CDM Smart Contract Taskforce
Interest Rate Reset Calculations

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ISDA

What is a Smart Contract?

What is a Smart Contract?

“A smart contract is an automatable and enforceable agreement. Automatable by computer, although some parts may require human input and control. Enforceable either by legal enforcement of rights and obligations or via tamper-proof execution of computer code.”

- Clack, C., Bakshi, V. & Braine, L. (March 2017). Smart Contract Templates: foundations, design landscape and research directions

What is a Smart Derivatives Contract?

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“Smart derivatives contracts are smart because they are derivatives contracts with some terms that can be automatically performed. Those terms are expressed in a form that enables their efficient automation. Other terms that are not automatically performed are expressed in natural language. As such, they are derivatives contracts and smart contracts (and smart legal contracts)”

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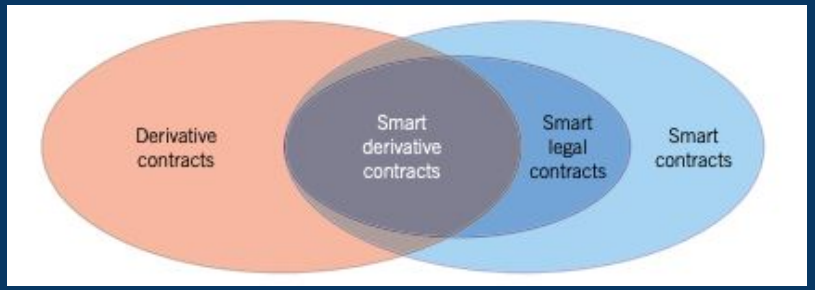

Smart Derivatives Contracts for Interest Rate Derivatives

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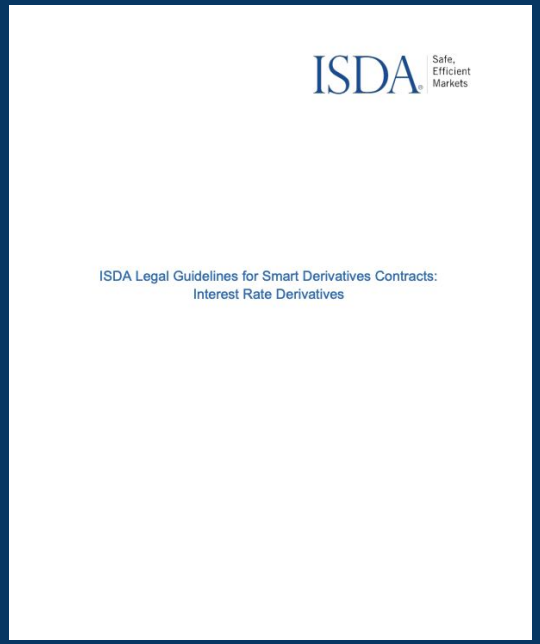

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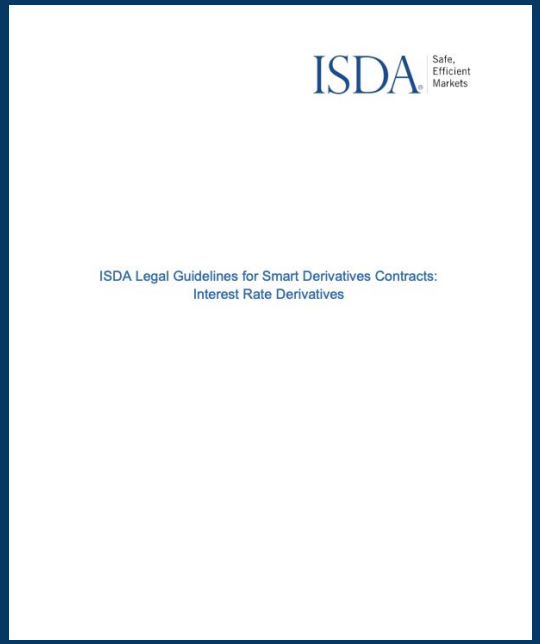
Smart Derivatives Contracts for Interest Rate Derivatives



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"A key trade process in the context of IRDs is the calculation of an interest amount which is payable under the IRD. As a calculation is based on various inputs, this provides a compelling use-case for automation, given that the process is easily translatable into code"

Why Reset?

Reset logic is important

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This means:

Reset accuracy is systemically important to global market integrity

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This creates:

10 million possible execution paths, even under conservative assumptions.

Don’t just take our word for it…

An ISDA survey of CDM community and ISDA WGs during Feb 2026 found, that of respondents:

- **Only 20% had fully automated** their rate reset process
- **55% reported discrepancies after a reset** occurring very frequently or occasionally
- **60% of exceptions** come from differences in calculation methodology or misalignment with trade documentation
- **40% of issues that cause delays in settlement** are disputes over contractual interpretation
- **60% found lack of data standardisation and legal/contractual interpretation** as barriers to automation of rate resets

The top 3 benefits of standardising the process cited were:

- **Consistent calculation logic across parties**
- **Reduction in reconciliation breaks/manual intervention**
- **Improved auditability and transparency**

What the CDM Solves — and What It Does Not

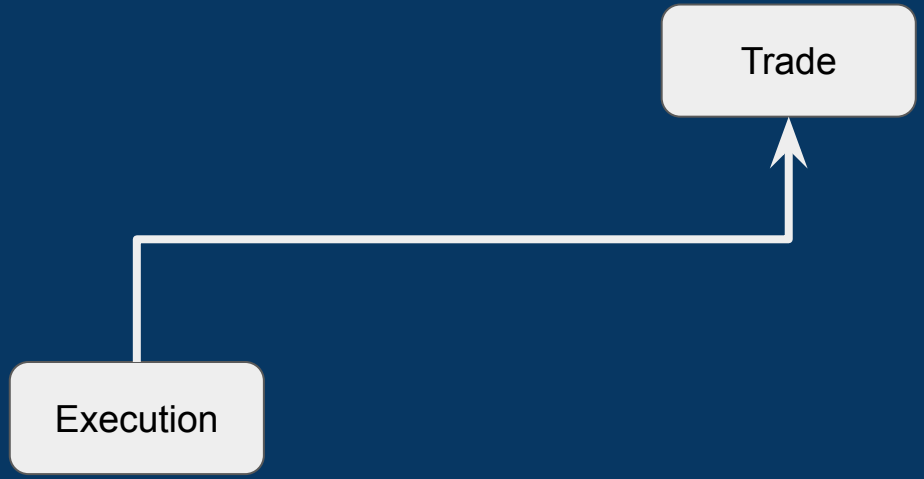
What CDM Solves

- Common declarative model:
  - Canonical representation of trades, events, and state
  - Shared lifecycle semantics across firms
  - Consistent outcomes independent of implementation
- **Result**: Agreement on what should happen

What CDM Does Not Provide

- Missing execution layers:
  - Trade-specific, functional logic
  - State persistence and control
  - Runtime orchestration (e.g. event scheduling, triggering)
- **Consequence**: Automation requires an execution layer within CDM.

Trade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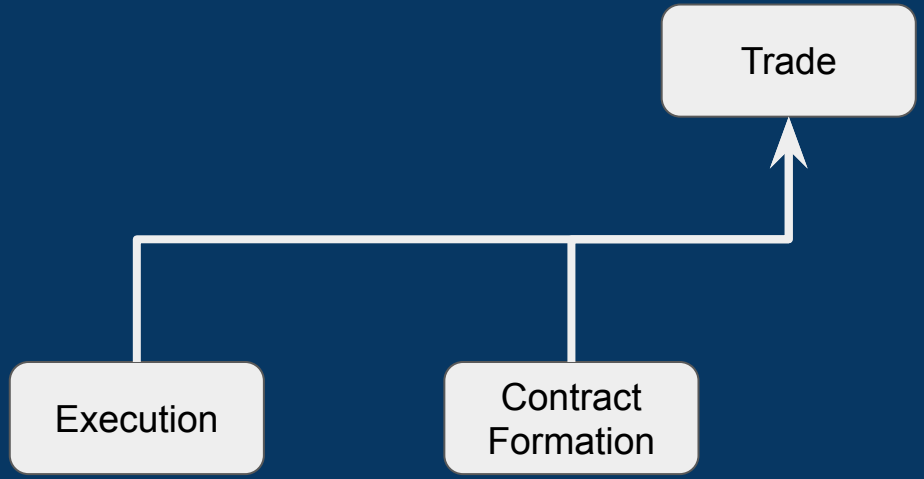
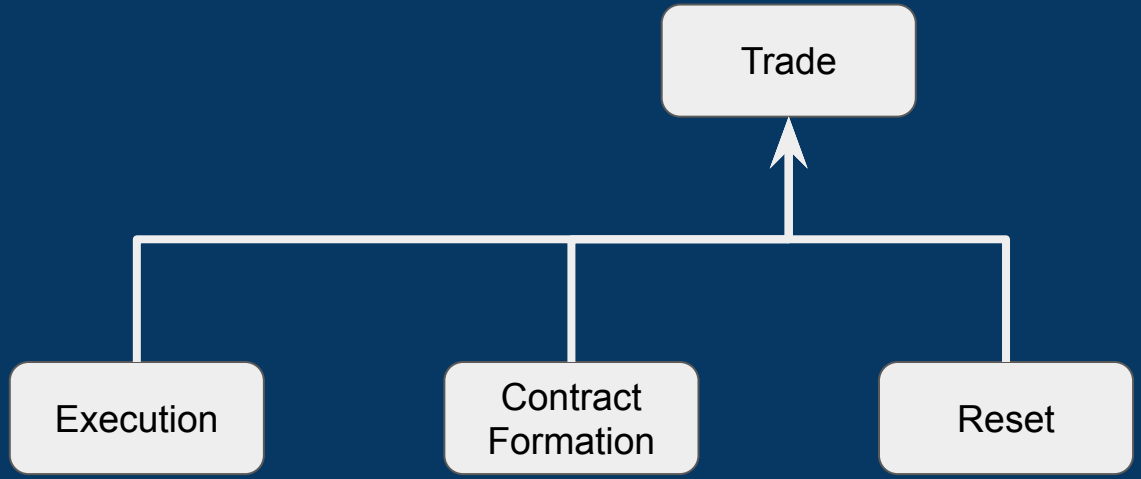
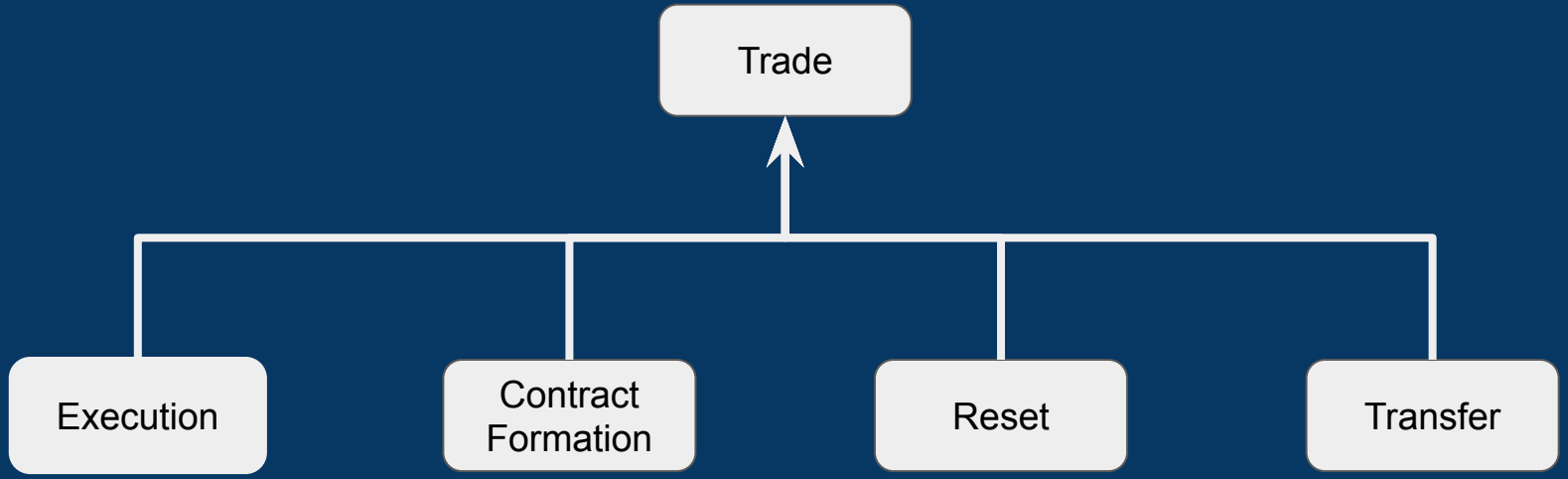

Trade
Execution
Contract Formation


Trade
Execution
Contract Formation
Reset


Trade
Execution
Contract Formation
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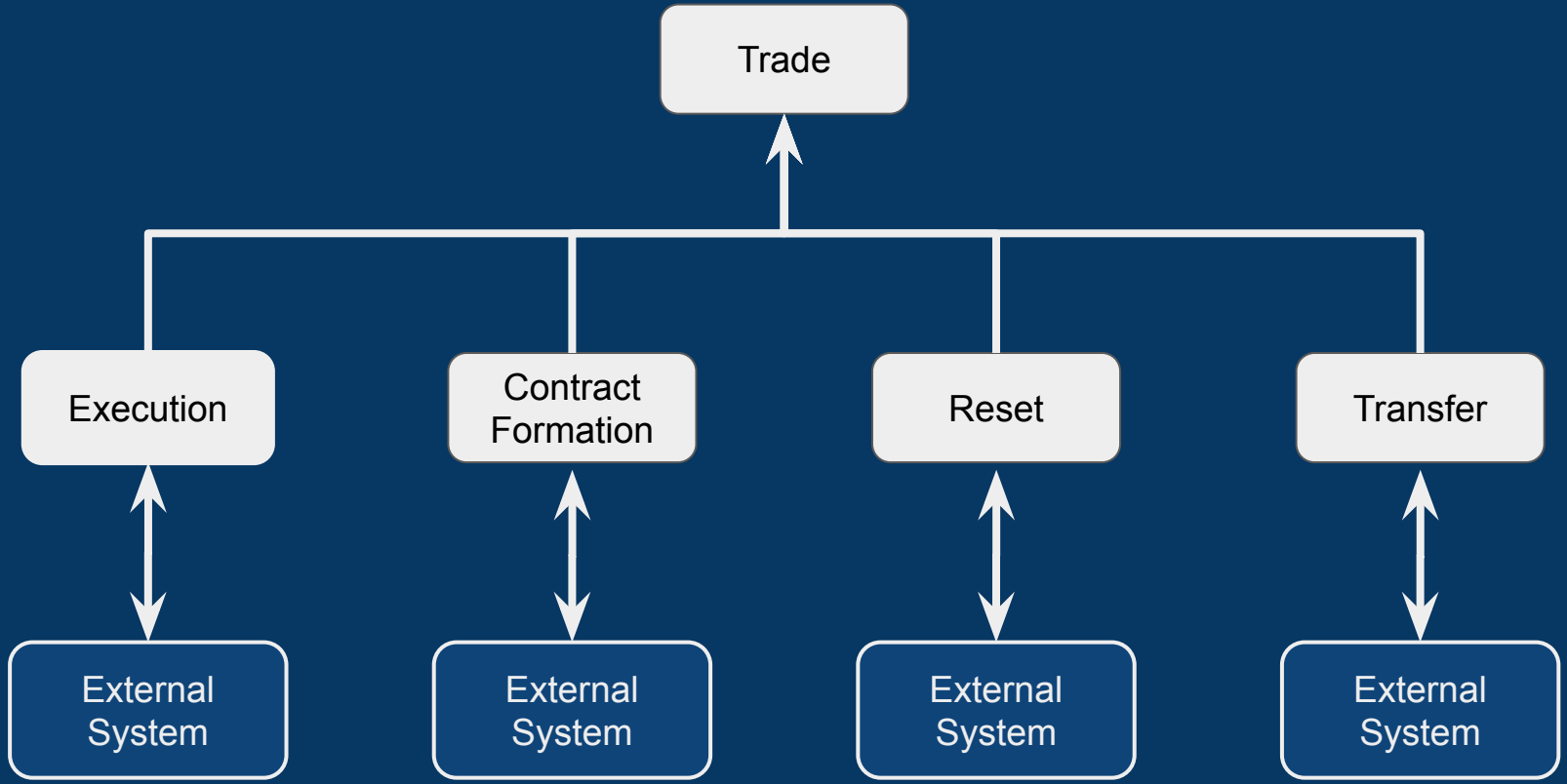
Transfer


Trade
Execution
Contract Formation
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Transfer
External System
External System
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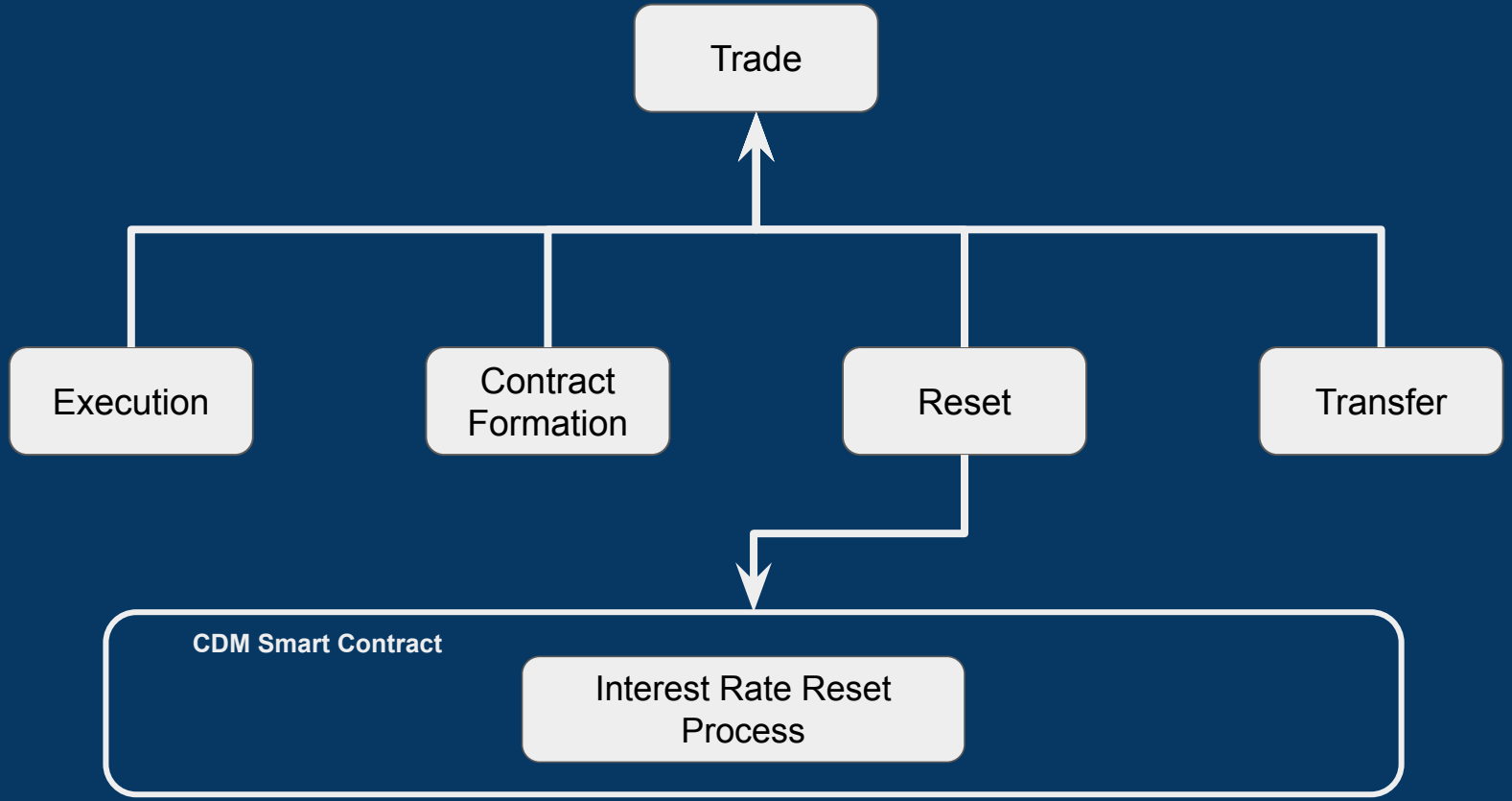
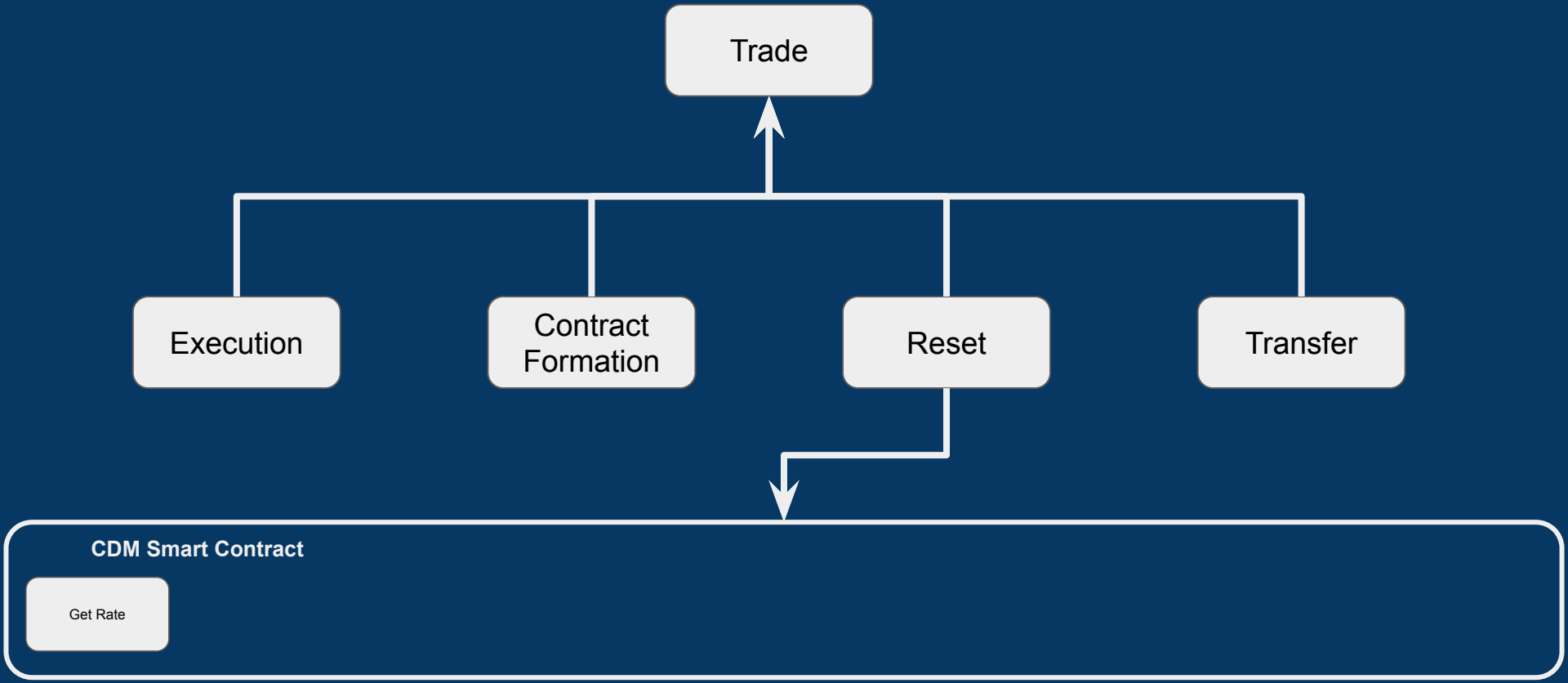
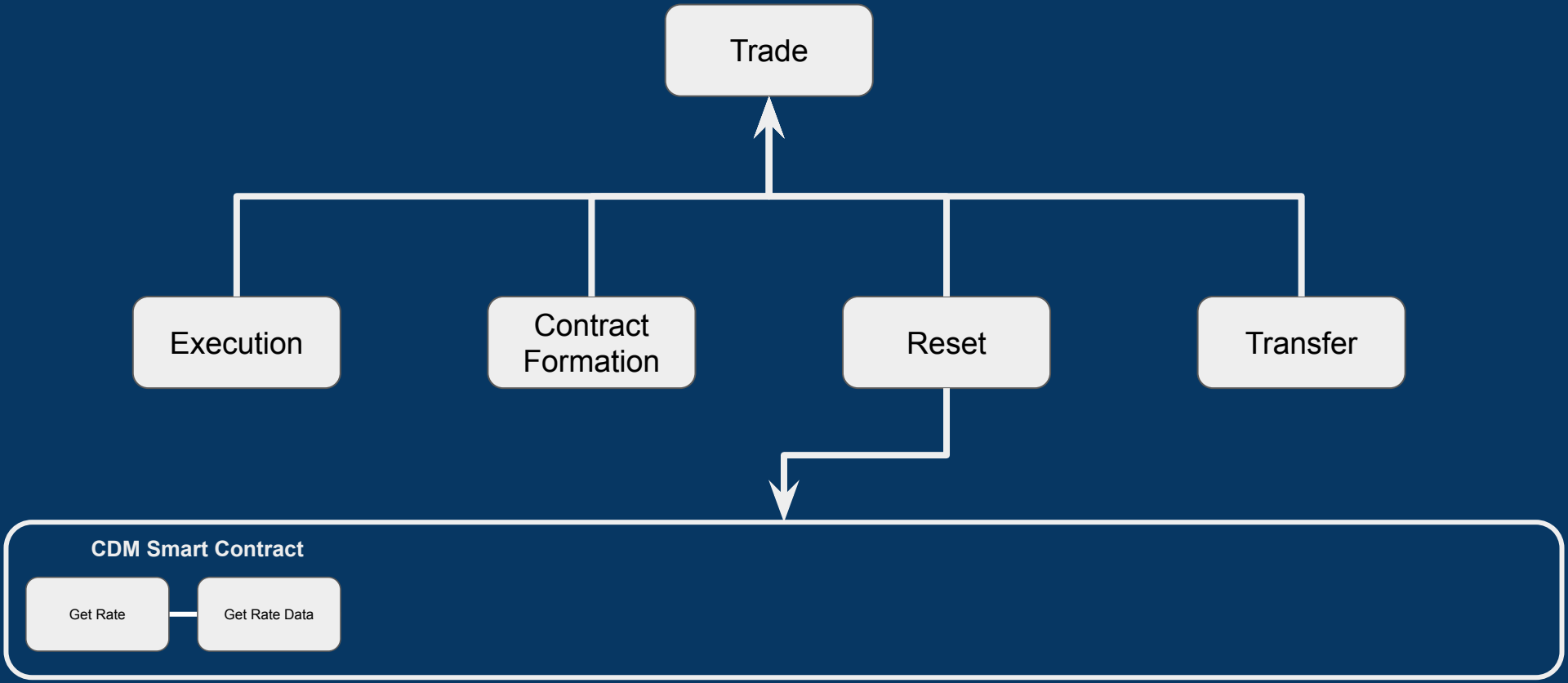

Trade
Execution
Contract Formation
Reset
Transfer
CDM Smart Contract
Interest Rate Reset Process


Trade
Execution
Contract Formation
Reset
Transfer
CDM Smart Contract
Get Rate


Trade
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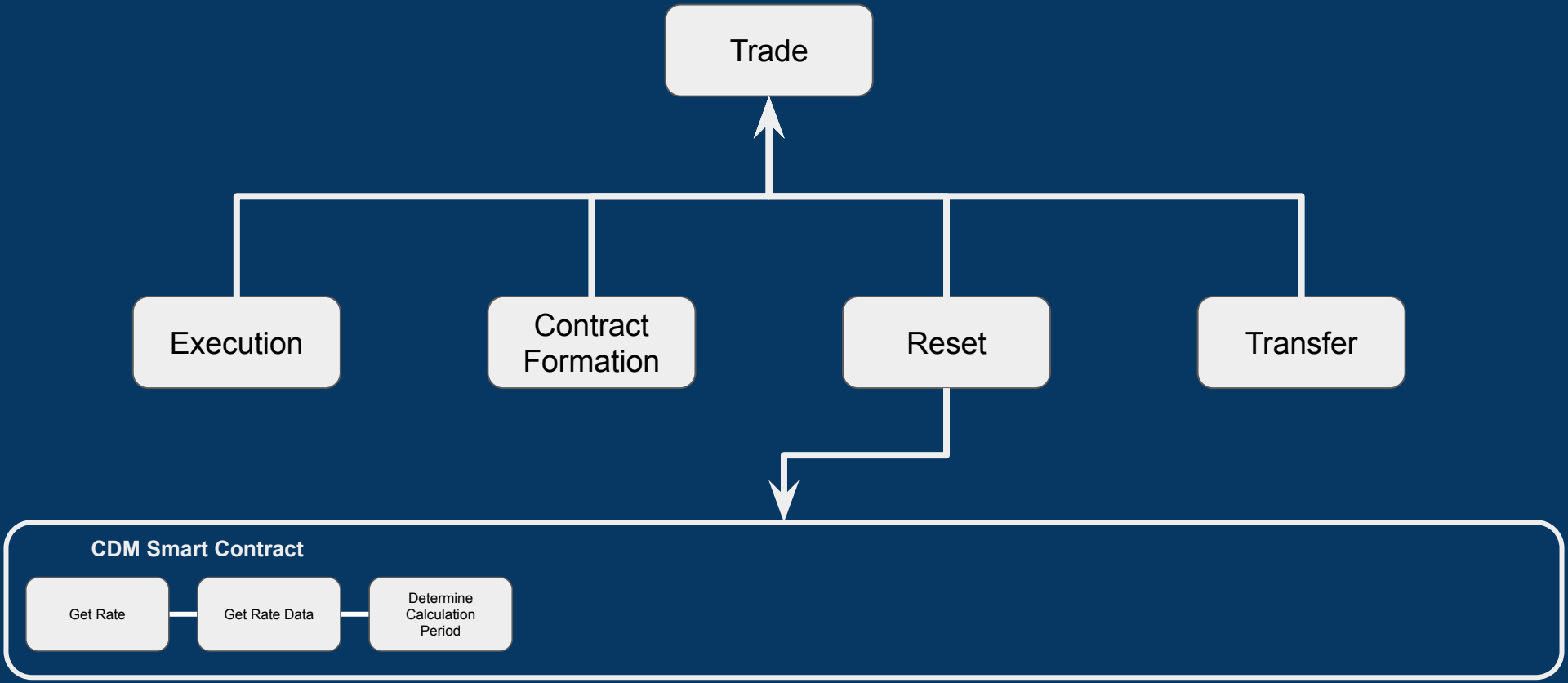
Contract Formation
Reset
Transfer
CDM Smart Contract
Get Rate
Get Rate Data


Trade
Execution
Contract Formation
Reset
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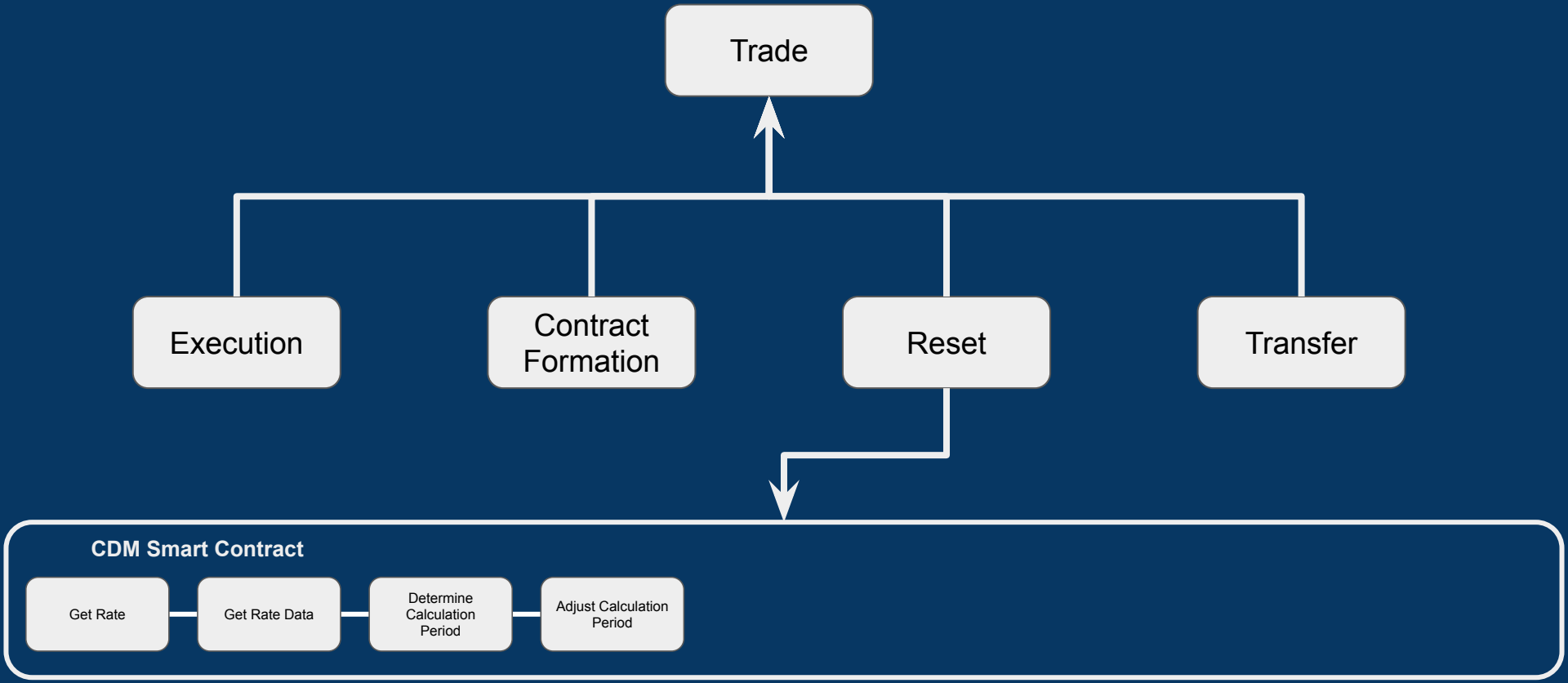
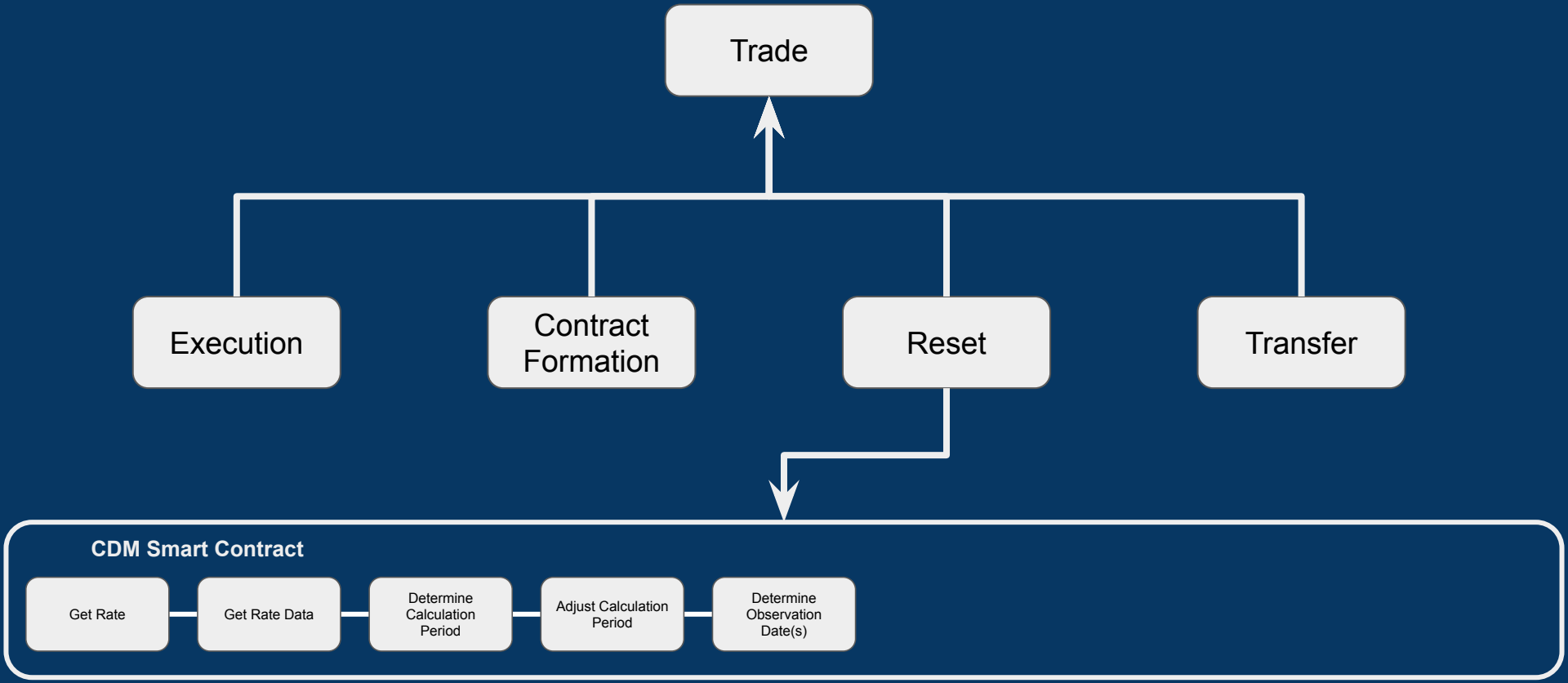
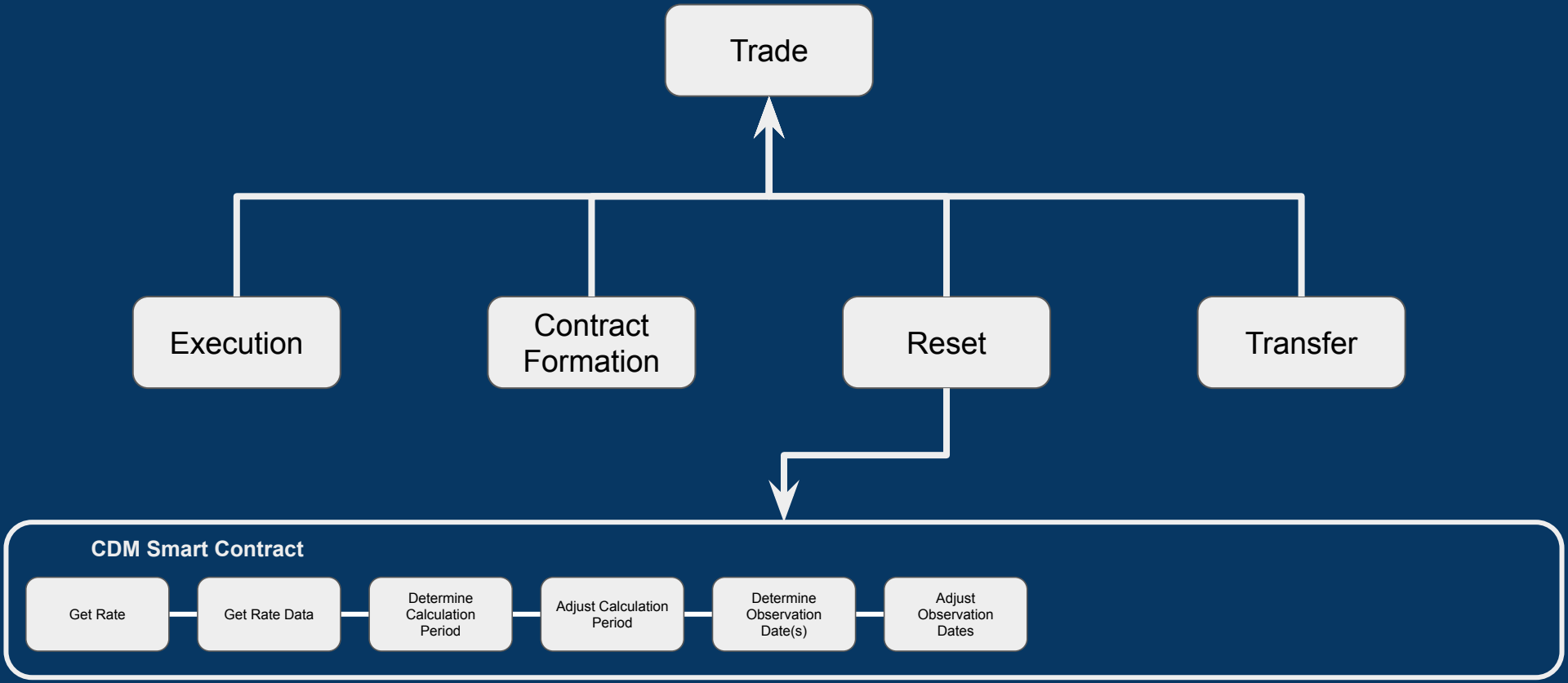
CDM Smart Contract
Get Rate
Get Rate Data
Determine Calculation Period


Trade
Execution
Contract Formation
Reset
Transfer
CDM Smart Contract
Get Rate
Get Rate Data
Determine Calculation Period
Adjust Calculation Period


Trade
Execution
Contract Formation
Reset
Transfer
CDM Smart Contract
Get Rate
Get Rate Data
Determine Calculation Period
Adjust Calculation Period
Determine Observation Date(s)


Trade
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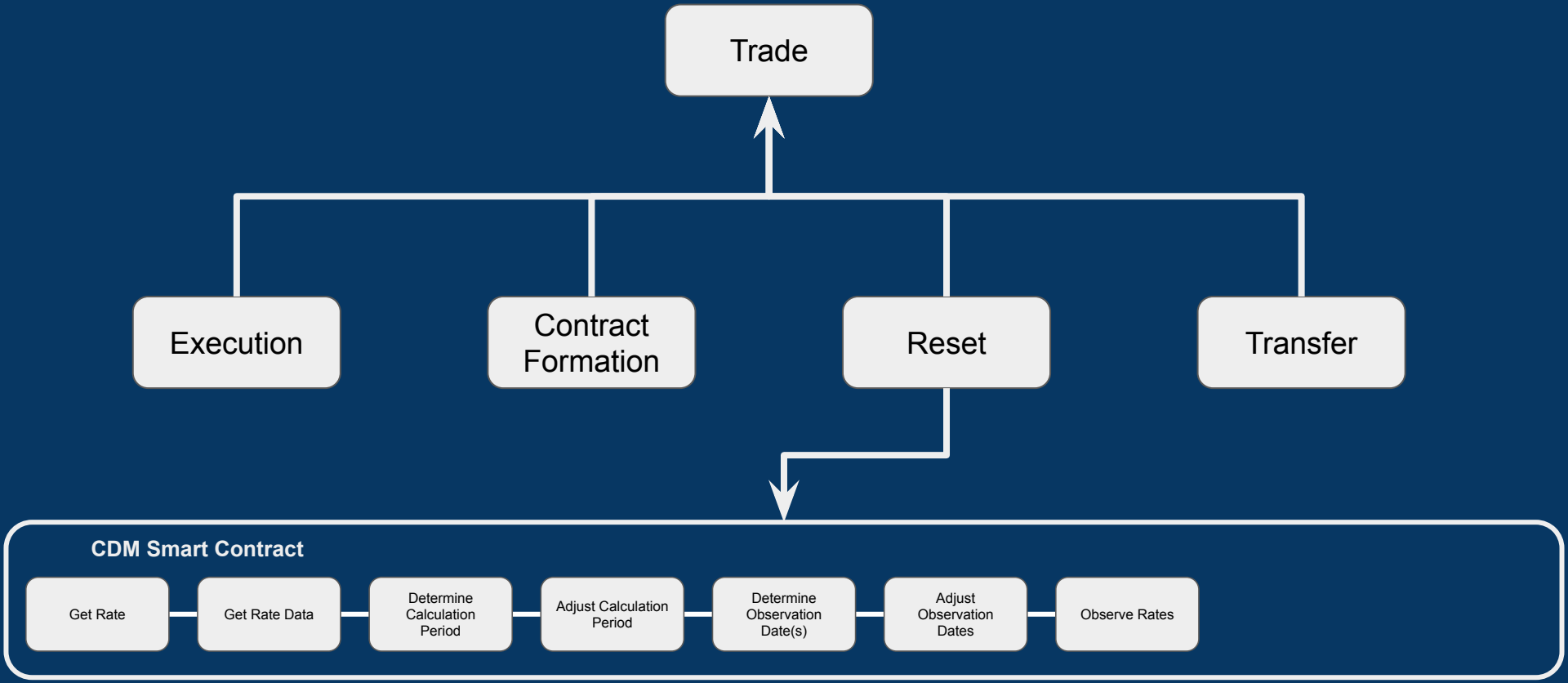
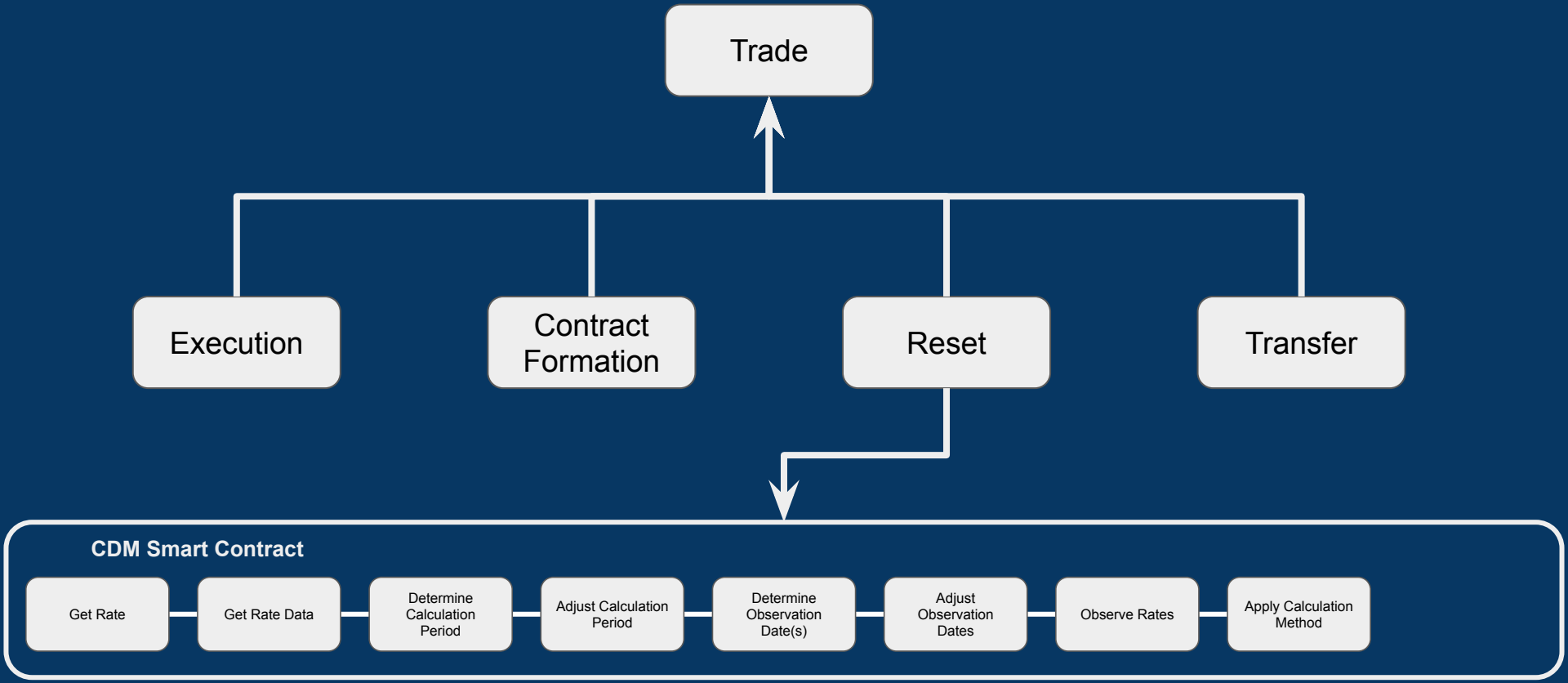
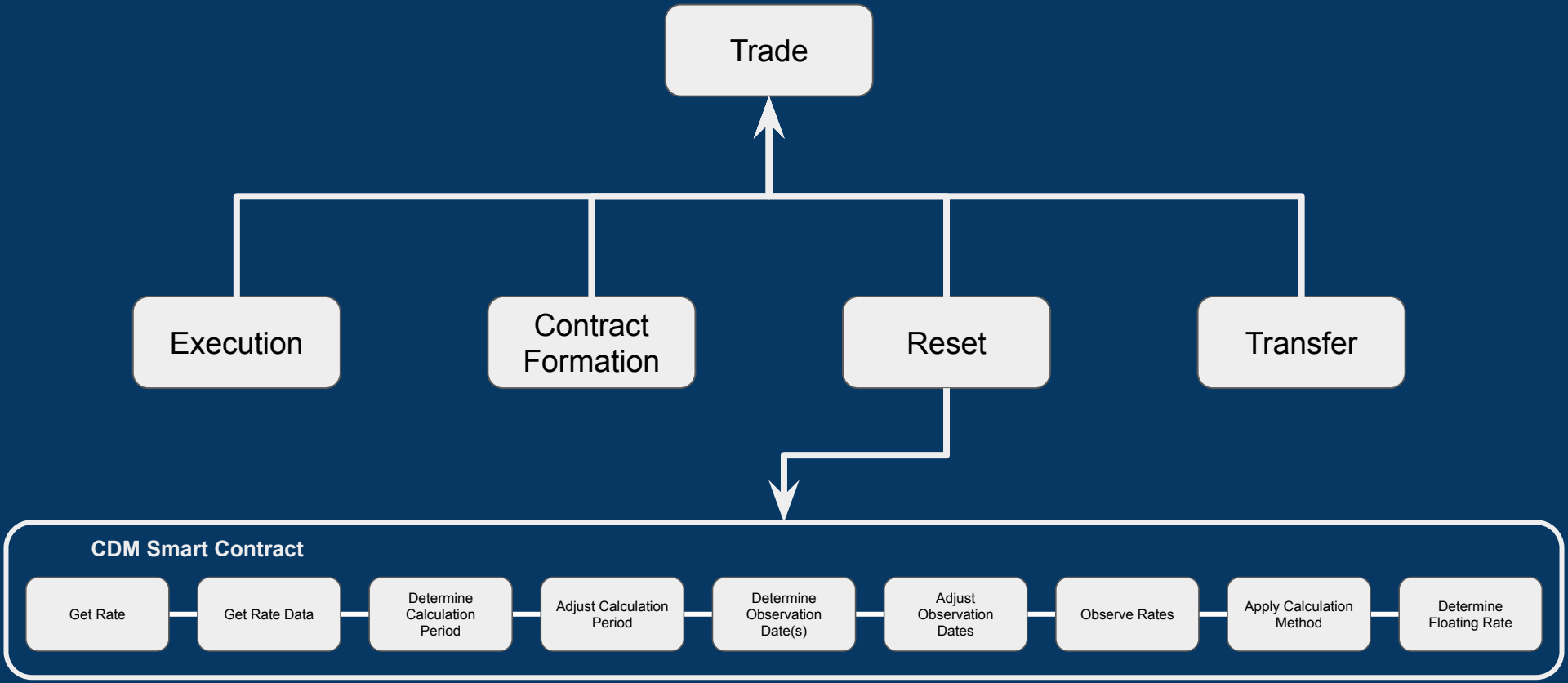
Contract Formation
Reset
Transfer
CDM Smart Contract
Get Rate
Get Rate Data
Determine Calculation Period
Adjust Calculation Period
Determine Observation Date(s)
Adjust Observation Dates


Trade
Execution
Contract Formation
Reset
Transfer
CDM Smart Contract
Get Rate
Get Rate Data
Determine Calculation Period
Adjust Calculation Period
Determine Observation Date(s)
Adjust Observation Dates
Observe Rates


Trade
Execution
Contract Formation
Reset
Transfer
CDM Smart Contract
Get Rate
Get Rate Data
Determine Calculation Period
Adjust Calculation Period
Determine Observation Date(s)
Adjust Observation Dates
Observe Rates
Apply Calculation Method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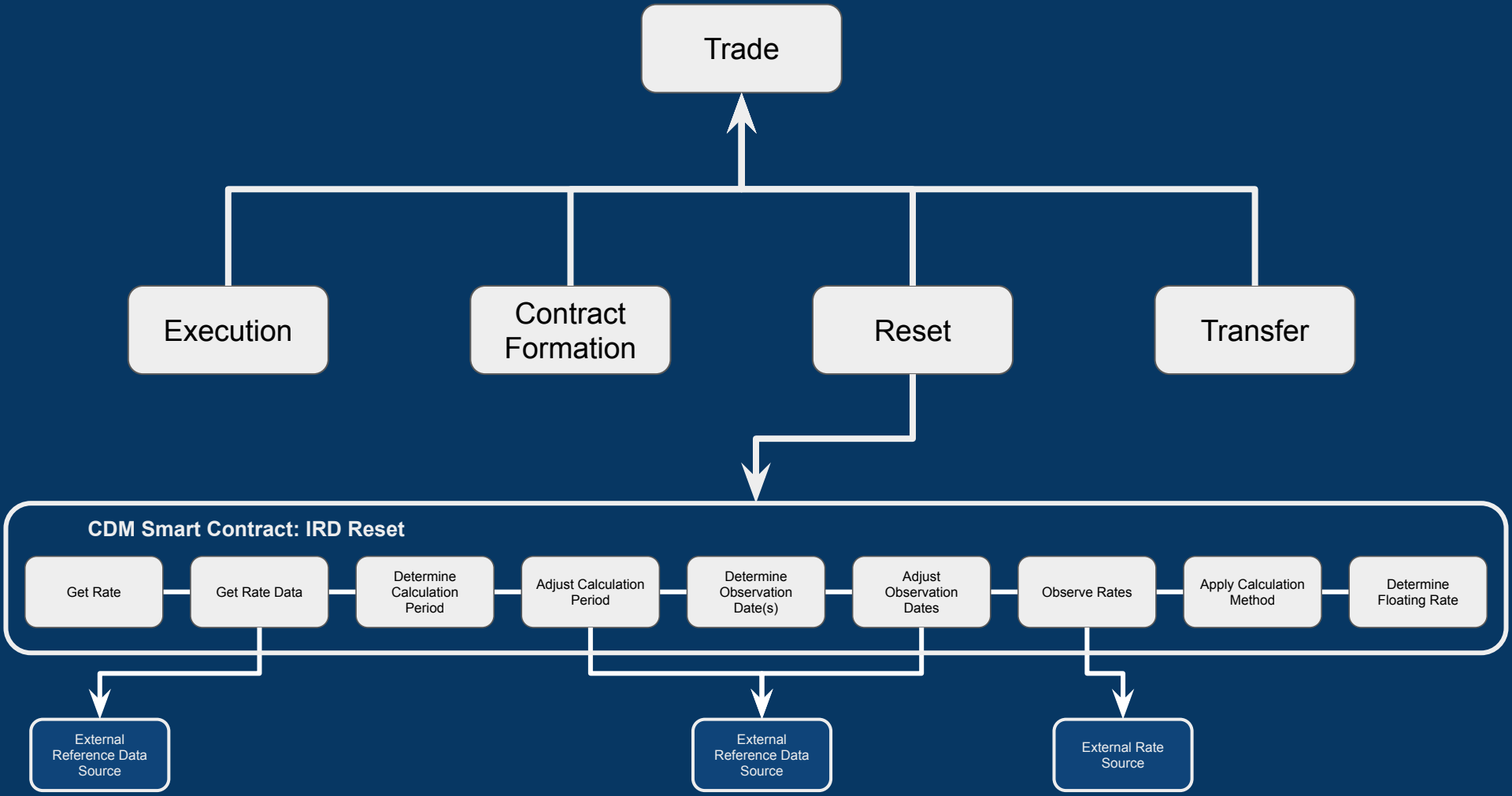
Transfer
CDM Smart Contract
Get Rate
Get Rate Data
Determine Calculation Period
Adjust Calculation Period
Determine Observation Date(s)
Adjust Observation Dates
Observe Rates
Apply Calculation Method
Determine Floating Rate


Trade
Execution
Contract Formation
Reset
Transfer
CDM Smart Contract: IRD Reset
Get Rate
Get Rate Data
Determine Calculation Period
Adjust Calculation Period
Determine Observation Date(s)
Adjust Observation Dates
Observe Rates
Apply Calculation Method
Determine Floating Rate
External Reference Data Source
External Reference Data Source
External Rate Source

Design Principles

1. **Atomic, reusable steps:** Each step performs one defined operation and is reusable across products and lifecycle events.
2. **Composable execution:** Products and conventions are created by sequencing steps rather than rewriting logic.
3. **Traceability:** All inputs and outputs are recorded for audit, fault detection and replay.