XAUE Protocol Information

XAUE is an RWA share token protocol deployed on Ethereum Mainnet, with Tether Gold (XAUt) as its underlying asset.

1. Overview

The XAUE protocol consists of three core contracts:

- `FundToken` : the XAUE share token contract, responsible for share issuance, redemption requests, and related access control
- `Oracle` : the contract that manages NAV-related parameters and APR settings
- `Vault` : the custody contract for the underlying asset, responsible for controlled outflows

Underlying asset:

- `XAUt` : Tether Gold

2. Network Information

Item	Value
Network	Ethereum Mainnet
Chain Type	EVM
Underlying Asset	Tether Gold (XAUt)

3. Mainnet Contract Addresses

Module	Address
XAUE / FundToken	`0xd5D6840ed95F58FAf537865DcA15D5f99195F87a`
Oracle	`0x0618BD112C396060d2b37B537b3d92e757644169`
Vault	`0xC86Daf84C01c891B21dEA66f4cA41CD3799f9E6B`
Underlying XAUt	`0x68749665FF8D2d112Fa859AA293F07A622782F38`
Custody / Reserve Address	`0x07cd80c066e13679a70e125c76f76e796c8bc748`

4. Token Information

4.1 XAUE

Item	Value
Name	`XAU Reward Token`
Symbol	`XAUE`
Decimals	18

4.2 XAUt

Item	Value
Name	`Tether Gold`
Symbol	`XAUt`
Decimals	`6`

5. Core Deployment Parameters

5.1 Oracle Parameters

Parameter	On-chain Value	Human-readable Meaning
`baseNetValue`	`1000000000000000`	`1e15`
`maxAPR`	`100000000000000000`	Maximum APR is `10%`
`maxAprDelta`	`50000000000000000`	Maximum single APR change is `5%`
`minUpdateInterval`	`86400`	Minimum update interval is `1 day`

5.2 Initial FundToken Parameters

The following values reflect the protocol's initial deployment configuration and may be updated over time through governance or operational decisions.

Parameter	On-chain Value	Human-readable Meaning
`minDepositAmount`	`1000`	Initial minimum subscription amount is `0.001 XAUt`
`minRedeemShares`	`1000000000000000000`	Initial minimum redemption amount is `1 XAUE`

6. Decimal Conventions

The protocol uses three common precision standards:

Item	Precision
XAUt	`6 decimals`
XAUE	`18 decimals`
NAV / APR parameters	`1e18 precision`

7. Initial Pricing Reference

Under the current design baseline where `baseNetValue = 1e15`:

- `1 XAUt = 1000 XAUE`

This serves as the initial pricing reference at deployment.

8. Oracle Calculation Model

The Oracle calculates the latest NAV using a linear interpolation model based on APR.

8.1 Core Variables

Variable	Meaning
`baseNetValue`	NAV at the start of the current period, with `1e18` precision
`currentAPR`	Current annual percentage rate, with `1e18` precision
`lastUpdateTimestamp`	Timestamp marking the beginning of the current period
`maxAPR`	Maximum allowed APR
`maxAprDelta`	Maximum allowed APR change per update
`minUpdateInterval`	Minimum time interval between updates

8.2 Formula

The Oracle computes the current NAV using the following formula:

```
NAV(t) = baseNetValue + baseNetValue × currentAPR × (t - lastUpdateTimestamp) / (365 days × 1e18)
```

Where:

- `t` is the current block timestamp
- `baseNetValue` is the NAV at the start of the current period
- `currentAPR` is the APR effective during the current period

Under this model, NAV grows linearly within each period.

8.3 Update Logic

When a new APR is submitted, the Oracle first crystallizes the current interpolated NAV into a new `baseNetValue`, and then updates:

- `lastUpdateTimestamp`
- `currentAPR`

This ensures that accrued value from the previous period is preserved before the new APR takes effect.

8.4 Constraints

APR updates must satisfy the following constraints:

- the new APR must not exceed `maxAPR`
- the difference between the new APR and the current APR must not exceed `maxAprDelta`
- the time interval between two updates must not be shorter than `minUpdateInterval`

9. Oracle Read Interfaces

The Oracle exposes the following core read interfaces:

9.1 `getLatestPrice()`

Returns the latest NAV at the current point in time.

- Return type: `uint256`
- Precision: `1e18`

This value is the primary on-chain pricing reference for XAUE shares.

9.2 Other Common Read Parameters

Interface	Description
`baseNetValue()`	Returns the NAV at the start of the current period
`currentAPR()`	Returns the current APR
`lastUpdateTimestamp()`	Returns the timestamp of the latest period start
`maxAPR()`	Returns the maximum allowed APR
`maxAprDelta()`	Returns the maximum single APR change
`minUpdateInterval()`	Returns the minimum update interval

10. System Architecture

FundToken

FundToken is responsible for:

- managing the XAUE share token
- controlling the user whitelist
- processing redemption requests and approval states
- coordinating with the Oracle and Vault for subscriptions and redemptions

Oracle

Oracle is responsible for:

- maintaining NAV-related parameters
- enforcing APR update constraints
- controlling the update frequency of pricing inputs
- serving as the pricing parameter source for the protocol

Vault

Vault is responsible for:

- custody of the underlying XAUt asset
- controlled asset transfers to whitelisted destination addresses

- serving as the source of funds for redemption settlement

11. Access Control and Governance

The protocol uses role-based access control governed by multisig-managed administration.

Primary roles include:

- `DEFAULT_ADMIN_ROLE`
- `MANAGER_ROLE`
- `REDEMPTION_APPROVER_ROLE`
- `EMERGENCY_GUARDIAN_ROLE`
- `NAV_UPDATER_ROLE`
- `SETTLEMENT_OPERATOR_ROLE`

Operational constraints include:

- subscriptions, redemptions, and transfers are subject to whitelist rules
- Oracle parameter updates are constrained by frequency and delta limits
- Vault outflows require both role authorization and destination whitelist checks
- critical configuration is controlled through multisig governance

12. Notes

This document provides a public overview of protocol configuration and mainnet deployment parameters.
In the event of future upgrades, governance changes, or parameter updates, the latest on-chain state and official disclosures should prevail.