9 SACM Argumentation Metamodel

9.1 Argumentation Class Diagram

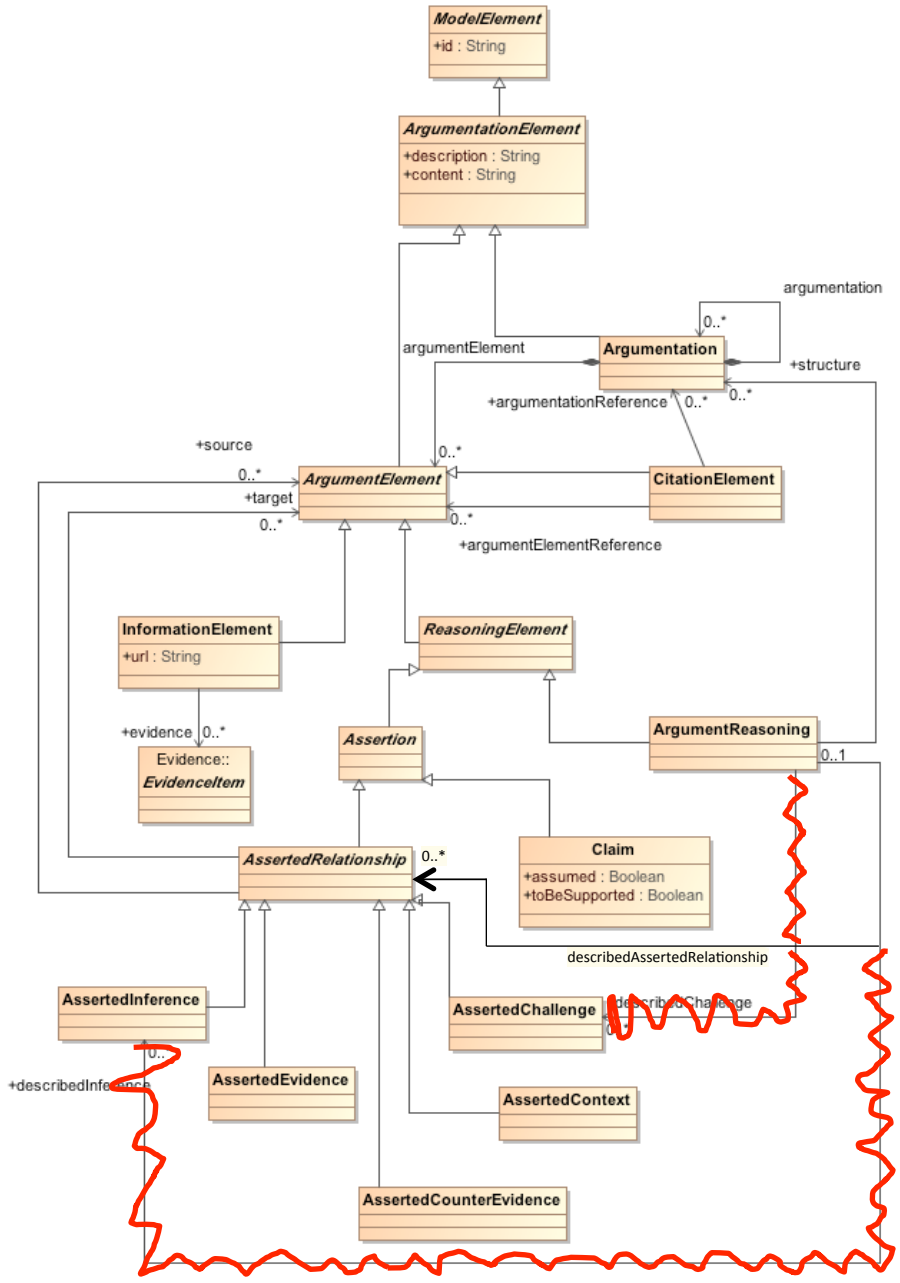

Figure 9.1 - Argumentation Class Diagram

In the following sub clauses we describe the model elements.

- describedAssertedRelationship:AssertedRelationship[0..*]
  Reference to the AssertedRelationship being described by the ArgumentReasoning.

Superclass

ReasoningElement

Associations

- describedInference:AssertedInference[0..*]
  Reference to the AssertedInference being described by the ArgumentReasoning.
- describedChallenge:AssertedChallenge[0..*]
  Reference to the AssertedChallenge being described by the ArgumentReasoning.
- structure:Argument[0..1]
  Optional reference to another structured Argument to provide the detailed structure of the Argument being described by the ArgumentReasoning.

Semantics

The argument step that relates one or more Claims (premises) to another Claim (conclusion) may not always be obvious. In such cases ArgumentReasoning can be used to provide further description of the reasoning steps involved.

Example

<containsArgumentElement xsi:type="ARM:ArgumentReasoning" xmi:id="2" identifier="RC1.1" content="Argument by omission of all identified software hazards" describes="5 6"/>

9.1.11 AssertedRelationship Class (Abstract)

The AssertedRelationship Class is the abstract association class that enables the ArgumentElements of any structured argument to be linked together. The linking together of ArgumentElements allows a user to declare the relationship that they assert to hold between these elements.

Superclass

Assertion

Associations

- source:ArgumentElement[0..*]
  Reference to the ArgumentElement(s) that are the source (start-point) of the relationship.
- target:ArgumentElement[0..*]
  Reference to the ArgumentElement(s) that are the target (end-point) of the relationship.

Semantics

In the SACM, the structure of an argument is declared through the linking together of primitive ArgumentElements. For example, a sufficient inference can be asserted to exist between two claims (“Claim A implies Claim B”) or sufficient evidence can be asserted to exist to support a claim (“Claim A is evidenced by Evidence B”). An inference asserted between two claims (A – the source – and B – the target) denotes that the truth of Claim A is said to infer the truth of Claim B.

Example