD stakers elect an Economic Committee, whose goals are to reduce risk, grow usage and mitigate extreme events for Inter Protocol. Inter Protocol has a number of governance parameters that may be adjusted to manage user incentives and support the stability of IST in the face of varying market conditions. In normal times, the Economic Committee will be charged with adjusting these parameters and providing ongoing guidance on how best to maintain the economic stability of IST. This includes reviewing proposals for new collateral types and protocol improvement proposals.

In times of stress or in the face of extreme volatility, Inter Protocol's governance parameters may need to be adjusted very quickly, in less time than an on-chain vote can be accomplished. In those circumstances, the Economic Committee will be empowered to modify such parameters as necessary to address the event.

4.0 Glossary

Inter Protocol consists of several components implemented as smart contracts on the Agoric chain:

Agoric Smart Wallet: The trusted agent that bridges Cosmos level messages to the Agoric Hardened Javascript Virtual Machine (VM) smart contracts.

BLD: BLD is the native staking token on the Agoric chain.

BLD stakers: BLD holders who stake their BLD provide economic security for the chain, and participate in governance of Inter Protocol.

Economic Committee: A committee elected by BLD stakers to set the governance parameters of Inter Protocol, and to make recommendations to BLD stakers on the approved collateral for vaults and approved stablecoins for the PSM.

IST: Inter Stable Token "IST" is the stable token minted by Inter Protocol. IST seeks to maintain parity to the USD. IST is available over the Inter-Blockchain Communication (IBC) protocol.

Liquidation Auction: The Vaults liquidation auction utilizes a descending clock auction which either starts at or above the current oracle price and steps down in price, filling bids as it goes.

Oracle Network: Inter Protocol relies on a decentralized oracle network to provide the current dollar price of each collateral type.

Parity Stability Module (PSM): A mechanism where IST can be swapped back and forth for an approved stablecoin at a 1-to-1 ratio.

Reserve: The Inter Protocol Reserve holds crypto-assets as protocol controlled value. The Reserve protects Inter Protocol from large declines in collateral value by covering shortfalls in vault liquidation.

Vaults: Users with approved crypto-assets can lock their assets in vaults to mint IST. The set of approved assets is determined by protocol governance.

4.0 Disclaimer

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