

OpenMI



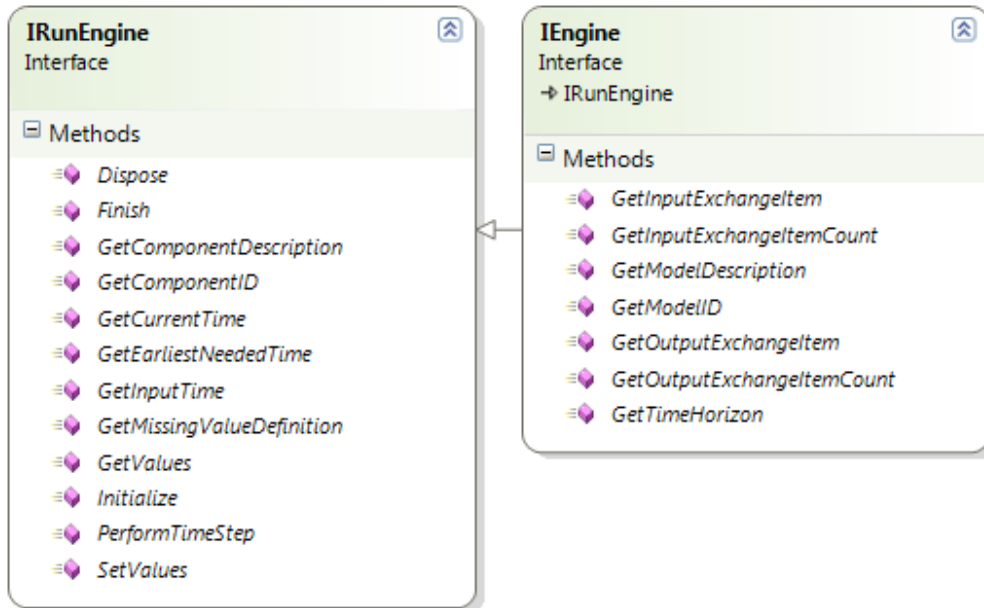
Migration from 1.4 to 2.0

Wrapping a 1.4 IEngine in 2.0

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Migrating an IEngine

1.4 IEngine



1.4:

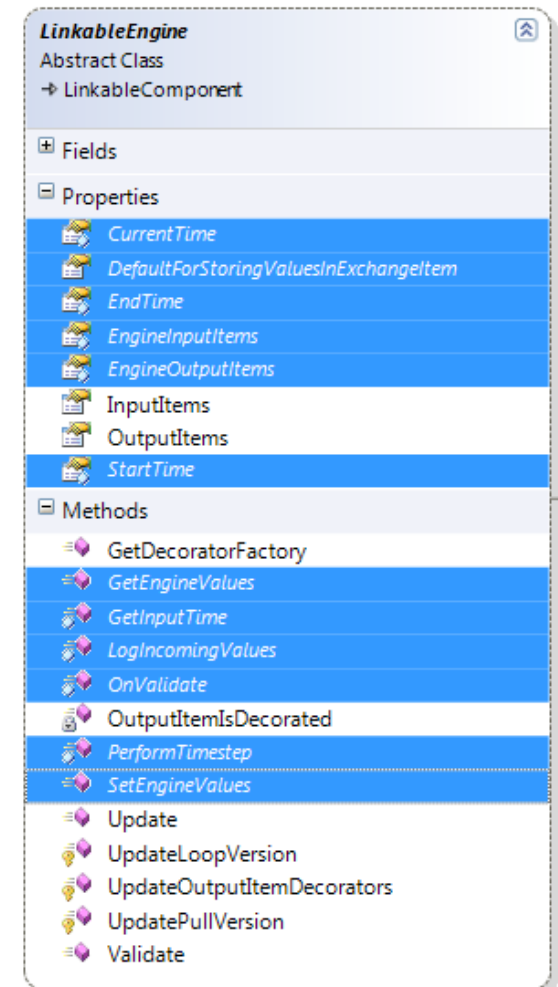
```
GetValues(string QuantityID, string ElementSetID);
```

2.0:

```
GetEngineValues(EngineExchangeItem exchangeItem);
```

ExchangeItem contains QuantityID and ElementSetID. Can contain a deep pointer into the engine.

2.0 LinkableEngine



2.0 RiverModelLC

RiverModelLC
Class
→ LinkableEngine

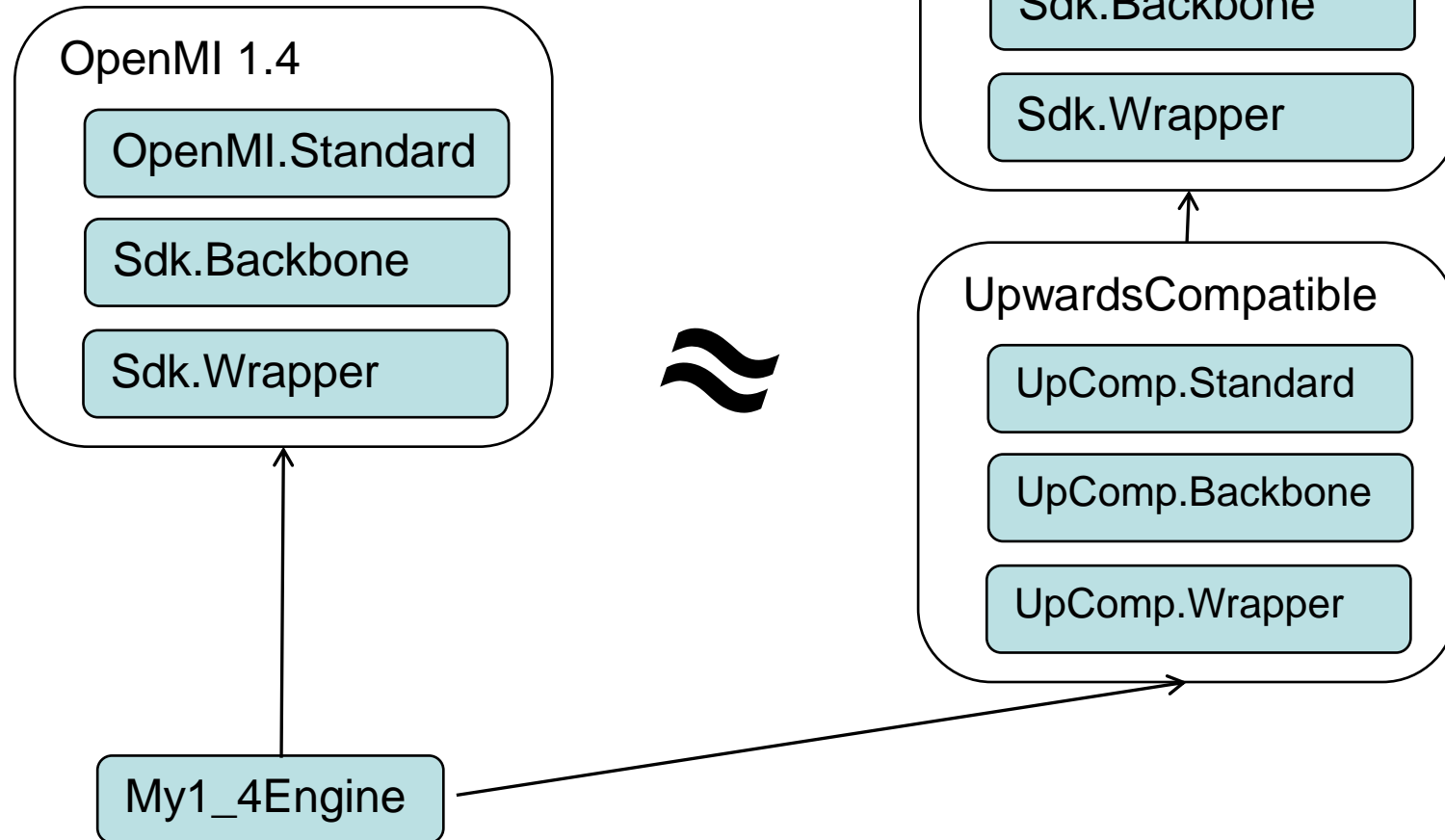
- Fields
- Properties
 - CurrentTime
 - DefaultForStoringValuesInExchangeItem
 - EndTime
 - EngineInputItems
 - EngineOutputItems
 - Leakage
 - StartTime
- Methods
 - Finish
 - GetEngineValues
 - GetInputTime
 - GetOutputValuesFromComputationalCore
 - Initialize
 - LogIncomingValues
 - OnValidate
 - PerformTimestep
 - RiverModelLC
 - SetEngineValues
 - StoreInputValuesInComputationalCore

1.4 RiverModelEngine

RiverModelEngine
Class

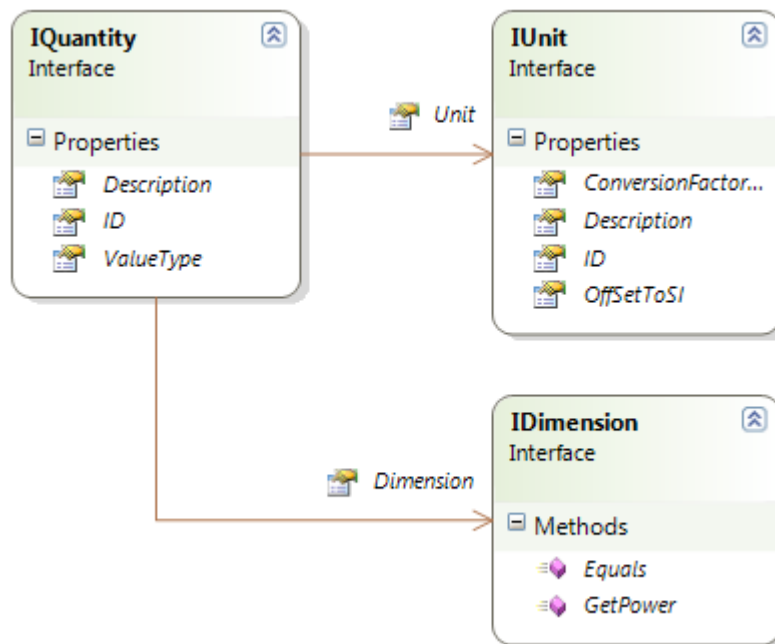
- Fields
- Methods
 - ClearState (+ 1 overload)
 - Dispose
 - Finish
 - GetComponentDescription
 - GetComponentID
 - GetCurrentTime
 - GetEarliestNeededTime
 - GetInputExchangeItem
 - GetInputExchangeItemCount
 - GetInputTime
 - GetMissingValueDefinition
 - GetModelDescription
 - GetModelID
 - GetOutputExchangeItem
 - GetOutputExchangeItemCount
 - GetTimeHorizon
 - GetValues
 - Initialize
 - KeepCurrentState
 - KeepCurrentStateStr
 - PerformTimeStep
 - RestoreState (+ 1 overload)
 - RiverModelEngine
 - SetValues
- Nested Types

UpwardsCompatible
wrapper containing
IEngine interface alike in 1.4

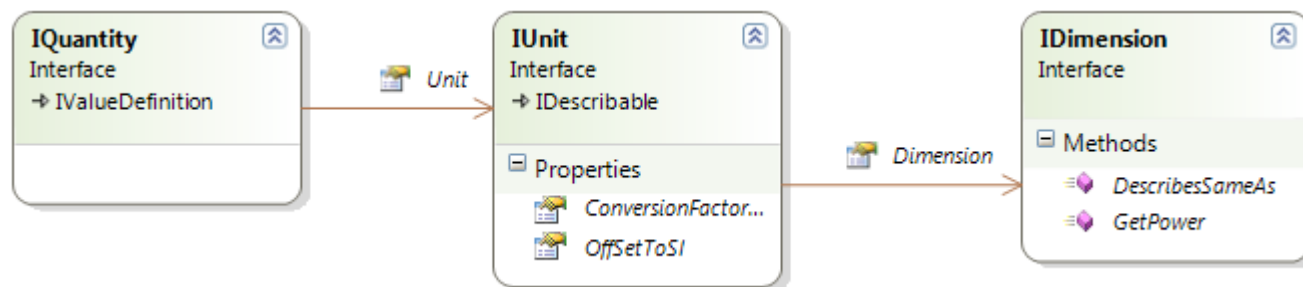


Worse code change when using the upwards compatible wrapper

1.4 quantity



2.0 quantity



Quantity – 1.4 vs. 2.0

1.4

```
Dimension flowDimension = new Dimension();  
Unit literPrSecUnit = new Unit("LiterPrSecond",0.001,0,"Liters pr Second")  
Quantity flowQuantity = new Quantity(literPrSecUnit, "Flow", "Flow",  
    global::OpenMI.Standard.ValueType.Scalar, flowDimension);
```

2.0

```
Dimension flowDimension = new Dimension();  
Unit literPrSecUnit = new Unit("LiterPrSecond", 0.001, 0, "Liters pr Second");  
literPrSecUnit.Dimension = flowDimension;  
Quantity flowQuantity = new Quantity(literPrSecUnit, "Flow", "Flow");  
flowQuantity.ValueType = typeof(double);
```

Tricky part: References for the upwards compatible wrapper

1.4

```
using OpenMI . Standard ;  
using Oatc . OpenMI . Sdk . Backbone ;  
using Oatc . OpenMI . Sdk . Wrapper ;
```

2.0

```
using OpenMI . Standard ;  
using Oatc . OpenMI . Sdk . Backbone ;  
using Oatc . UpwardsComp . Standard ;  
using Oatc . UpwardsComp . Backbone ;  
using Oatc . UpwardsComp . EngineWrapper ;  
using ITime = Oatc . UpwardsComp . Standard . ITime ;
```

Changes in Time

1.4 `TimeStamp startTime = new
TimeStamp(Oatc.OpenMI.Sdk.DevelopmentSupport.CalendarConv
erter.Gregorian2ModifiedJulian(_simulationStart));`

2.0 `TimeStamp startTime = new
TimeStamp(Time.ToModifiedJulianDay(_simulationStart));`