Common Domain Model (CDM) for repo and bonds: Substitution Workflow with Settlement and Transfer

CDM Collateral Management Working Group

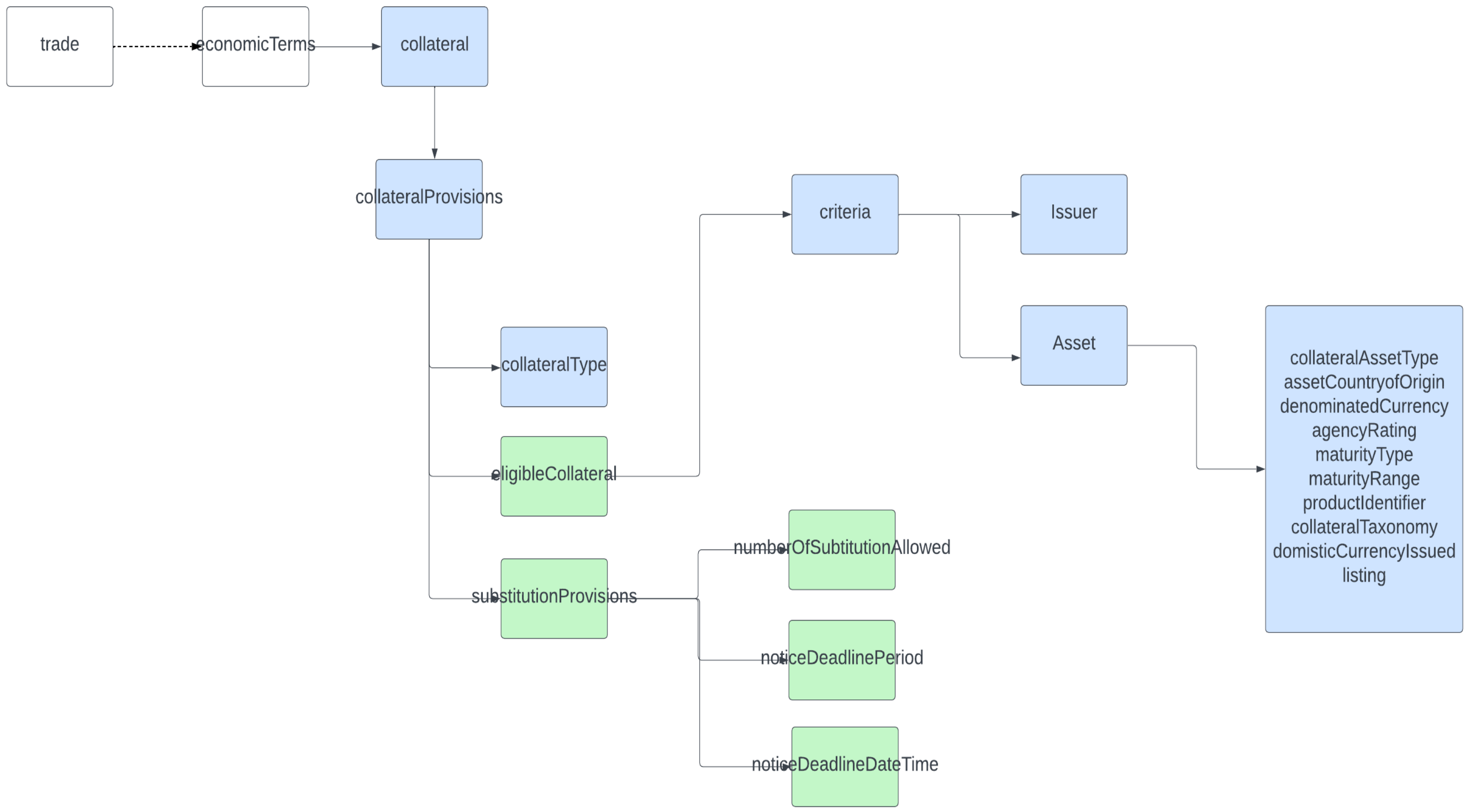
18 September 2024

ERCC proposal for best practices for pair-offs

- ERCC Operations Group best practices for substitutions:
    - *The total number of substitutions to be allowed.*
    - *The deadline for the Seller to give notice of substitution for earliest delivery.*
    - *The periods for the return of collateral and the delivery of the substitute.*
    - *Whether substitute collateral should have at least the same market value or nominal value as the collateral being substituted. In GMRA (8(a)), Market Value is prescribed.*
    - *To the extent possible, what are acceptable and/or unacceptable substitute securities.*
    - *Whether partial substitution will be allowed and whether there is a minimum size of substitution.*

CDM Substitution Provisions and Eligibility Checks

- ❑ Substitution provisions are components of the CDM model and include collateral eligibility checks.



CDM Substitution Instruction

ICMA International Capital Market Association

Substitution Instruction in Rosetta

```
func Create_SubstitutionInstruction: <"Creates the terms change
instruction that updates the payout with the new substitution payout.">
   inputs:
      contractualProduct ContractualProduct (1..1) <"The original
contractual product to be used as the basis of the new trade.">
      effectiveDate AdjustableOrRelativeDate (1..1) <"The effective date
of the substitution.">
      newCollateralPortfolio CollateralPortfolio (1..1) <"New collateral
portfolio to substitute for the original collateral.">
   output:
      termsChangeInstruction TermsChangeInstruction (1..1)

   set termsChangeInstruction:
      Create_EffectiveOrTerminationDateTermChangeInstruction(
            contractualProduct,
            effectiveDate,
            empty
         )

set termsChangeInstruction -> product -> contractualProduct ->
economicTerms -> collateral -> collateralPortfolio:
      newCollateralPortfolio
```

Substitution Instruction in Java

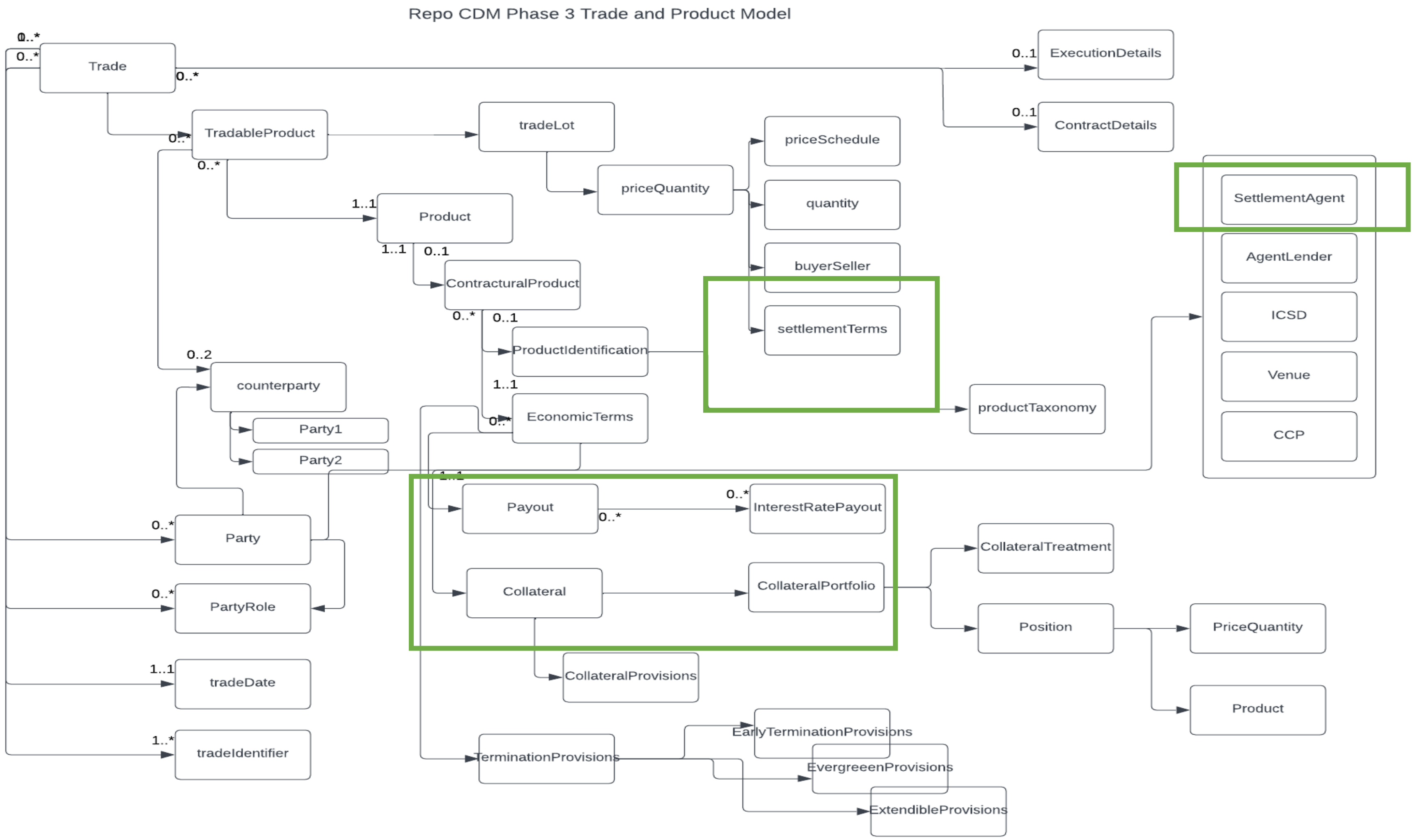
```
public static class Create_SubstitutionInstructionDefault extends Create_SubstitutionInstruction {
		@Override
		protected TermsChangeInstruction.TermsChangeInstructionBuilder
doEvaluate(ContractualProduct contractualProduct,
		AdjustableOrRelativeDate effectiveDate, CollateralPortfolio newCollateralPortfolio)
{
			TermsChangeInstruction.TermsChangeInstructionBuilder
termsChangeInstruction = TermsChangeInstruction.builder();
			return assignOutput(termsChangeInstruction, contractualProduct,
effectiveDate, newCollateralPortfolio);
		}
		protected TermsChangeInstruction.TermsChangeInstructionBuilder
assignOutput(TermsChangeInstruction.TermsChangeInstructionBuilder termsChangeInstruction,
ContractualProduct contractualProduct, AdjustableOrRelativeDate effectiveDate,
CollateralPortfolio newCollateralPortfolio) {
		termsChangeInstruction =
toBuilder(create_EffectiveOrTerminationDateTermChangeInstruction.evaluate(contractualProduct,
effectiveDate, null));

termsChangeInstruction
		.getOrCreateProduct()
		.getOrCreateContractualProduct()
		.getOrCreateEconomicTerms()
		.getOrCreateCollateral()
		.setCollateralPortfolioValue((newCollateralPortfolio == null ?
Collections.<CollateralPortfolio>emptyList() : Collections.singletonList(newCollateralPortfolio)));
return Optional.ofNullable(termsChangeInstruction)
		.map(o -> o.prune())
		.orElse(null);}
}
```

CDM Repo Settlement and Transfers

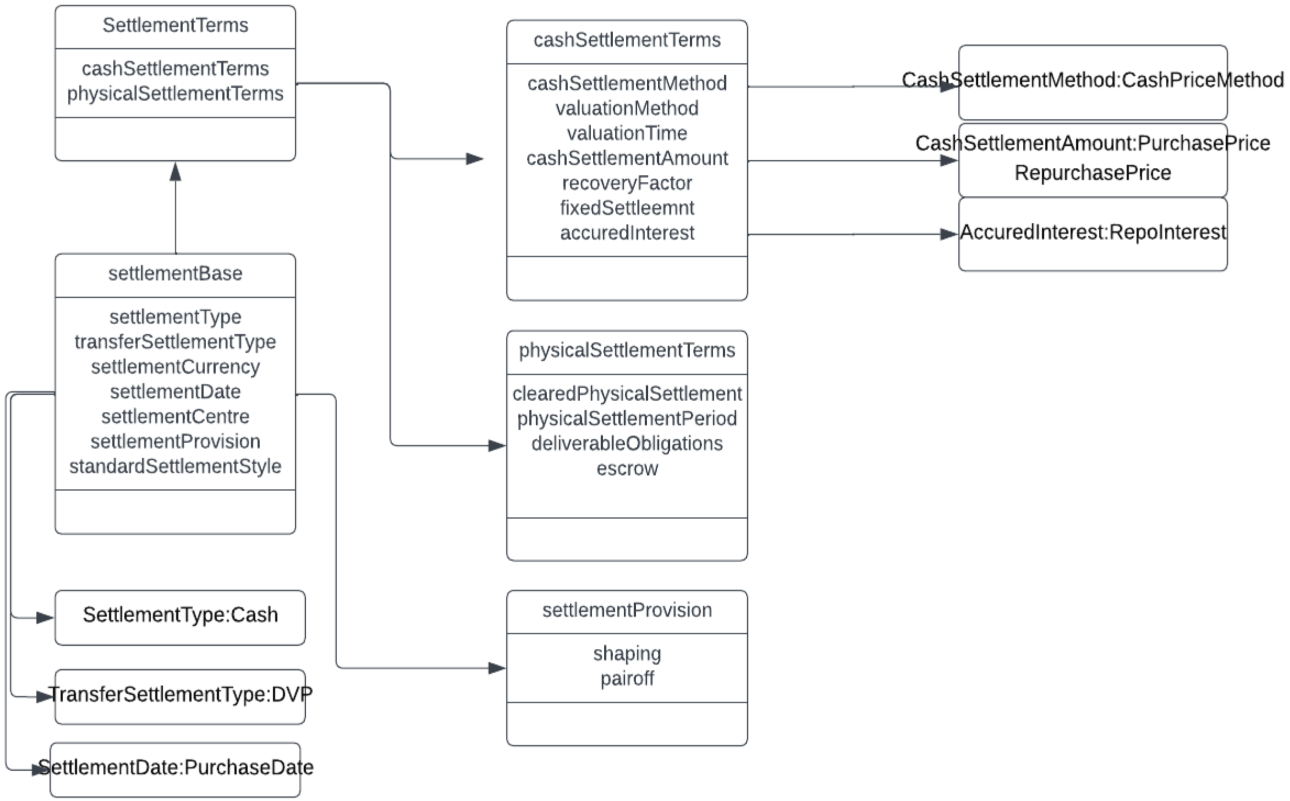
- CDM Settlement Model
  - CDM settlement type defines the type of settlement (cash, securities or other physical asset)
  - Settlement Instructions
  - Settlement Center
  - Settlement Provisions (Shaping, Pairoff)
- CDM Transfers Events
  - Supported through a workflow event, business event and CDM primitive transfer instruction
  - A CDM transfer instruction defines the state and details of a transfer of cash and securities
  - Transfer details include the reference settlement source, parties, date and amount.

CDM Repo Model with Settlement Terms



CDM Repo Settlement Terms

SettlementTerms Model



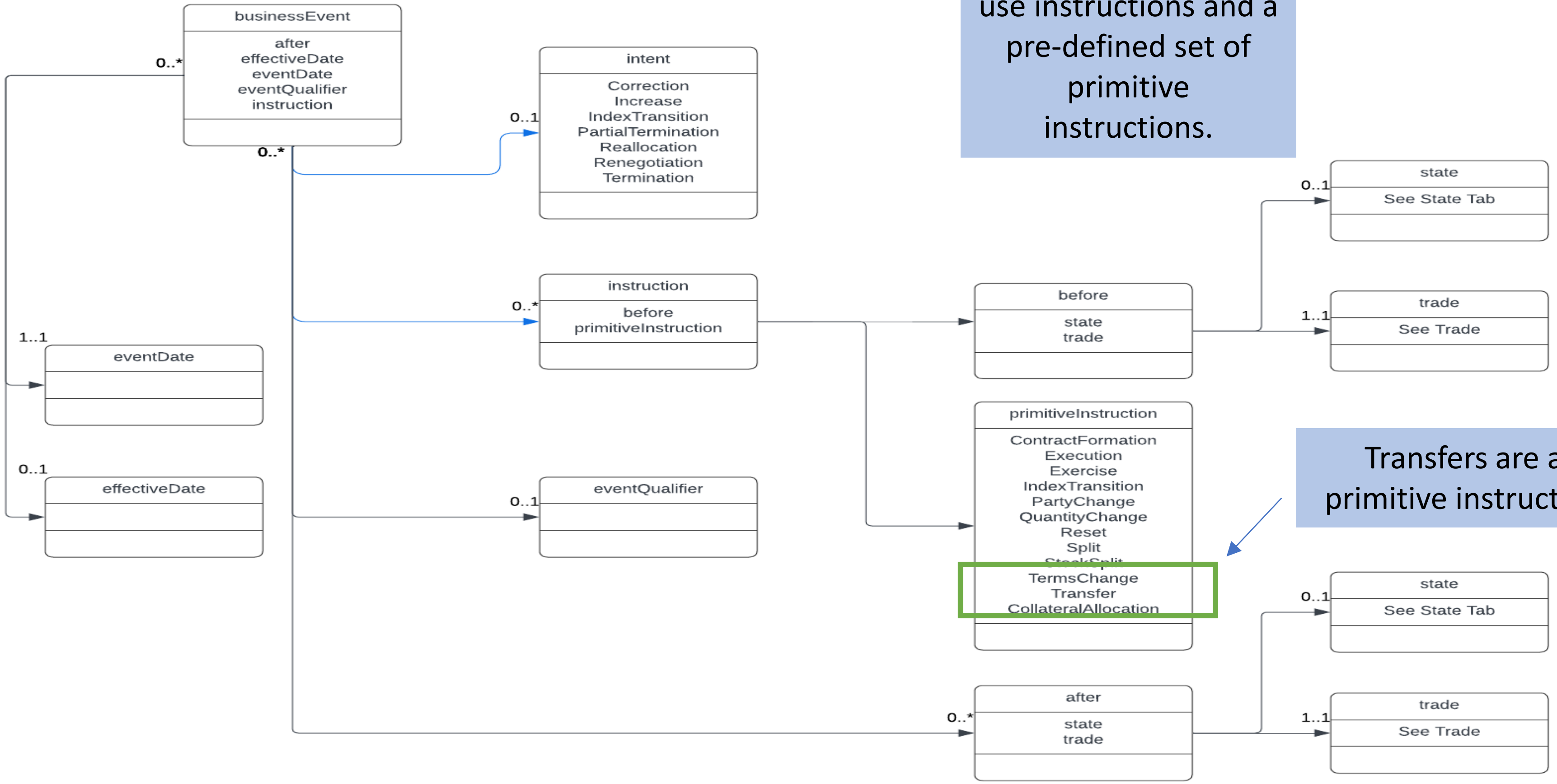
CDM Json Representation


```
"settlementTerms": {
    "settlementCurrency": {
        "meta": {},
        "value": "GBP"
    },
    "settlementDate": {
        "adjustableOrRelativeDate": {
            "dateAdjustments": {
                "businessDayConvention": "NONE"
            },
            "unadjustedDate": "2024-06-24"
        }
    },
    "settlementType": "CASH",
    "transferSettlementType": "DELIVERY_VERSUS_PAYMENT",
    "cashSettlementTerms": [
        {
            "cashSettlementMethod": "CASH_PRICE_METHOD"
        }
    ]
},
```

CDM Business Event Processing

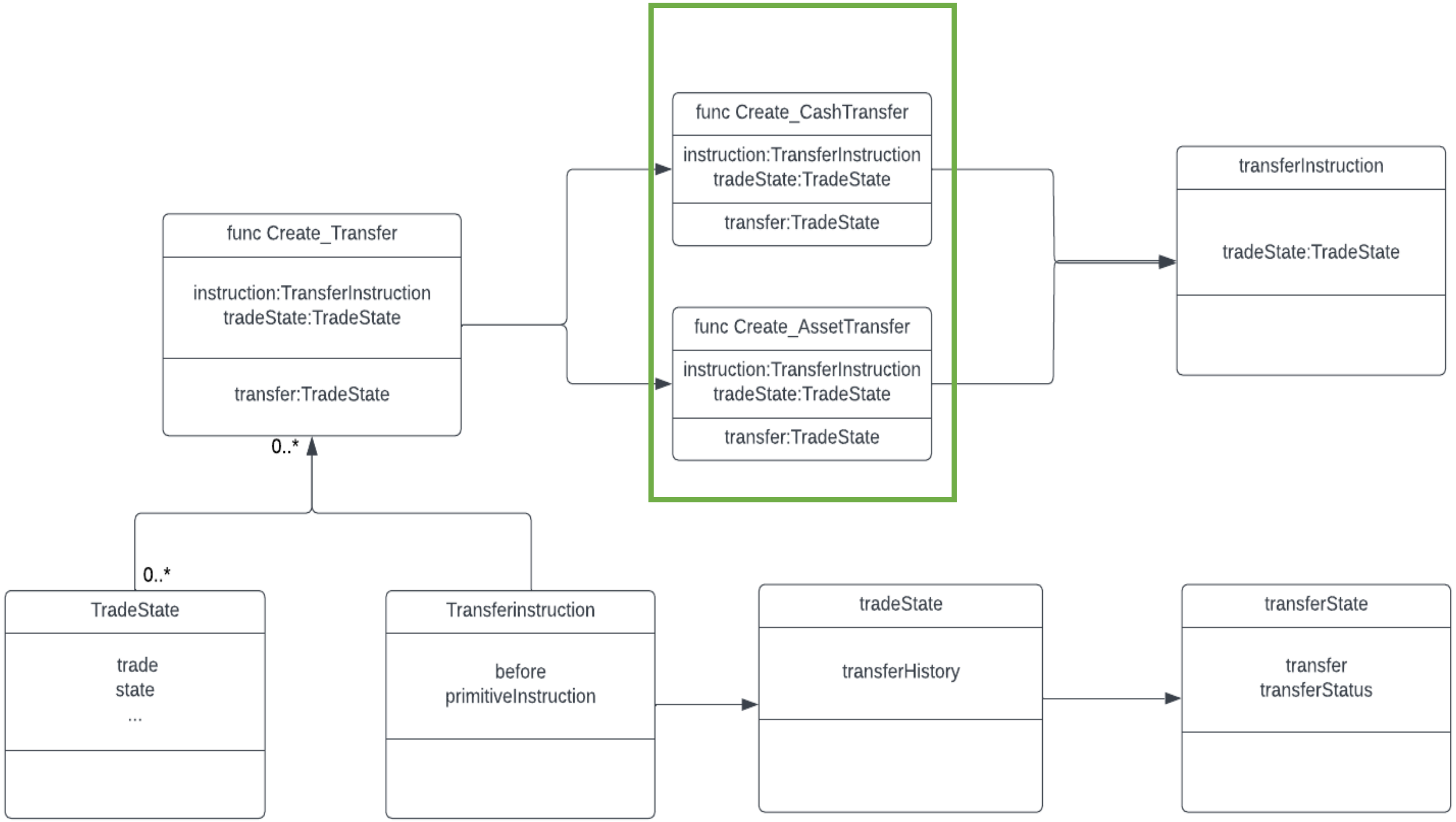
CDM business events result in a new state and lineage linking after states to before states.

CDM business events use instructions and a pre-defined set of primitive instructions.



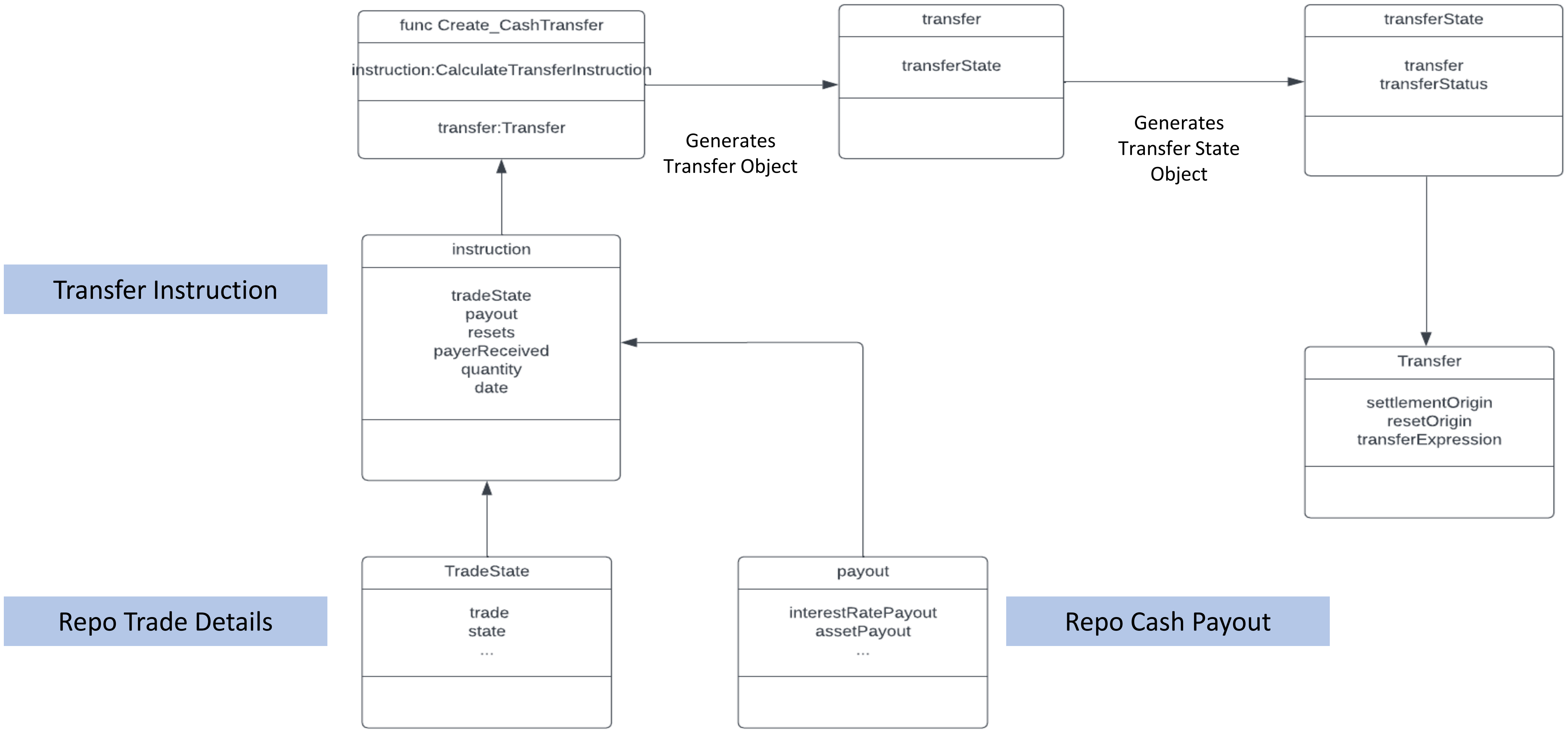
Transfers are a primitive instruction

CDM Transfer Functions for Cash and Assets

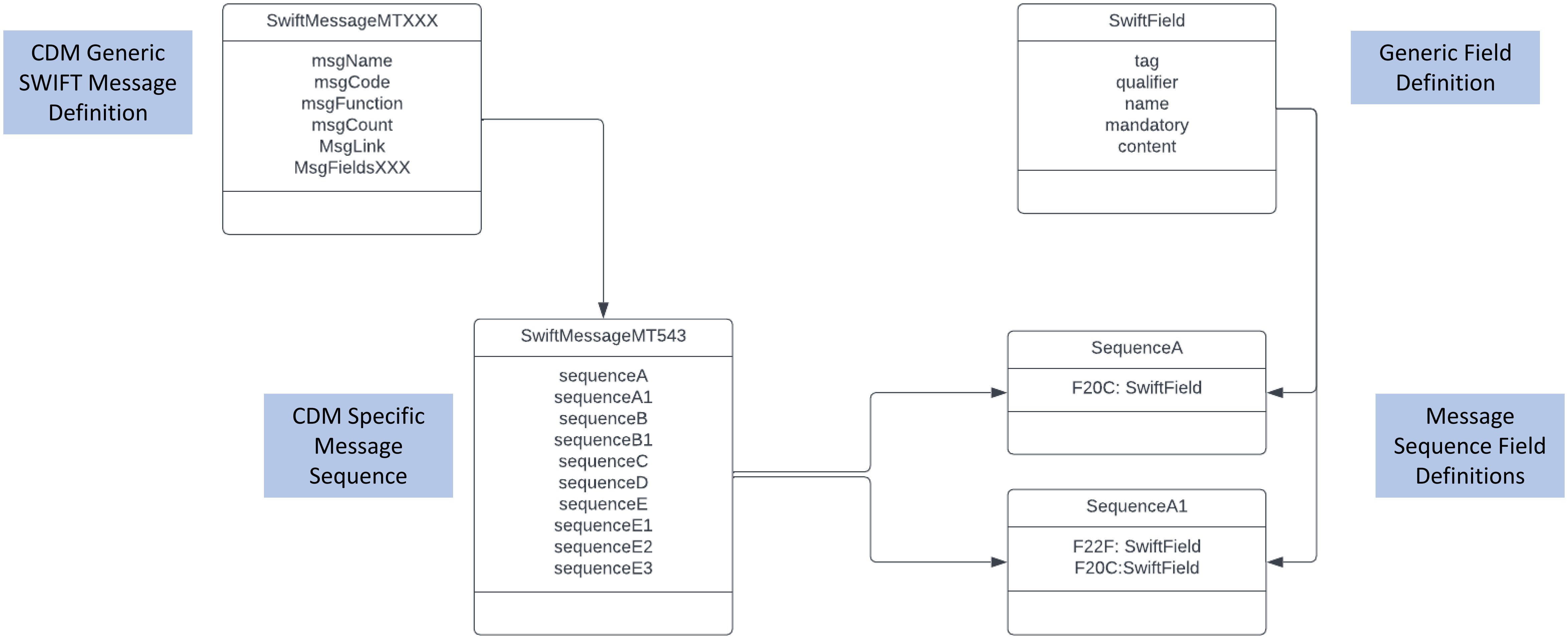


Produces a transfer that is used to execute a transfer business event.

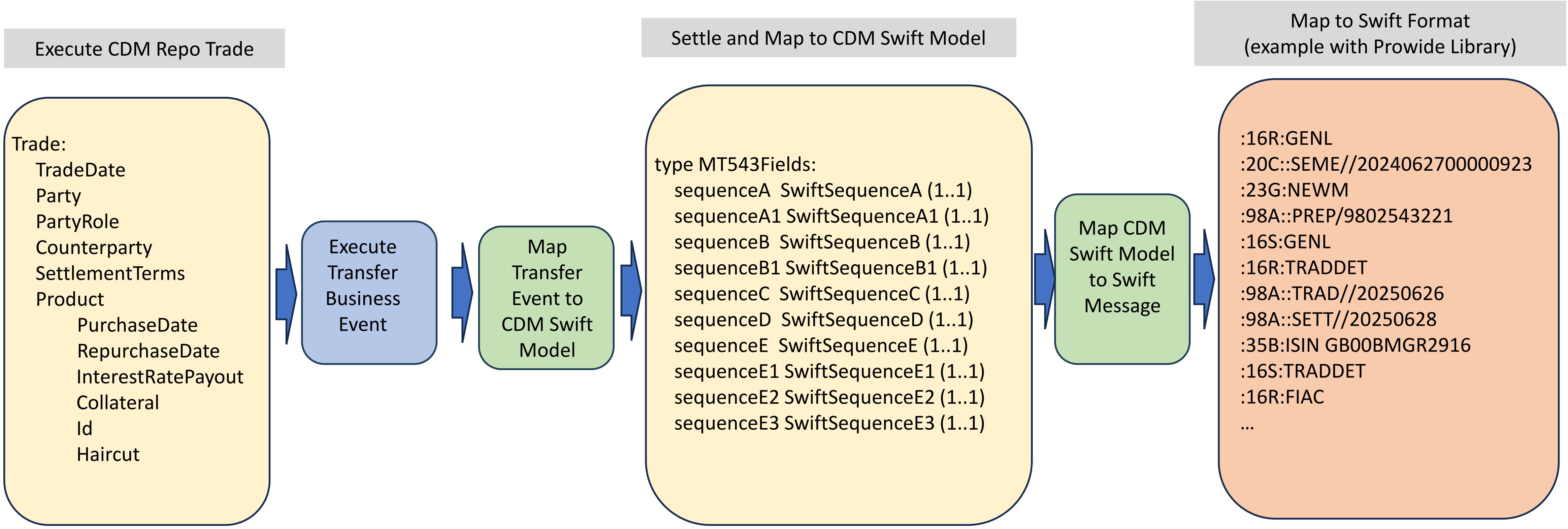
CDM Create_CashTransfer (Predefined CDM Function)



CDM SWIFT Model



CDM to SWIFT Format



FINOS Resources-Getting Started

- CDM Home Page: https://cdm.finos.org/docs/home
- GitHub Repository, https://github.com/finos/common-domain-model
    - git clone -b "5.13.0" https://github.com/finos/common-domain-model (latest production release)
    - git clone -b “6.0.0-dev.52" https://github.com/finos/common-domain-model (latest development release)
- Open Issues:
    - See https://github.com/finos/common-domain-model/issues
    - Submit questions and proposals for group comment
- CDM Core Examples: https://github.com/finos/common-domain-model/tree/master/examples
- Training Example: https://github.com/tomhealey-icma/cdm-training-app
- Repo Example: https://github.com/tomhealey-icma/cdm-repo-demo-app
- Basket Builder: https://github.com/tomhealey-icma/cdm-gc-basket-builder

Contacts & Resources

ICMA contacts:

Gabriel Callsen, Senior Director

gabriel.callsen@icmagroup.org

+44 (0)20 7213 0334

Tom Healey, Consultant

tom.healey@icmagroup.org

Useful links:

FINOS CDM GitHub repository

FinTech Overview

ICMA's CDM webpage

ICMA CDM Demo – Automating repo transactions (April 2023)

Bond Data Taxonomy

DLT Bonds Working Group

FinTech newsletter

Podcasts