

Asset migration/ withdrawal

Ethereum and XRP Ledgers

PROBLEM TO SOLVE

- Migrating an amount of ERC20 Token assets from one ledger to another

Ethereum → XRP

- Withdrawing them back to the original ledger (Ethereum)

XRP → Ethereum

- Using an Oracle: locks the assets to be created in the XRP ledger (migration) and unlocks them in exchange of a payment in the XRP ledger (withdrawal)

COMPONENTS

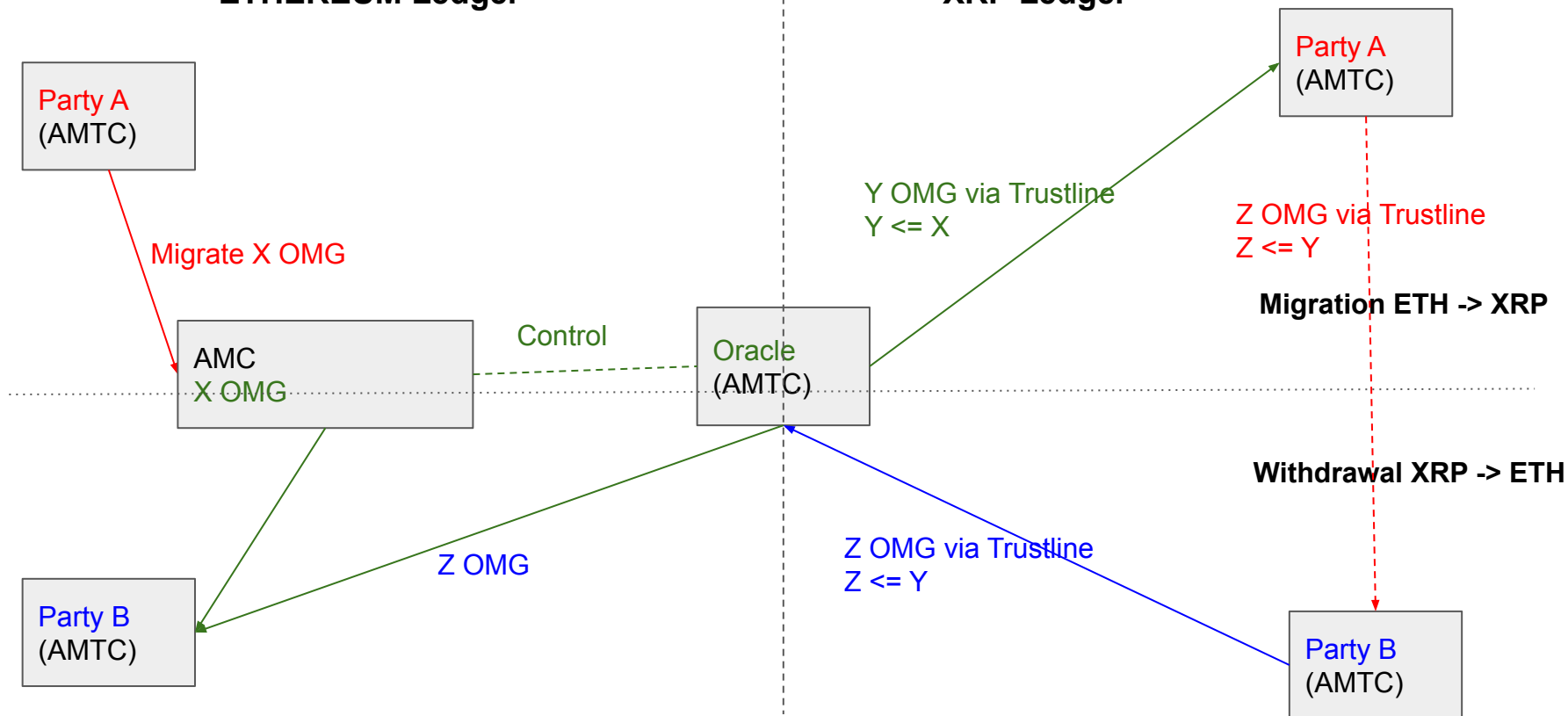
- DLTs: Ethereum and XRP.
- Asset Migration Smart Contract (AMC): smart contract in the Ethereum Ledger. Locks the assets to be migrated and only the Oracle can unlock them. Written in Solidity.
- Asset Migration Treaty Contract (AMTC): rules of interaction between the multiple DLTs and the parties. It can call directly the DLT node or the AMC. Written in Javascript/Node.js.
- ERC20 Token: assets to be locked up in the migration and unlocked while getting them back in the Ethereum Ledger
- Trustlines: objects allowing to perform payment transactions in a non-XRP currency in the XRP Ledger

PARTIES

- **ORACLE:** runs on a AMTC server. A trusted third party that locks the asset to be migrated to a ledger to another and back again.
- **PARTY A:** runs on a AMTC server. Migration of ERC20 Tokens to be locked up in the AMC, in exchange of a payment on the XRP Ledger in the same non-XRP currency
- **PARTY B:** runs on a AMTC server. Payment to the Oracle of ERC20 Tokens in the XRP Ledger to get them back in the Ethereum Ledger.

ETHEREUM Ledger

XRP Ledger



FLOW GUIDELINES: MIGRATION

- Parties: Party A and Oracle
- Party A migrates X OMG tokens to the AMC
- Only the Oracle can unlock these tokens
- The Oracle pays in exchange Y OMG ($Y \leq X$) in the XRP Ledger via a Trustline

FLOW DESCRIPTION: MIGRATION

ETHEREUM Ledger

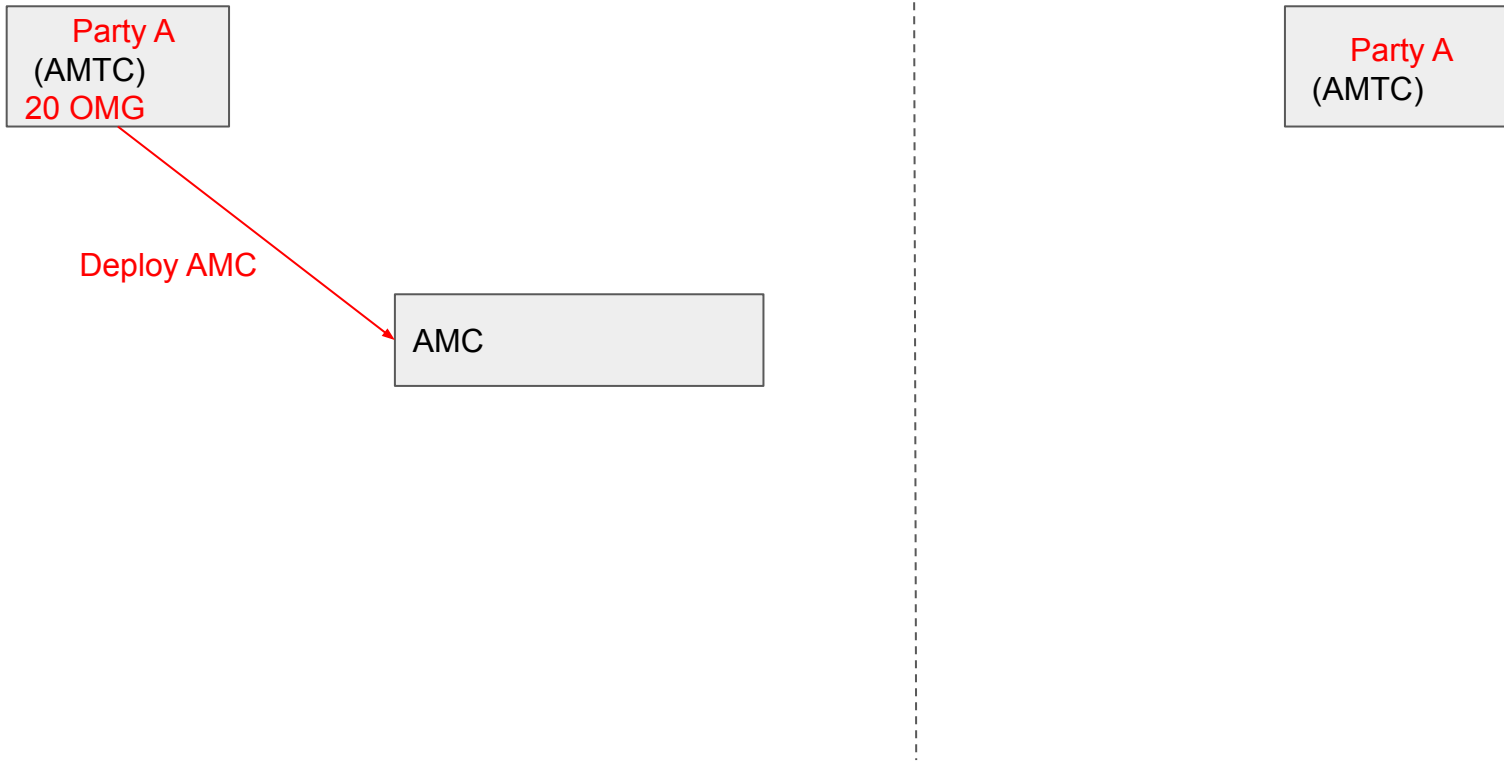
Party A
(AMTC)
20 OMG

Deploy AMC

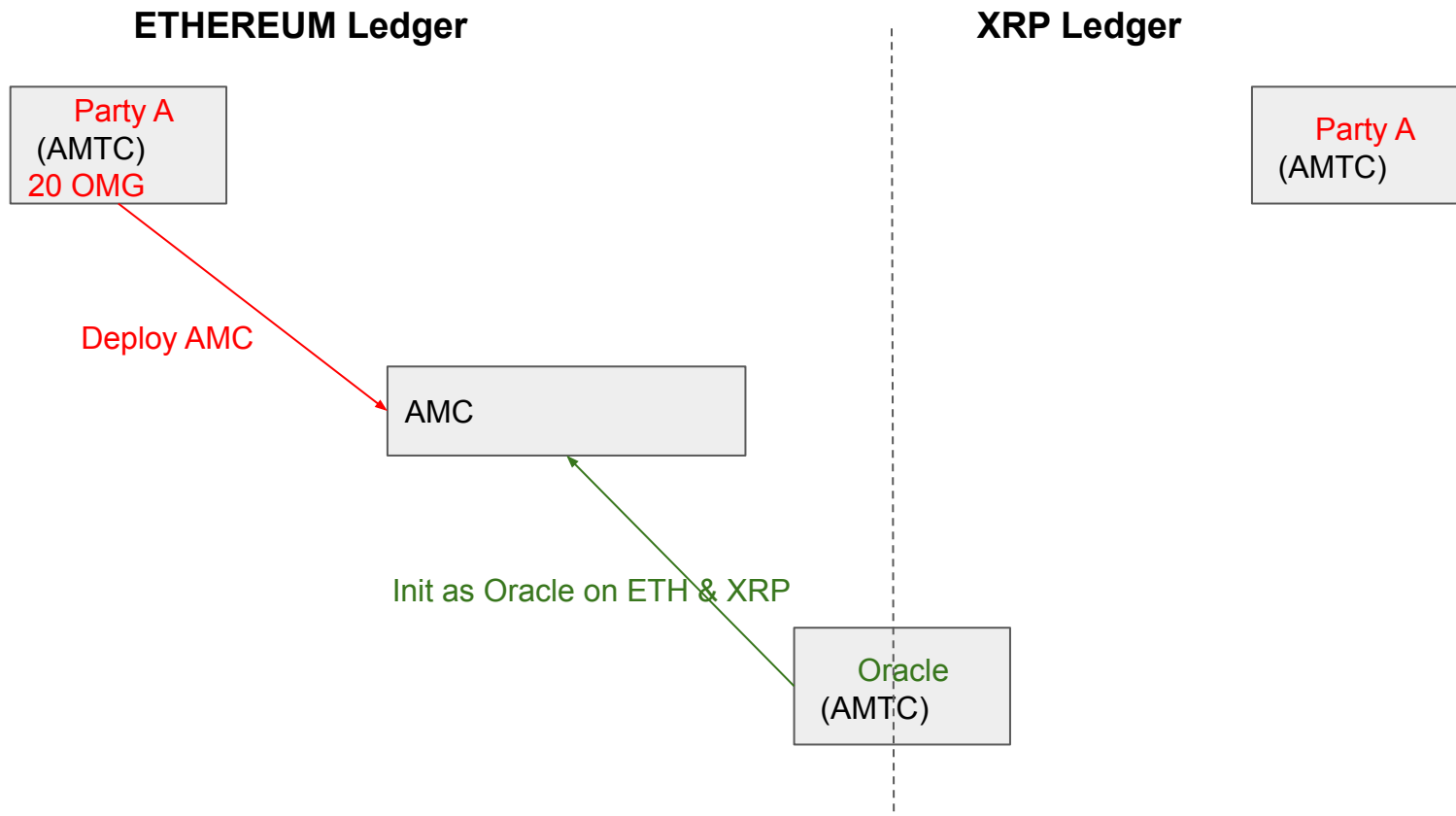
AMC

XRP Ledger

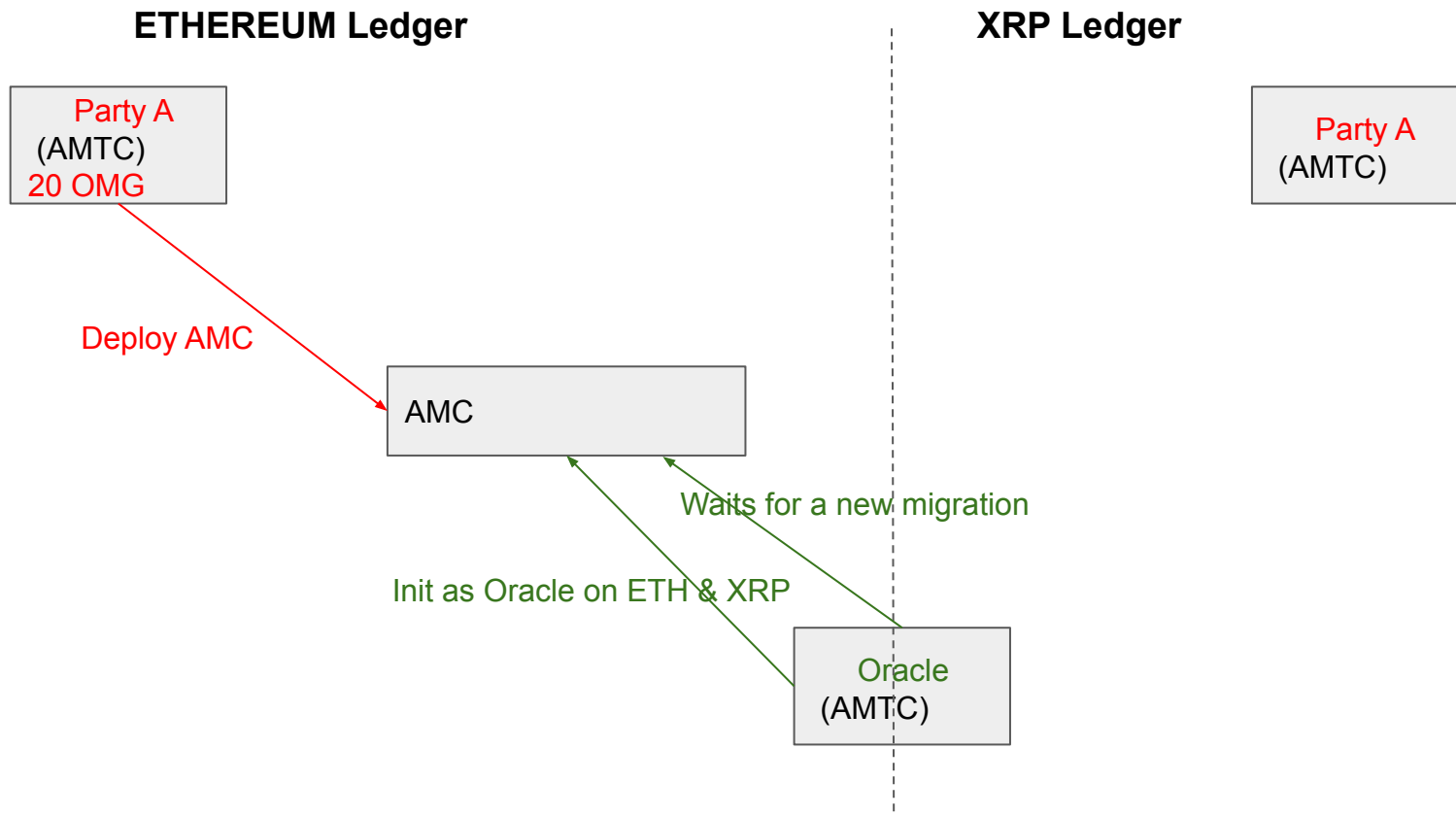
Party A
(AMTC)



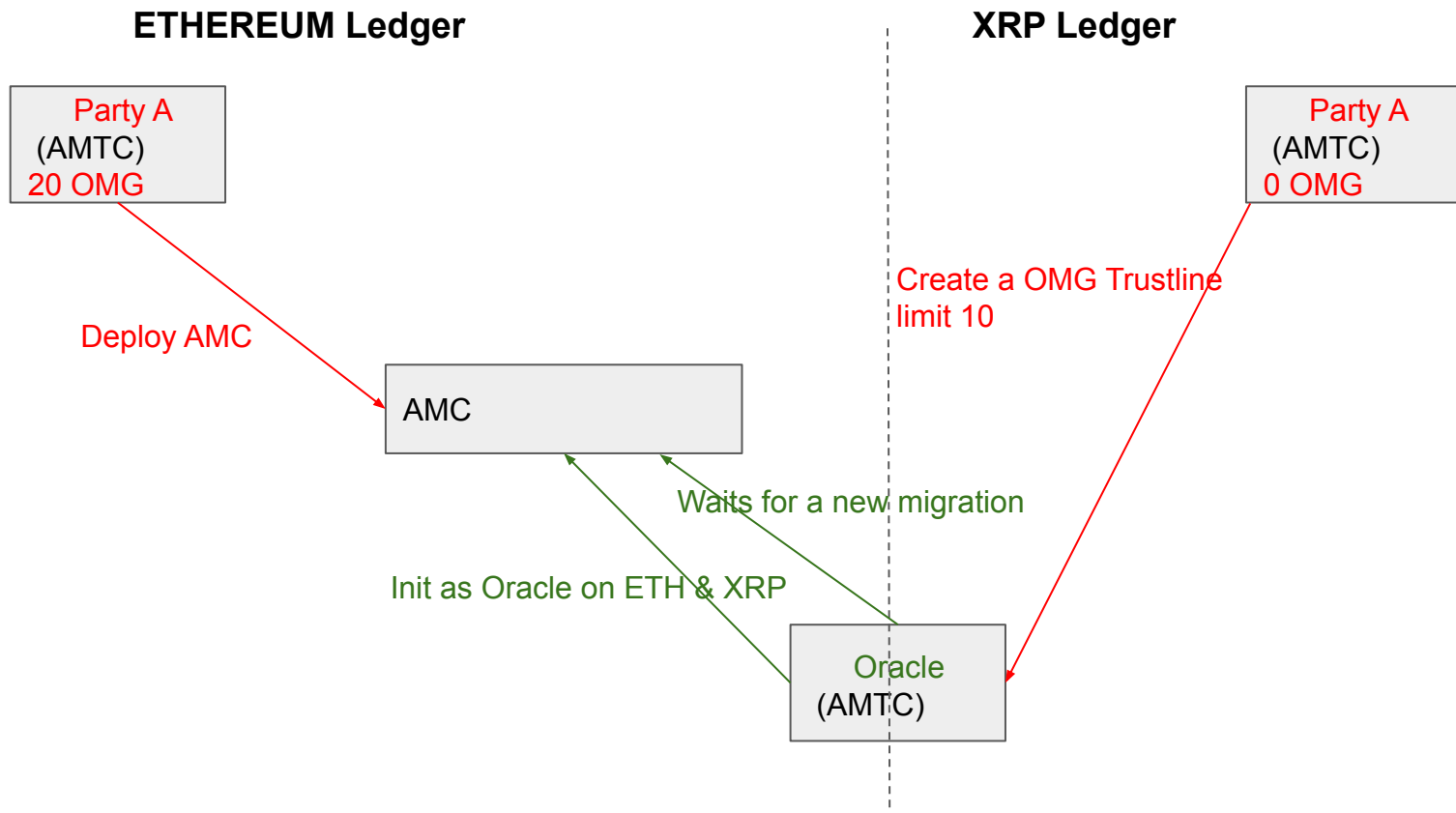
FLOW DESCRIPTION: MIGRATION



FLOW DESCRIPTION: MIGRATION



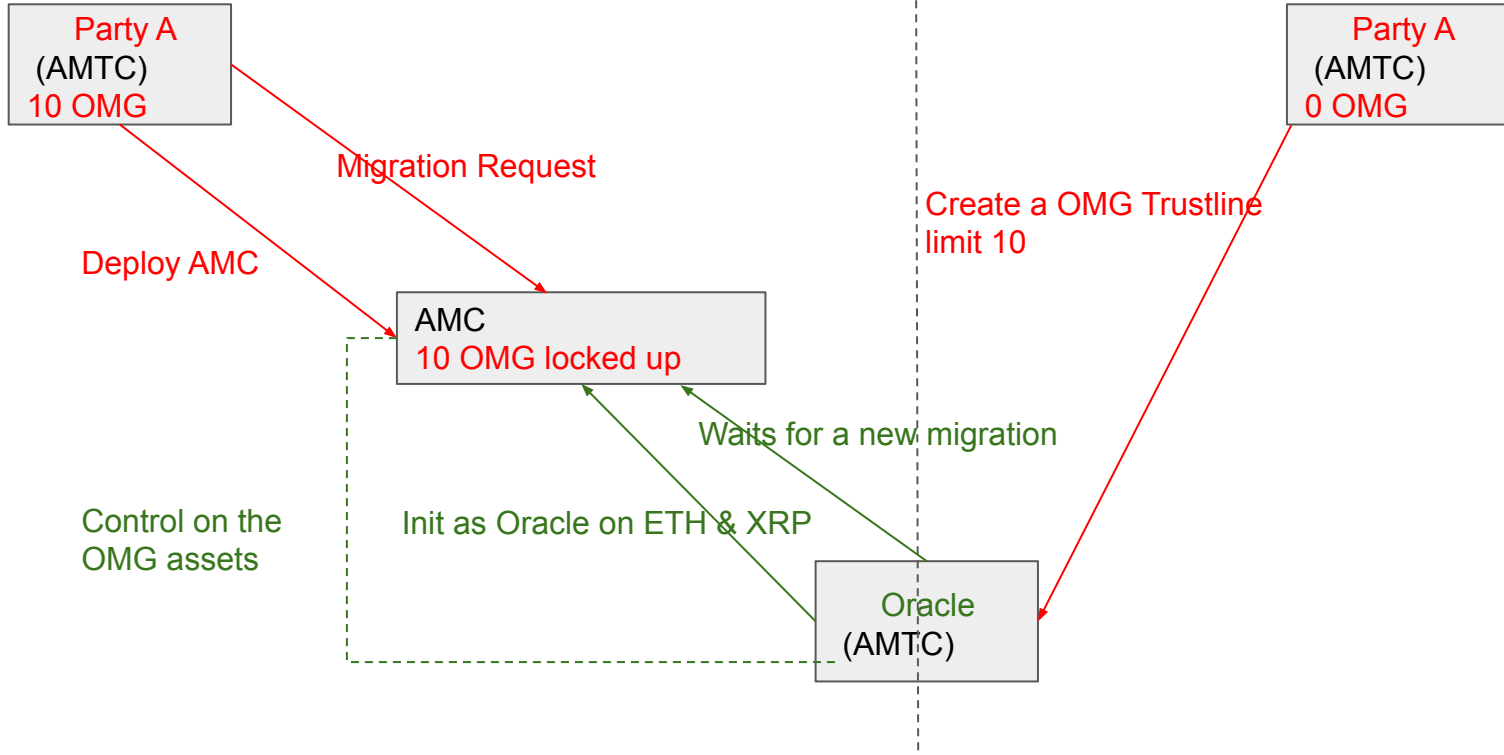
FLOW DESCRIPTION: MIGRATION



FLOW DESCRIPTION: MIGRATION

ETHEREUM Ledger

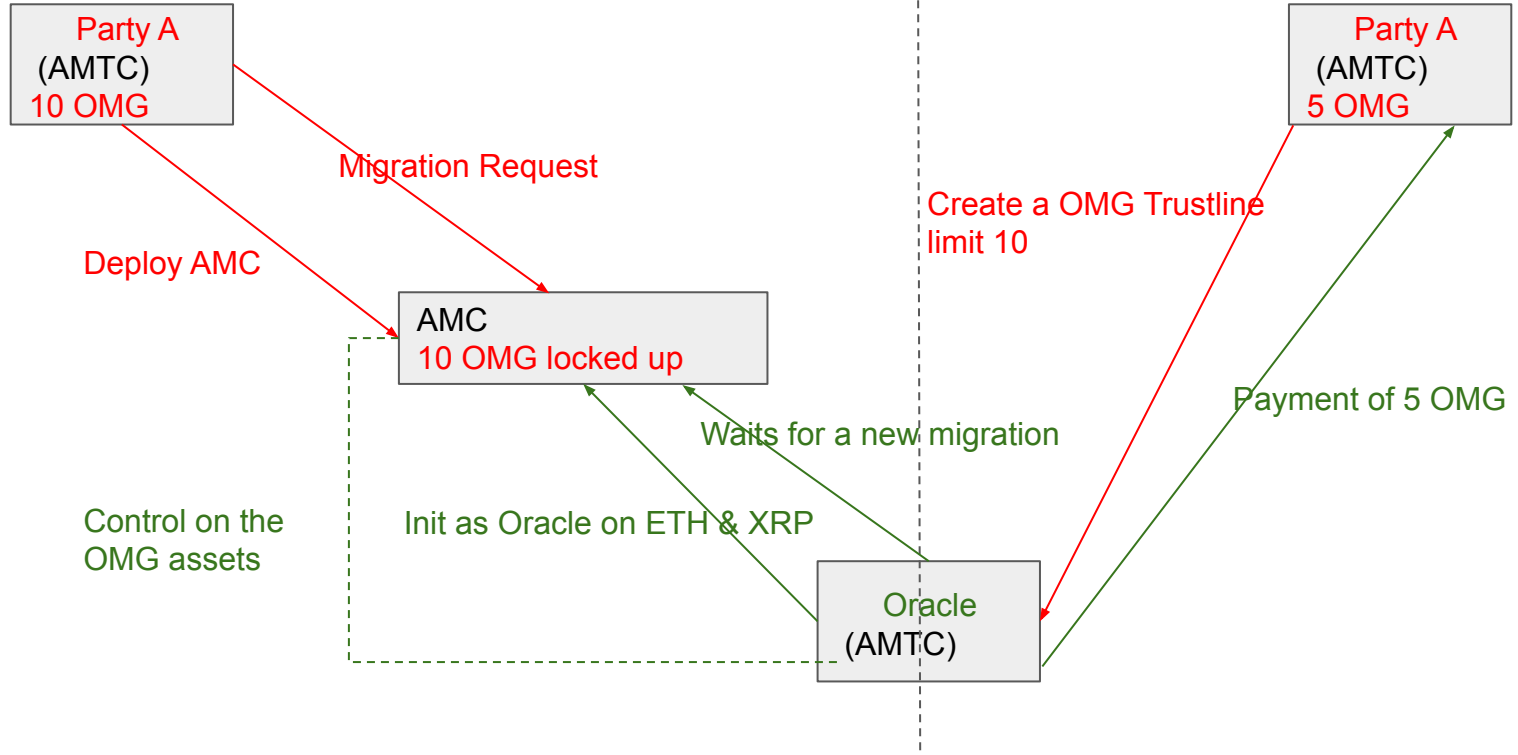
XRP Ledger



FLOW DESCRIPTION: MIGRATION

ETHEREUM Ledger

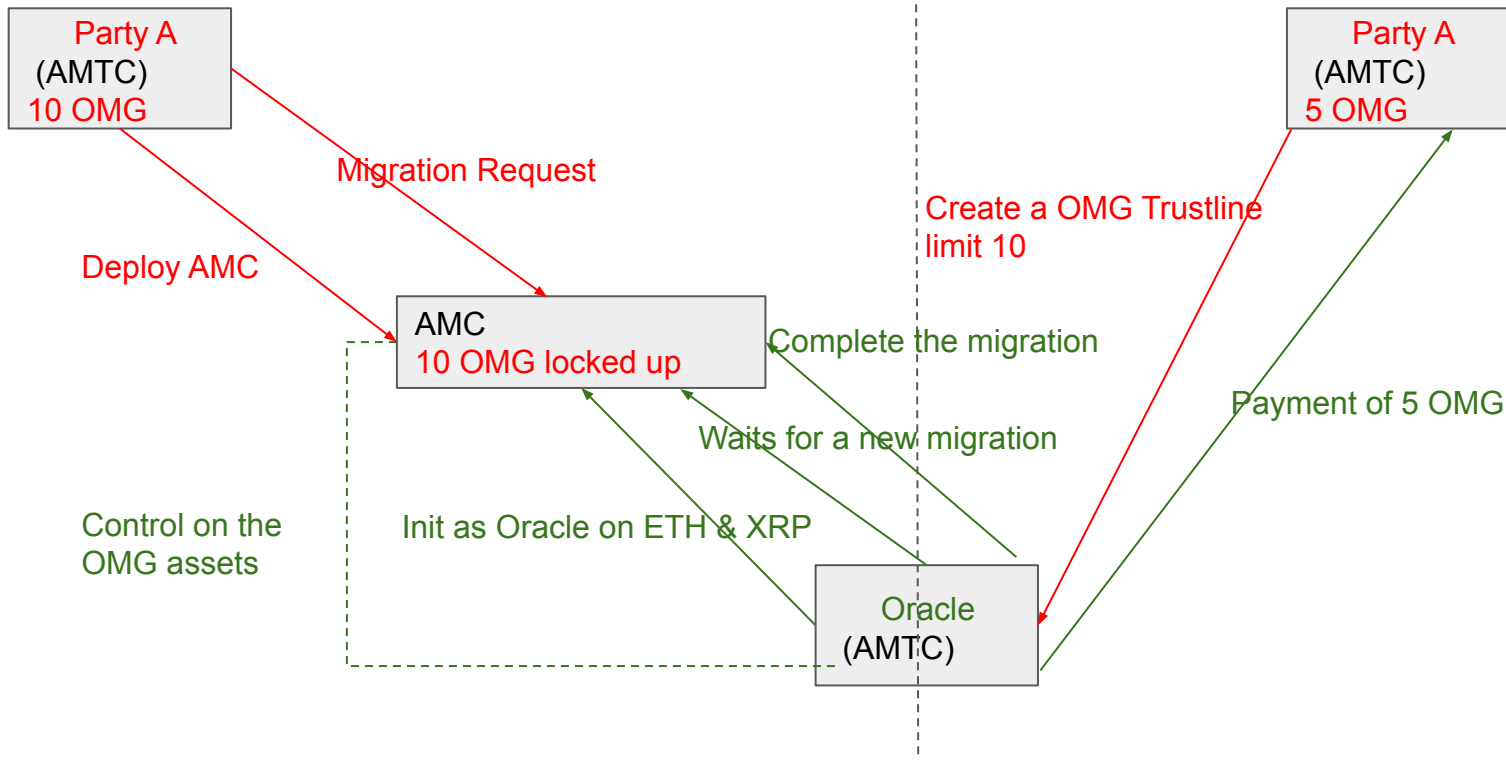
XRP Ledger



FLOW DESCRIPTION: MIGRATION

ETHEREUM Ledger

XRP Ledger



FLOW GUIDELINES: WITHDRAWAL

- Parties: Party B and Oracle
- Party B gets Z OMG from an account on the XRP Ledger, here it will be from Party A ($Z \leq Y$)
- Party B pays Z OMG to the Oracle on the XRP Ledger and in exchange the Oracle unlocks Z OMG from the AMC and pays Party B on the Ethereum Ledger.

FLOW DESCRIPTION: WITHDRAWAL

ETHEREUM Ledger

XRP Ledger

Party B
(AMTC)
0 OMG

AMC
10 OMG locked up

Party B
(AMTC)
0 OMG

Control on the
OMG assets

AN ACCOUNT X
(AMTC)

Oracle
(AMTC)

AN ACCOUNT X
(AMTC)
XRP
SOME OMG TOKENS



FLOW DESCRIPTION: WITHDRAWAL

ETHEREUM Ledger

XRP Ledger

Party B
(AMTC)
0 OMG

Party B
(AMTC)

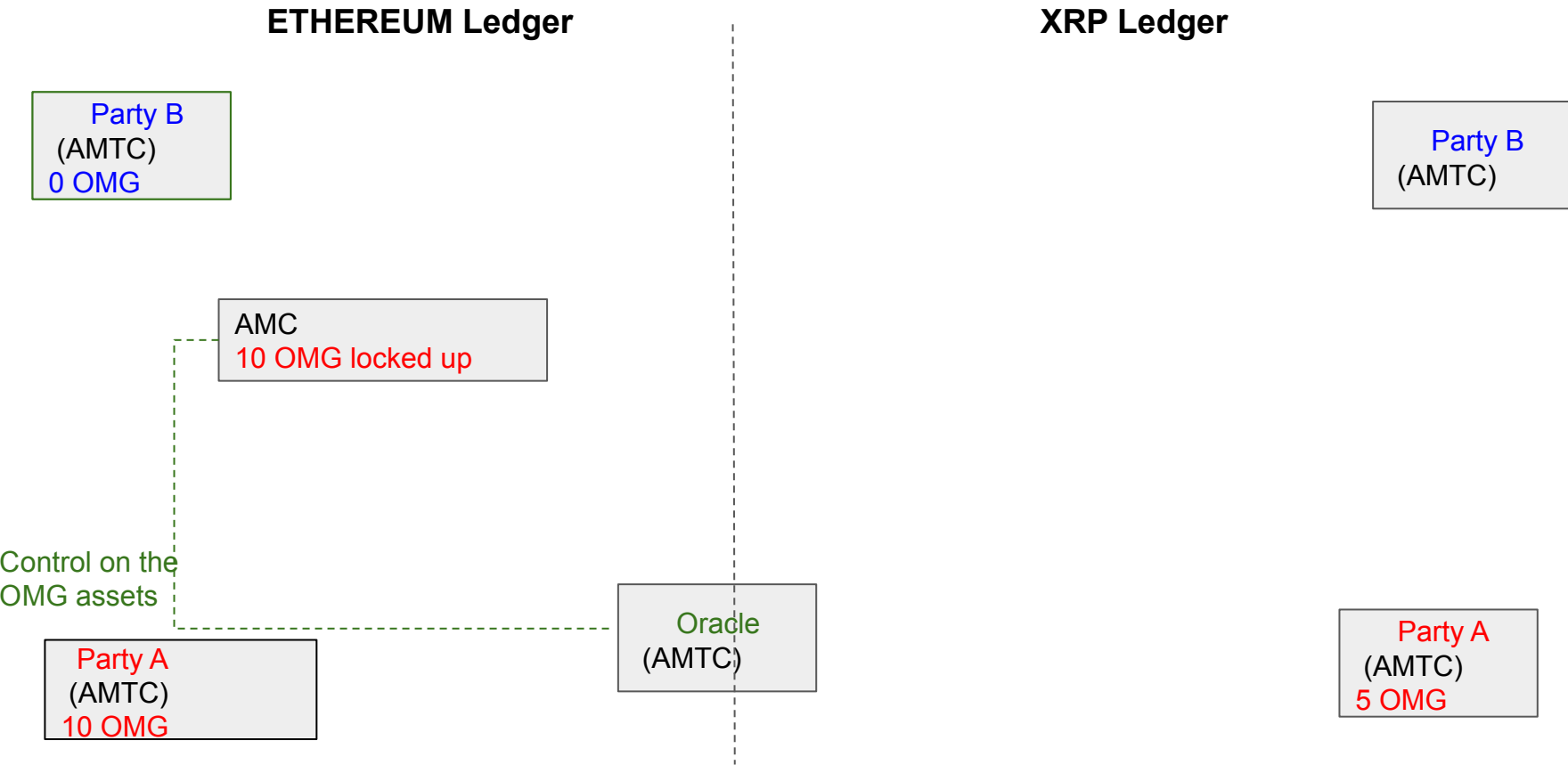
AMC
10 OMG locked up

Control on the
OMG assets

Party A
(AMTC)
10 OMG

Oracle
(AMTC)

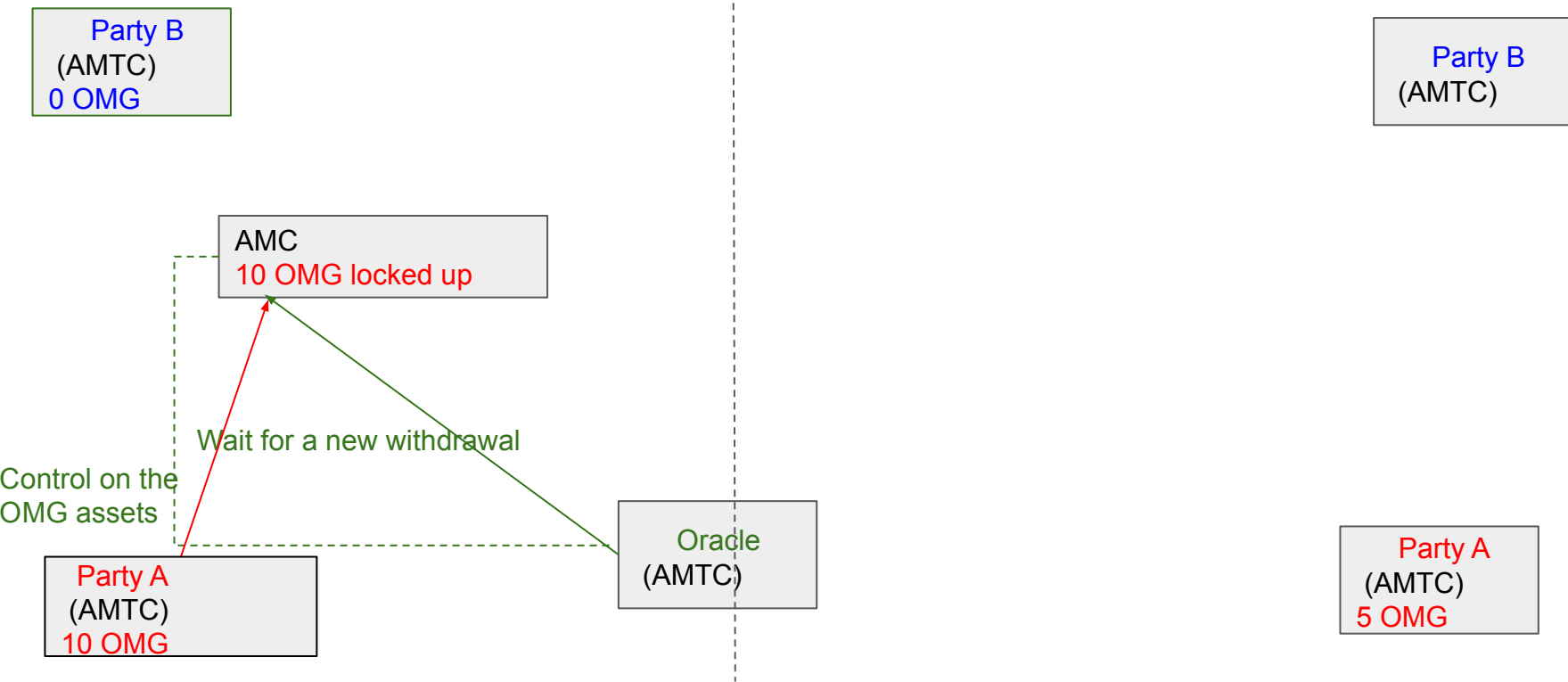
Party A
(AMTC)
5 OMG



FLOW DESCRIPTION: WITHDRAWAL

ETHEREUM Ledger

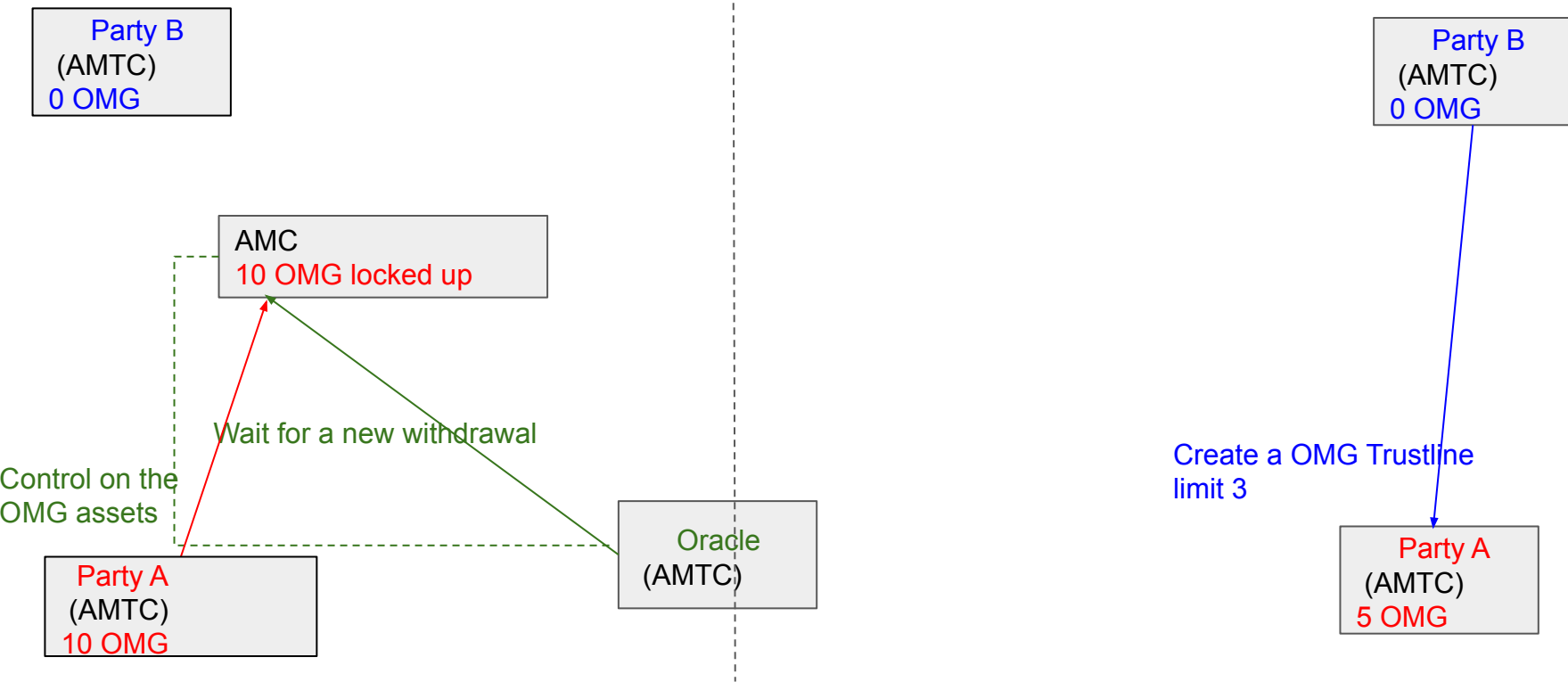
XRP Ledger



FLOW DESCRIPTION: WITHDRAWAL

ETHEREUM Ledger

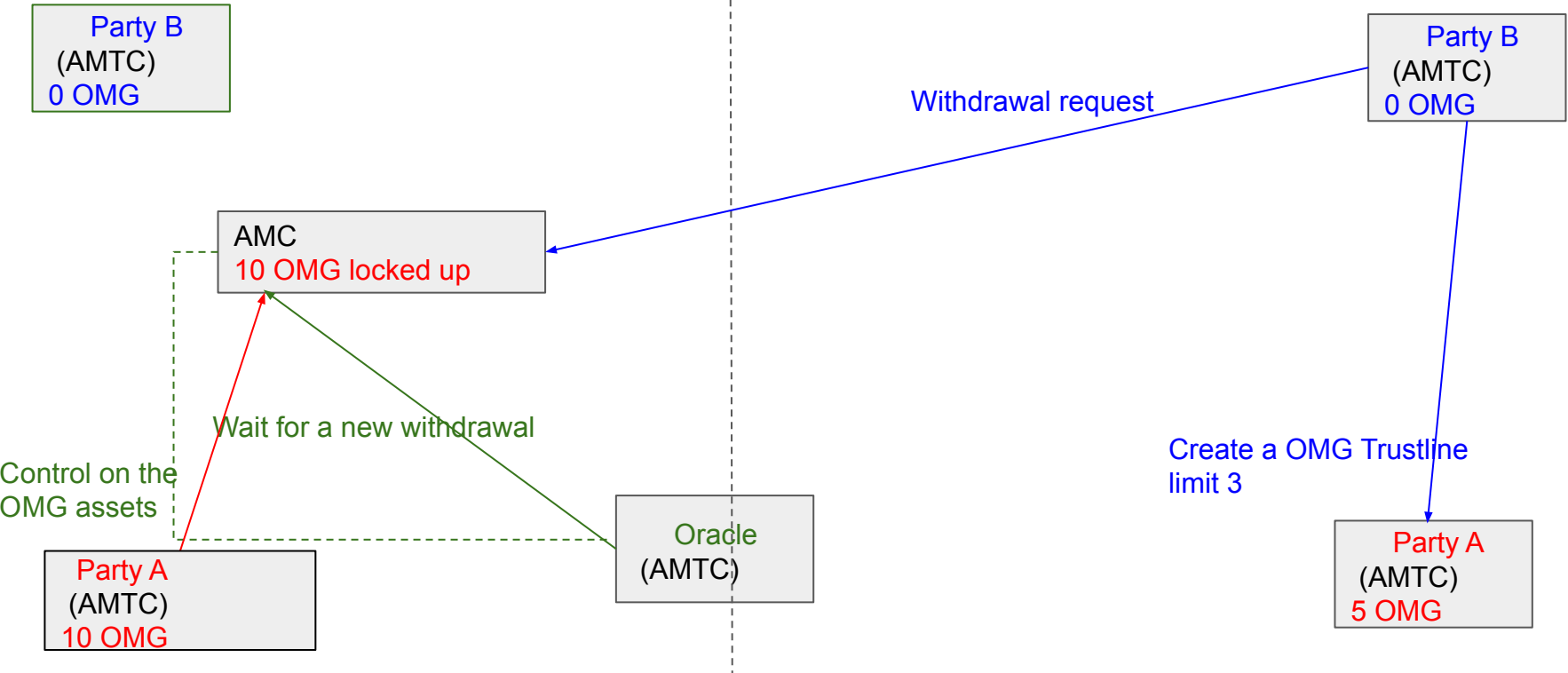
XRP Ledger



FLOW DESCRIPTION: WITHDRAWAL

ETHEREUM Ledger

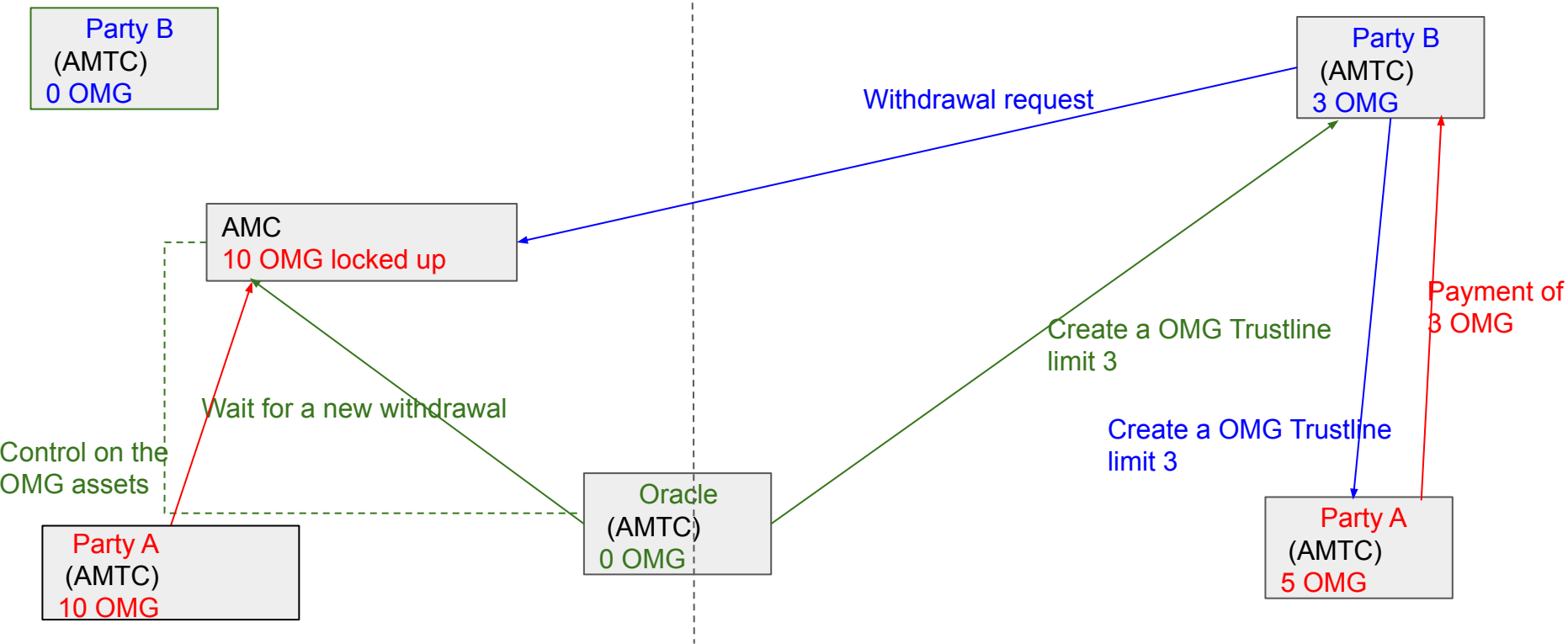
XRP Ledger



FLOW DESCRIPTION: WITHDRAWAL

ETHEREUM Ledger

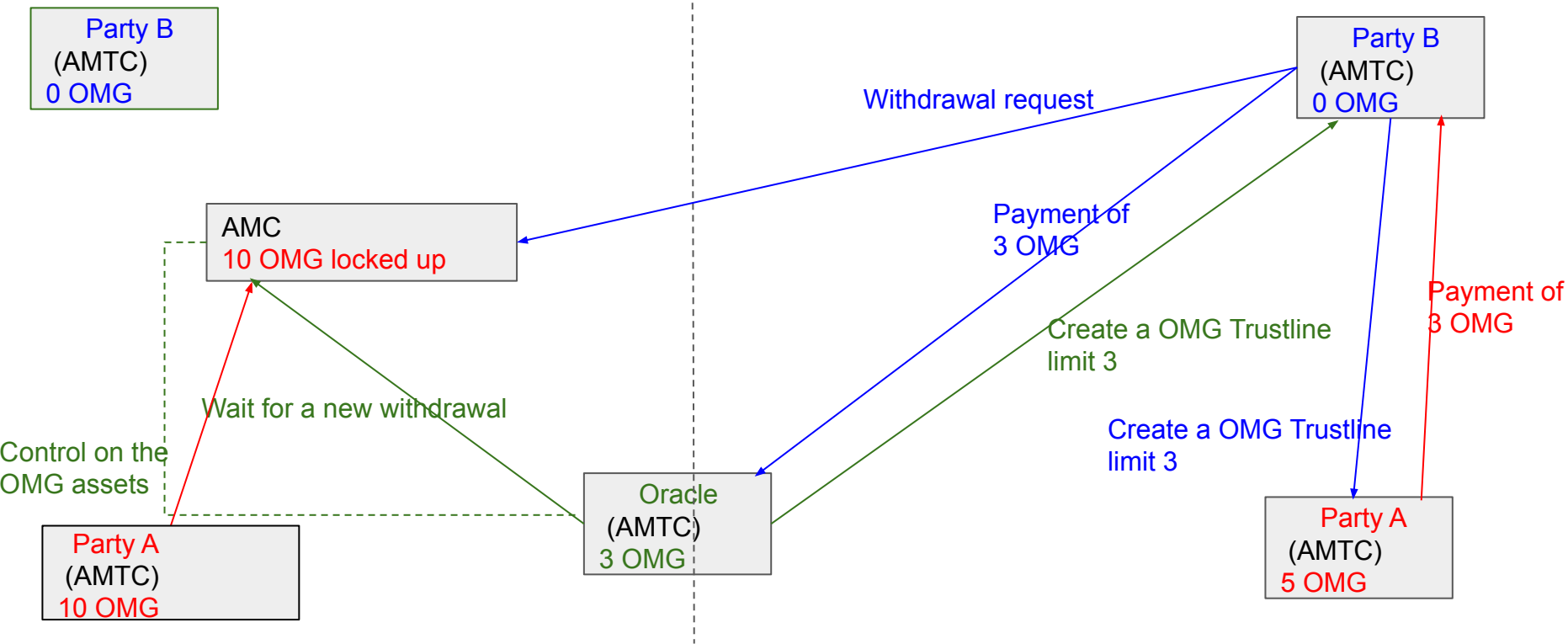
XRP Ledger



FLOW DESCRIPTION: WITHDRAWAL

ETHEREUM Ledger

XRP Ledger



FLOW DESCRIPTION: WITHDRAWAL

ETHEREUM Ledger

XRP Ledger

