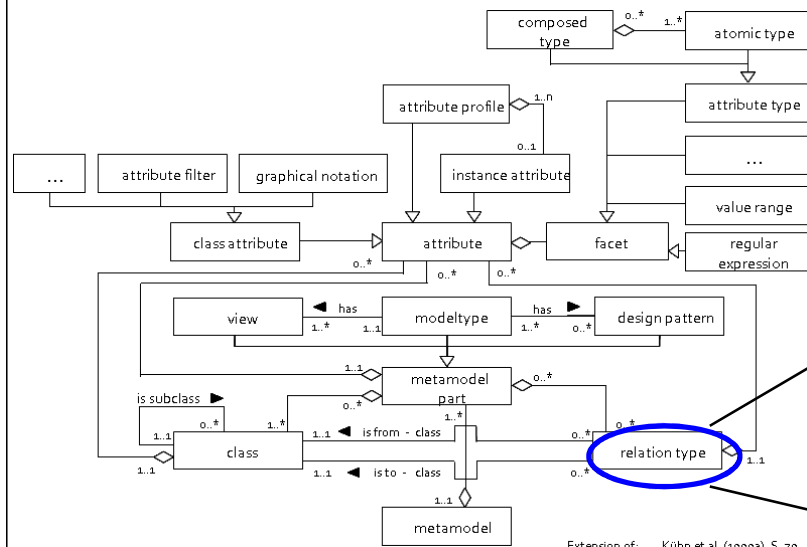


Extension of: Kühn et al. (1999a), S. 79

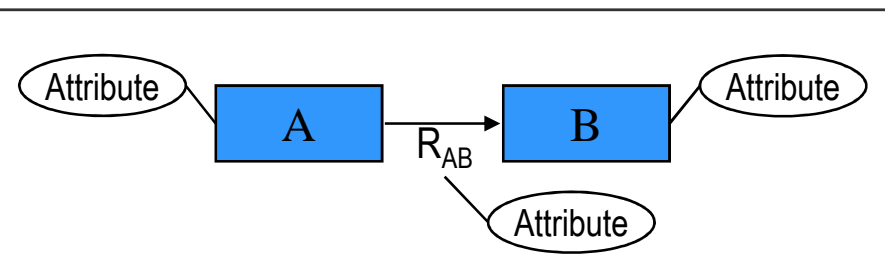
# 1. CLASSES and RELATIONS

# Definition: Relation



Extension of: Kühn et al. (1999a), S. 79

Relationship between objects are defined as relationtypes between classes. Relations are defined by their source and target class, their cardinality, and their attributes.



## Source and Target Class:

Any class – Pre-defined abstract class, abstract class or class – can act as source class defining where the relation starts from, as well as target class defining where the relations ends.

## Cardinality:

Cardinality like 1:1, 1:n and n:m relationship is defined in the cardinality of the relation.

## Attributes:

Attributes are descriptive properties of relations and handled like attribute for classes.



# Relation Types

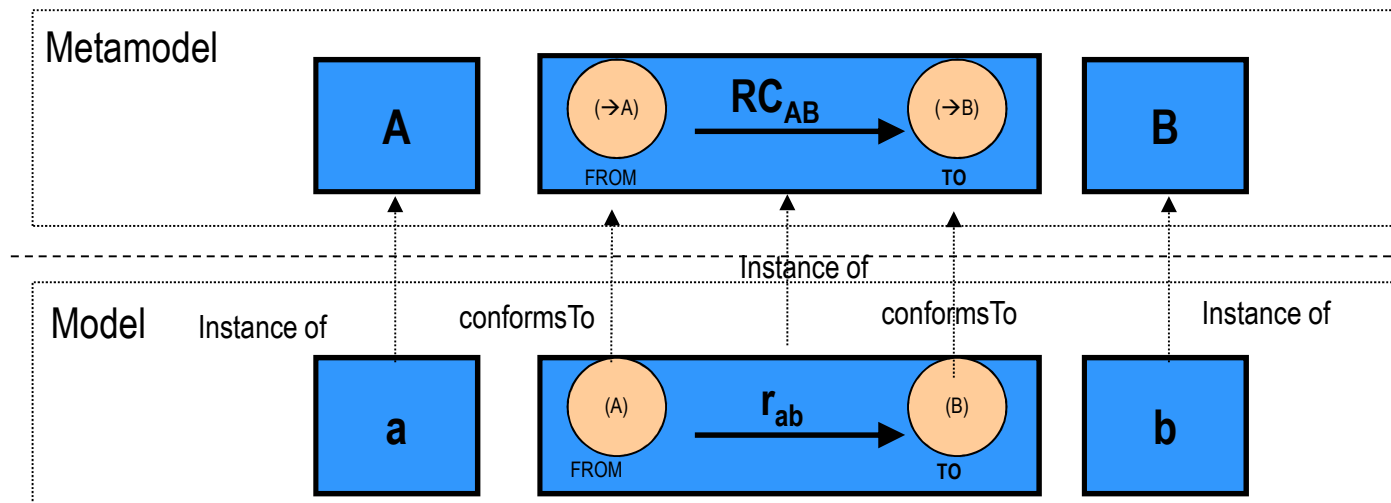
Relations in ADOxx are expressed either as a class “Relation Class” or as a pointer in form of an attribute called “InterRef”.

## Relation as Class “RC”

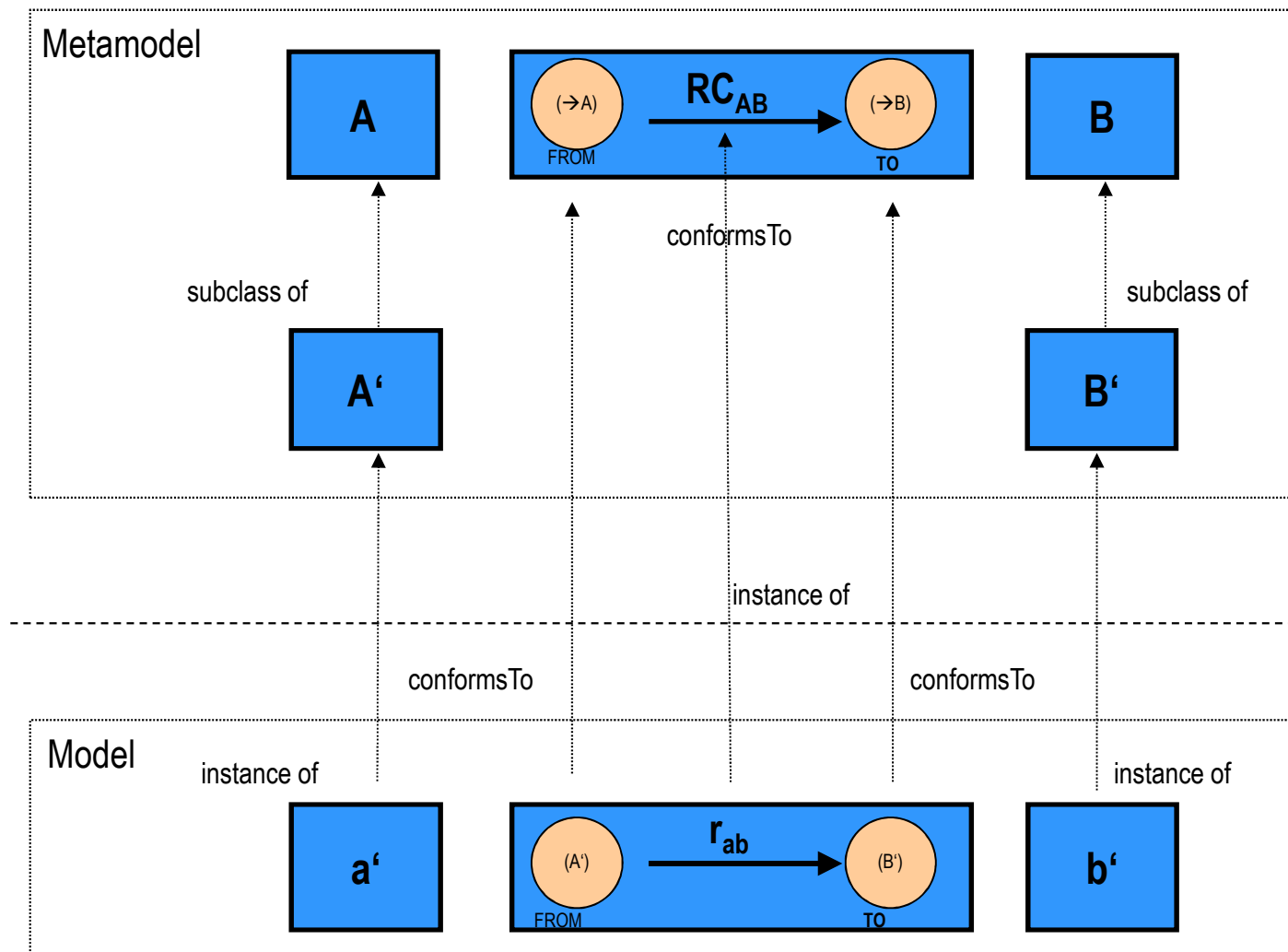
- describes relationship between two objects from two or more classes within one model.
- has start and endpoints define which (abstract) classes a relation can connect
- Cardinality and attribute defined the semantic of the relations class

## Relation as Attribute “InterRef”

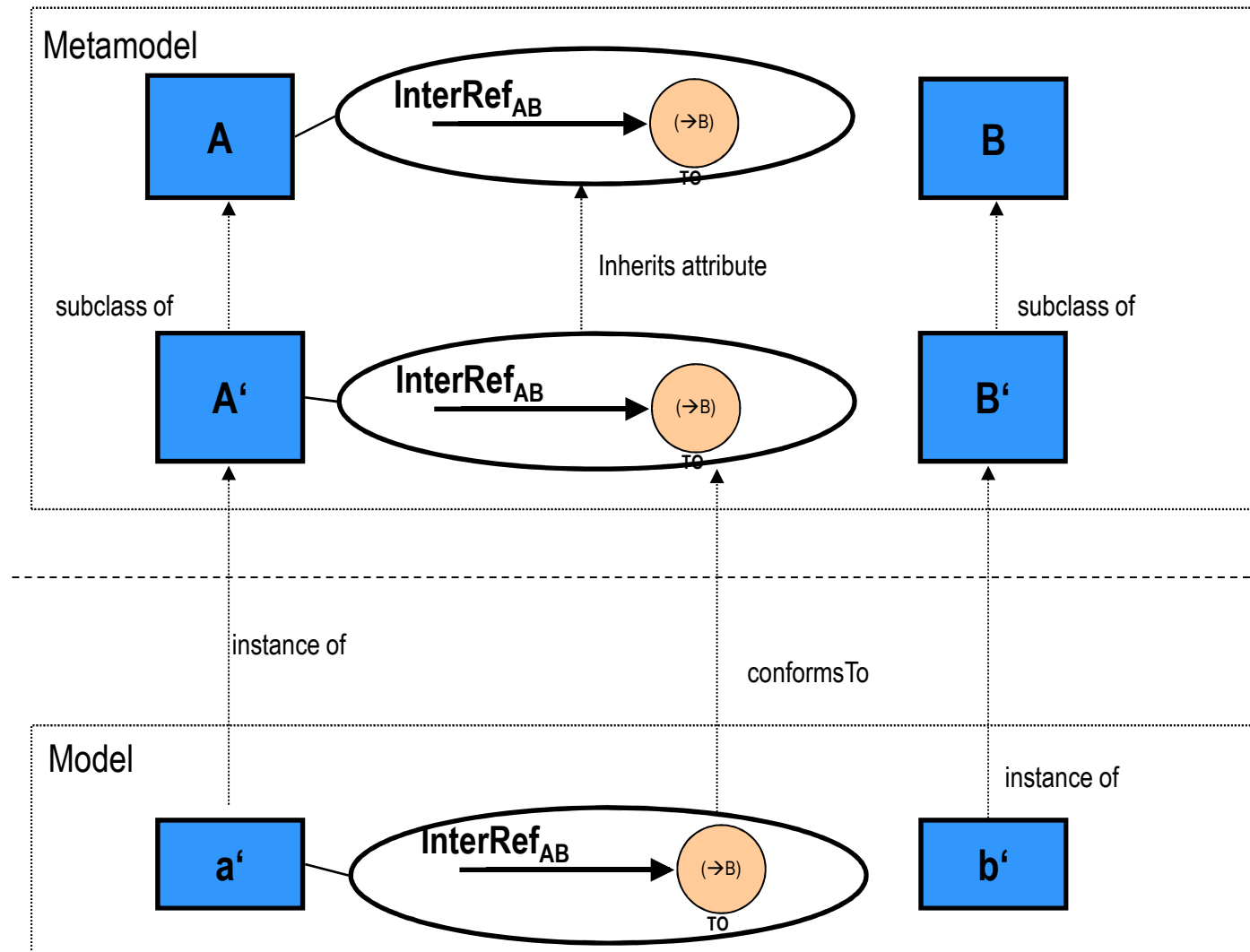
- Is a special configuration of a Relation Class and describes the relationship between two objects from two or more classes within or across models.
- Is a pointer represented as an attributed in the class the relation starts from, with defined classes the relation can point to.
- Cardinality defines the semantic of the InterRef



# Relation Types: Inheritance of Relation Class



# Relation Types: Inheritance of InterRef



# Realisation of Meta Model



## Specification of a meta model in ALL

1. Specify the meta model starting from the „Empty Meta Model“ and add relation classes and interrefs to classes etc. with ALL using a text editor.
2. Translate ALL into the ADOxx interpretable ABL format and import the meta model into ADOxx.

<i>relationclass :</i>	<i>relationclass-definition { instanceattribute }   redefrelationclass-definition { redefinstanceattribute } .</i>
<i>relationclass-definition :</i>	<b>RELATIONCLASS</b> <i>identifier</i> <b>FROM</b> <i>identifier</i> <b>TO</b> <i>identifier</i> .
<i>instanceattribute-definition :</i>	<b>ATTRIBUTE</b> <i>identifier</i> <b>TYPE</b> <i>typeidentifier</i>   <b>ATTRIBUTE</b> <i>identifier</i> <b>TYPE</b> <i>typeidentifier</i> <b>VALUE</b> <i>val</i>   <b>ATTRIBUTE</b> <i>identifier</i> <b>VALUE</b> <i>val</i>   <b>ATTRIBUTE</b> <i>identifier</i> <b>TYPE</b> <b>RECORD</b> .
<i>instanceattribute-setting :</i>	<b>ATTRIBUTE</b> <i>identifier</i> <b>VALUE</b> <i>val</i> .
<i>typeidentifier :</i>	<b>INTEGER</b>   ... <b>INTERREF</b>