Implementation of REA Contracts and Smart Contracts
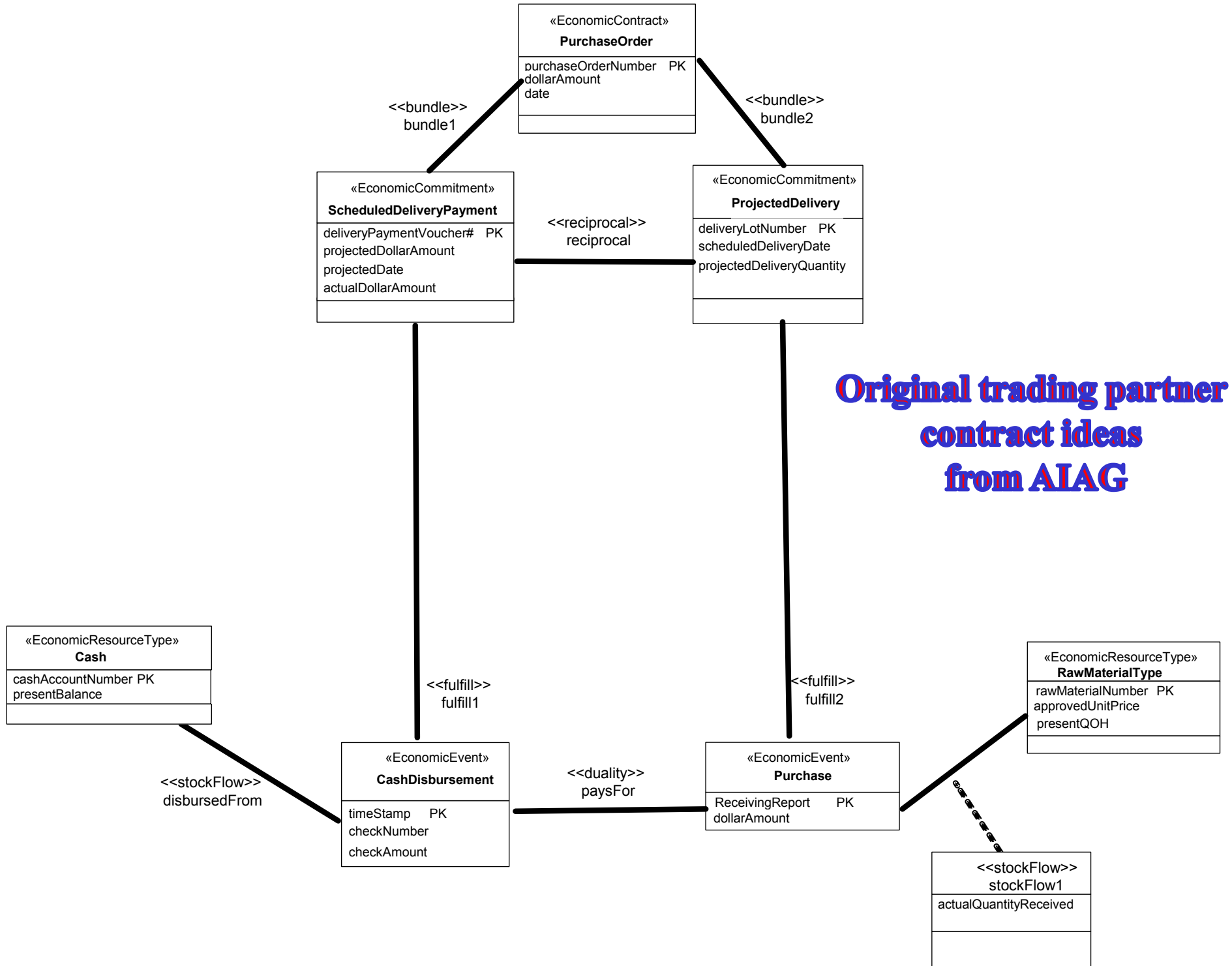
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What We Talked About

- Contracts
    - Smart
    - Legal
    - REA
- REA Contracts
    - Trading Partner View
    - Independent View
- Implementation of REA Contracts in Solidity
    - Types
    - Ownership Transfers

«EconomicContract»
PurchaseOrder

purchaseOrderNumber   PK
dollarAmount
date

<<bundle>>
bundle1

<<bundle>>
bundle2

«EconomicCommitment»
ScheduledDeliveryPayment

deliveryPaymentVoucher#   PK
projectedDollarAmount
projectedDate
actualDollarAmount

<<reciprocal>>
reciprocal

«EconomicCommitment»
ProjectedDelivery

deliveryLotNumber   PK
scheduledDeliveryDate
projectedDeliveryQuantity

Original trading partner contract ideas from AIAG

«EconomicResourceType»
Cash

cashAccountNumber PK
presentBalance

<<fulfill>>
fulfill1

<<fulfill>>
fulfill2

«EconomicResourceType»
RawMaterialType

rawMaterialNumber   PK
approvedUnitPrice
presentQOH

<<stockFlow>>
disbursedFrom

«EconomicEvent»
CashDisbursement

timeStamp   PK
checkNumber
checkAmount

<<duality>>
paysFor

«EconomicEvent»
Purchase

ReceivingReport   PK
dollarAmount

<<stockFlow>>
stockFlow1

actualQuantityReceived

M1 REA Contract with Designated Happy & Unhappy Paths (incomplete specification of independent view contract)

Smart Contract

- Computer program which directly controls the transfer of digital currencies or assets under certain conditions. These contracts are stored on the blockchain.

- Self-executing contracts with the terms of agreement being directly written into the code. Allows trusted transactions (agreements)to be carried out among anonymous parties without a need for a contract authority, legal system, or external enforcement mechanism.

- Transactions are: traceable, transparent, and irreversible

Solidity Programming Language

- "Libraries"
  - safemath.sol - Checks math operations (binary representations)
- Standards/Tools
  - ownable.sol - Allows determination of appropriate individual
  - erc721.sol
  - erc20.sol