

C.7 ArgumentReasoning

The concrete syntax of ArgumentReasoning is defined in C13 (note: the right hand side of the notation).

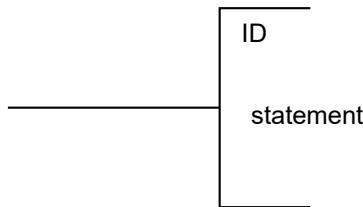


Figure C13 - Concrete Syntax for ArgumentReasoning

C.8 AssertedInference

The concrete syntax of AssertedInference is defined in Figure C14, where the dot represents the AssertedInference instance, the edge without an arrow represents the +source reference of the AssertedInference, and the edge with an arrow represents the +target reference of the AssertedInference.

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Figure C14 - Concrete Syntax for asserted AssertedInference

An assumed AssertedInference indicates that the inference is assumed without any supporting evidence or argumentation. The concrete syntax of an assumed AssertedInference is defined in Figure C15 (note: the change is applied to the +target reference edge of an AssertedInference).



Figure C15 - Concrete Syntax for assumed AssertedInference

A needsSupport AssertedInference indicates that the inference is declared as requiring further evidence or argumentation. The concrete syntax of a needsSupport AssertedInference is defined in Figure 16 (note: the change is applied to the +target reference edge of an AssertedInference).



Figure C16 - Concrete Syntax for needsSupport AssertedInference

An axiomatic AssertedInference indicates that the inference is declared to be axiomatically true. The concrete syntax of an axiomatic AssertedInference is defined in Figure C17 (note: the change is applied to the +target reference edge of an AssertedInference).

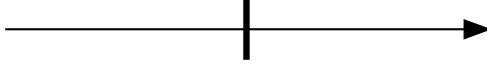


Figure C17 - Concrete Syntax for axiomatic AssertedInference

A defeated AssertedInference indicates that the inference is defeated by counter-evidence. The concrete syntax of a defeated AssertedInference is defined in Figure C18 (note: the change is applied to the +target reference edge of an AssertedInference).

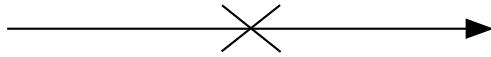


Figure C18 - Concrete Syntax for defeated AssertedInference

A asCited AssertedInference indicates that the inference cites another AssertedInference and is hence supported by the cited AssertedInference. The concrete syntax of an asCited AssertedInference is defined in Figure C19 (note: the change is applied to the +target reference edge of an AssertedInference).

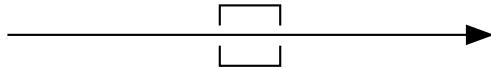


Figure C19 - Concrete Syntax for asCited AssertedInference

An abstract AssertedInference indicates that the inference is part of a pattern or template. The concrete syntax of an abstract AssertedInference is defined in Figure C20 (note: the change is applied to the +target reference edge of an AssertedInference).



Figure C20 - Concrete Syntax for abstract asserted AssertedInference

For other types of AssertedInference, they should be rendered in dash lines, should their +isAbstract attribute is true.

An isCounter AssertedInference indicates that the inference counters its declared purposes. The concrete syntax of an isCounter AssertedInference is defined in Figure C21 (note: the change is applied to the +target reference edge of an AssertedInference).



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Figure C21 - Concrete Syntax for counter asserted AssertedInference

C.9 AssertedEvidence

The concrete syntax of AssertedEvidence is defined in Figure C22, where the dot represents the AssertedEvidence instance, the edge without an arrow represents the +source reference of the AssertedEvidence, and the edge with an arrow represents the +target reference of the AssertedEvidence

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Figure C22 - Concrete Syntax for asserted AssertedEvidence

An assumed AssertedEvidence indicates that the inference is assumed without any supporting evidence or argumentation. The concrete syntax of an assumed AssertedEvidence is defined in Figure C23 (note: the change is applied to the +target reference edge of an AssertedEvidence).



Figure C23 - Concrete Syntax for assumed AssertedEvidence

A needsSupport AssertedEvidence indicates that the inference is declared as requiring further evidence or argumentation. The concrete syntax of a needsSupport AssertedEvidence is defined in Figure C24 (note: the change is applied to the +target reference edge of an AssertedEvidence).



Figure C24 - Concrete Syntax for needsSupport AssertedEvidence

An axiomatic AssertedEvidence indicates that the inference is declared to be axiomatically true. The concrete syntax of an axiomatic AssertedEvidence is defined in Figure C25 (note: the change is applied to the +target reference edge of an AssertedEvidence).

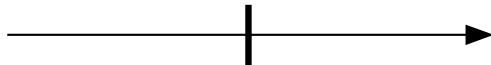


Figure C25 - Concrete Syntax for axiomatic AssertedEvidence

A defeated AssertedEvidence indicates that the inference is defeated by counter-evidence. The concrete syntax of a defeated AssertedEvidence is defined in Figure C26 (note: the change is applied to the +target reference edge of an AssertedEvidence).

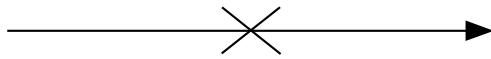


Figure C26 - Concrete Syntax for defeated AssertedEvidence

A asCited AssertedEvidence indicates that the inference cites another AssertedEvidence and is hence supported by the cited AssertedEvidence. The concrete syntax of an asCited AssertedEvidence is defined in Figure C27 (note: the change is applied to the +target reference edge of an AssertedEvidence).

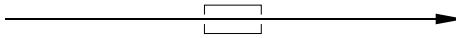


Figure C27 - Concrete Syntax for asCited AssertedEvidence

An abstract AssertedEvidence indicates that the inference is part of a pattern or template. The concrete syntax of an abstract AssertedEvidence is defined in Figure C28 (note: the change is applied to the +target reference edge of an AssertedEvidence).



Figure C28 - Concrete Syntax for abstract asserted AssertedEvidence

For other types of AssertedEvidence, they should be rendered in dash lines, should their +isAbstract attribute is true.

An isCounter AssertedEvidence indicates that the inference counters its declared purposes. The concrete syntax of an isCounter AssertedEvidence is defined in Figure C29 (note: the change is applied to the +target reference edge of an AssertedEvidence).



Figure C29 - Concrete Syntax for counter asserted AssertedEvidence

C.10 AssertedContext

The concrete syntax of AssertedContext is defined in Figure C30, where the dot represents the AssertedContext instance, the edge without an arrow represents the +source reference of the AssertedContext, and the edge with an arrow represents the +target reference of the AssertedContext.

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Figure C30 - Concrete Syntax for asserted AssertedContext

An assumed AssertedContext indicates that the inference is assumed without any supporting evidence or argumentation. The concrete syntax of an assumed AssertedContext is defined in Figure C31 (note: the change is applied to the +target reference edge of an AssertedContext).



Figure C31 - Concrete Syntax for assumed AssertedContext

A needsSupport AssertedContext indicates that the inference is declared as requiring further evidence or argumentation. The concrete syntax of a needsSupport AssertedContext is defined in Figure C32 (note: the change is applied to the +target reference edge of an AssertedContext).



Figure C32 - Concrete Syntax for needsSupport AssertedContext

An axiomatic AssertedContext indicates that the inference is declared to be axiomatically true. The concrete syntax of an axiomatic AssertedContext is defined in Figure C33 (note: the change is applied to the +target reference edge of an AssertedContext).



Figure C33 - Concrete Syntax for axiomatic AssertedContext

A defeated AssertedContext indicates that the inference is defeated by counter-evidence. The concrete syntax of a defeated AssertedContext is defined in Figure C34 (note: the change is applied to the +target reference edge of an AssertedContext).

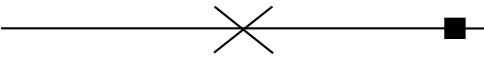


Figure C34 - Concrete Syntax for defeated AssertedContext

A asCited AssertedContext indicates that the inference cites another AssertedContext and is hence supported by the cited AssertedContext. The concrete syntax of a defeated AssertedInference is defined in Figure C35 (note: the change is applied to the +target reference edge of an AssertedContext).

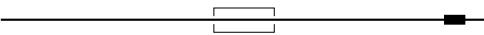


Figure C35 - Concrete Syntax for asCited AssertedContext

An abstract AssertedContext indicates that the inference is part of a pattern or template. The concrete syntax of a defeated AssertedContext is defined in Figure C36 (note: the change is applied to the +target reference edge of an AssertedContext).

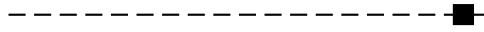


Figure C36 - Concrete Syntax for abstract asserted AssertedContext

For other types of AssertedContext, they should be rendered in dash lines, should their +isAbstract attribute is true.

An isCounter AssertedContext indicates that the inference counters its declared purposes. The concrete syntax of an isCounter AssertedContext is defined in Figure C37 (note: the change is applied to the +target reference edge of an AssertedContext).

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Figure C37 - Concrete Syntax for counter asserted AssertedContext

C.11 AssertedArtifactSupport

The concrete syntax of AssertedArtifactSupport is defined in Figure C38, where the dot represents the AssertedArtifactSupport instance, the edge without an arrow represents the +source reference of the AssertedArtifactSupport, and the edge with an arrow represents the +target reference of the AssertedArtifactSupport.

Replace Figure with larger "dot"



Figure C38 - Concrete Syntax for asserted AssertedArtifactSupport

An assumed AssertedArtifactSupport indicates that the inference is assumed without any supporting evidence or argumentation. The concrete syntax of an assumed AssertedArtifactSupport is defined in Figure C39 (note: the change is applied to the +target reference edge of an AssertedArtifactSupport).



Figure C39 - Concrete Syntax for assumed AssertedArtifactSupport

A needsSupport AssertedArtifactSupport indicates that the inference is declared as requiring further evidence or argumentation. The concrete syntax of a needsSupport AssertedArtifactSupport is defined in Figure C40 (note: the change is applied to the +target reference edge of an AssertedArtifactSupport).



Figure C40 - Concrete Syntax for needsSupport AssertedArtifactSupport

An axiomatic AssertedArtifactSupport indicates that the inference is declared to be axiomatically true. The concrete syntax of an axiomatic AssertedArtifactSupport is defined in Figure C41 (note: the change is applied to the +target reference edge of an AssertedArtifactSupport).

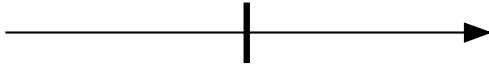


Figure C41 - Concrete Syntax for axiomatic AssertedArtifactSupport

A defeated AssertedArtifactSupport indicates that the inference is defeated by counter-evidence. The concrete syntax of a defeated AssertedArtifactSupport is defined in Figure C42 (note: the change is applied to the +target reference edge of an AssertedArtifactSupport).

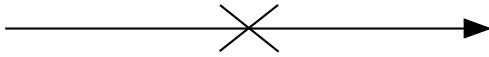


Figure C42 - Concrete Syntax for defeated AssertedArtifactSupport

A asCited AssertedArtifactSupport indicates that the inference cites another AssertedArtifactSupport and is hence supported by the cited AssertedArtifactSupport. The concrete syntax of a defeated AssertedInference is defined in Figure C43 (note: the change is applied to the +target reference edge of an AssertedArtifactSupport).

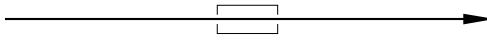


Figure C43 - Concrete Syntax for asCited AssertedArtifactSupport

An abstract AssertedArtifactSupport indicates that the inference is part of a pattern or template. The concrete syntax of a defeated AssertedArtifactSupport is defined in Figure C44 (note: the change is applied to the +target reference edge of an AssertedArtifactSupport).



Figure C44 - Concrete Syntax for abstract asserted AssertedArtifactSupport

For other types of AssertedArtifactSupport, they should be rendered in dash lines, should their +isAbstract attribute is true.

An isCounter AssertedArtifactSupport indicates that the inference counters its declared purposes. The concrete syntax of an isCounter AssertedArtifactSupport is defined in Figure C45 (note: the change is applied to the +target reference edge of an AssertedArtifactSupport).

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Figure C45 - Concrete Syntax for counter asserted AssertedArtifactSupport

Note: although the graphical notation of AssertedArtifactSupport is similar to AssertedInference/AssertedEvidence, they are distinguishable through the types of elements that the +source and +target references connect to.

C.12 AssertedArtifactContext

The concrete syntax of AssertedArtifactContext is defined in Figure C46, where the dot represents the AssertedArtifactContext instance, the edge without an arrow represents the +source reference of the AssertedArtifactContext, and the edge with an arrow represents the +target reference of the AssertedArtifactContext.

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Figure C46 - Concrete Syntax for asserted AssertedArtifactContext

An assumed AssertedArtifactContext indicates that the inference is assumed without any supporting evidence or argumentation. The concrete syntax of an assumed AssertedArtifactContext is defined in Figure C47 (note: the change is applied to the +target reference edge of an AssertedArtifactContext).



Figure C47 - Concrete Syntax for assumed AssertedArtifactContext

A needsSupport AssertedArtifactContext indicates that the inference is declared as requiring further evidence or argumentation. The concrete syntax of a needsSupport AssertedArtifactContext is defined in Figure C48 (note: the change is applied to the +target reference edge of an AssertedArtifactContext).



Figure C48 - Concrete Syntax for needsSupport AssertedArtifactContext

An axiomatic AssertedArtifactContext indicates that the inference is declared to be axiomatically true. The concrete syntax of an axiomatic AssertedArtifactContext is defined in Figure C49 (note: the change is applied to the +target reference edge of an AssertedArtifactContext).

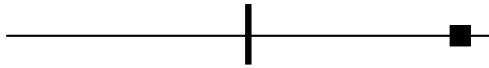


Figure C49 - Concrete Syntax for axiomatic AssertedArtifactContext

A defeated AssertedArtifactContext indicates that the inference is defeated by counter-evidence. The concrete syntax of a defeated AssertedArtifactContext is defined in Figure C50 (note: the change is applied to the +target reference edge of an AssertedArtifactContext).



Figure C50 - Concrete Syntax for defeated AssertedArtifactContext

A asCited AssertedArtifactContext indicates that the inference cites another AssertedArtifactContext and is hence supported by the cited AssertedArtifactContext. The concrete syntax of a defeated AssertedInference is defined in Figure C51 (note: the change is applied to the +target reference edge of an AssertedArtifactContext).

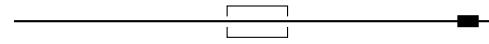


Figure C51 - Concrete Syntax for asCited AssertedArtifactContext

An abstract AssertedArtifactContext indicates that the inference is part of a pattern or template. The concrete syntax of a defeated AssertedArtifactContext is defined in Figure C52 (note: the change is applied to the +target reference edge of an AssertedArtifactContext).



Figure C52 - Concrete Syntax for abstract asserted AssertedArtifactContext

For other types of AssertedArtifactContext, they should be rendered in dash lines, should their +isAbstract attribute is true.

An isCounter AssertedArtifactContext indicates that the inference counters its declared purposes. The concrete syntax of an isCounter AssertedArtifactContext is defined in Figure C53 (note: the change is applied to the +target reference edge of an AssertedArtifactContext).

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Figure C53 - Concrete Syntax for counter asserted AssertedArtifactContext

Note: although the graphical notation of AssertedArtifactContext is similar to AssertedContext, they are distinguishable through the types of elements that the +source and +target references connect to.

Annex D: Examples of Argumentation Elements

(informative)

D.1 Claims

In some cases, it is necessary to state explicitly the assumption to support the declared Assertion in an argumentation. For example, Claims G2 and G3 are asserted to support Claim G1, the relationship between them is declared using an AssertedInference. In this case, an assumed Claim A1 is declared to explicitly describe the assumption that is being made to support the AssertedInference between Claim G2, G3, and G1.

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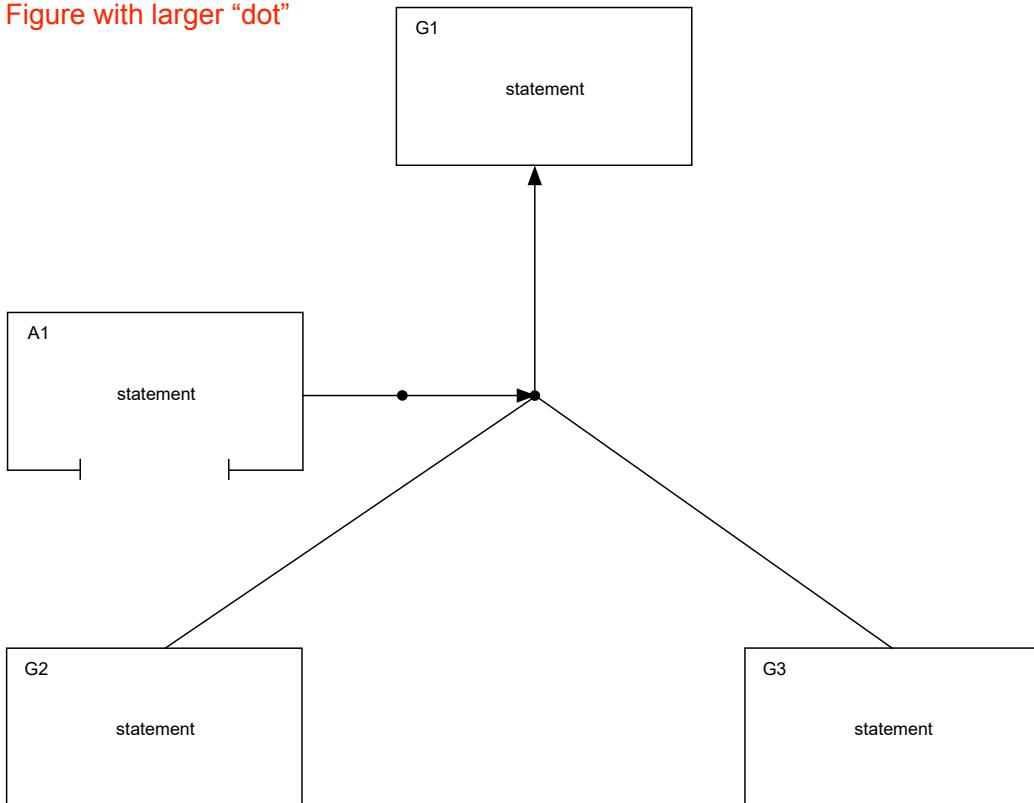


Figure D1 – Example of Claim Assumptions

A needsSupport Claim indicates a Claim is intentionally declared as requiring further evidence or argumentation. For example, Claim G11 is supported by Claim G12 and Claim G13. However, both Claim G12 and Claim 13 is declared as needsSupport Claims, indicates that both Claims required further evidence or argumentation.

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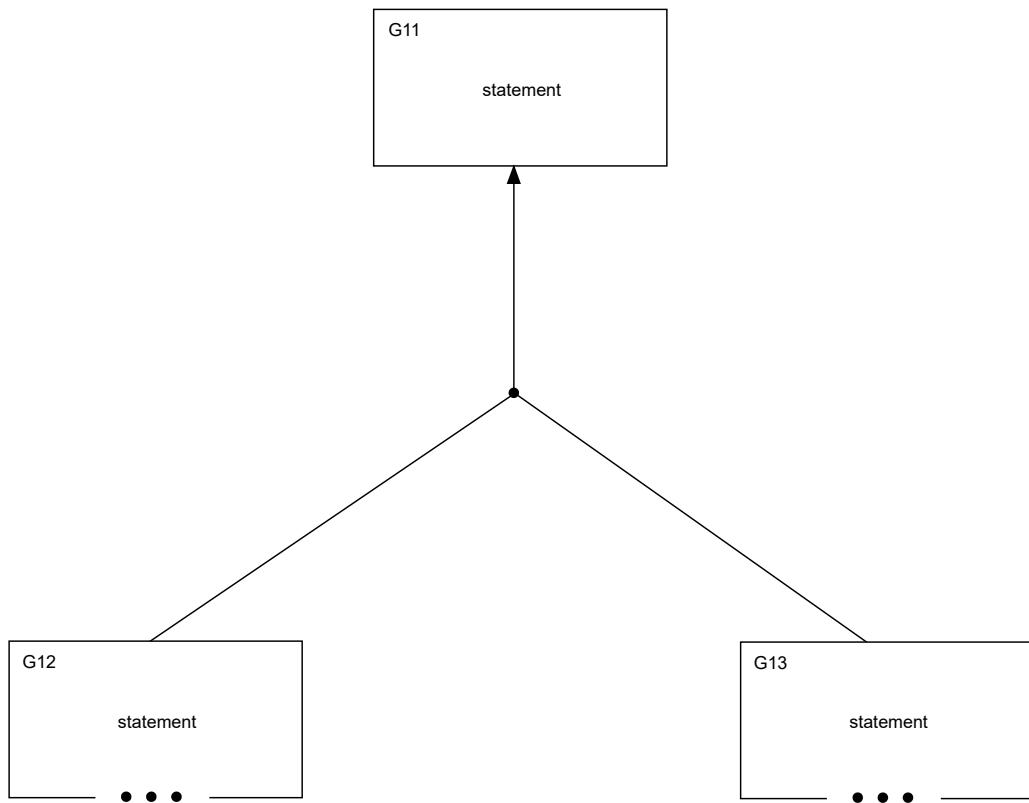


Figure D2 – Example of a Claim needing support

An axiomatic indicates a Claim is intentionally declared as axiomatically true. In some cases, an axiomatic Claim can be used to support the assertion that is made in an argumentation. For example, an axiomatic Claim AC1 is declared to support the inference (using AssertedInference) that is asserted from the Claim G8 and Claim G9 to support Claim G6.

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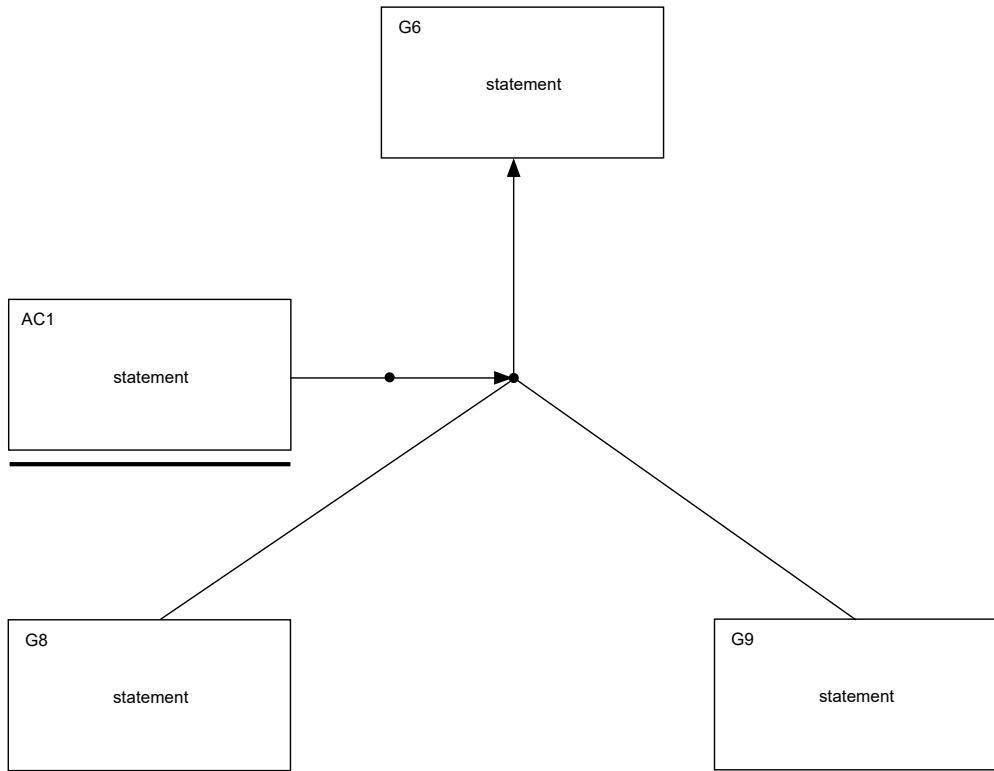


Figure D3 – Example of an Axiomatic Claim

A defeated Claim indicates a Claim is defeated by counter-evidence. For example, Claim G9 is defeated by evidence E3 (cited using ArtifactReference) that is declared using the counter-evidence relationship. Therefore, the Claim G9 is further declared as Defeated Claim.

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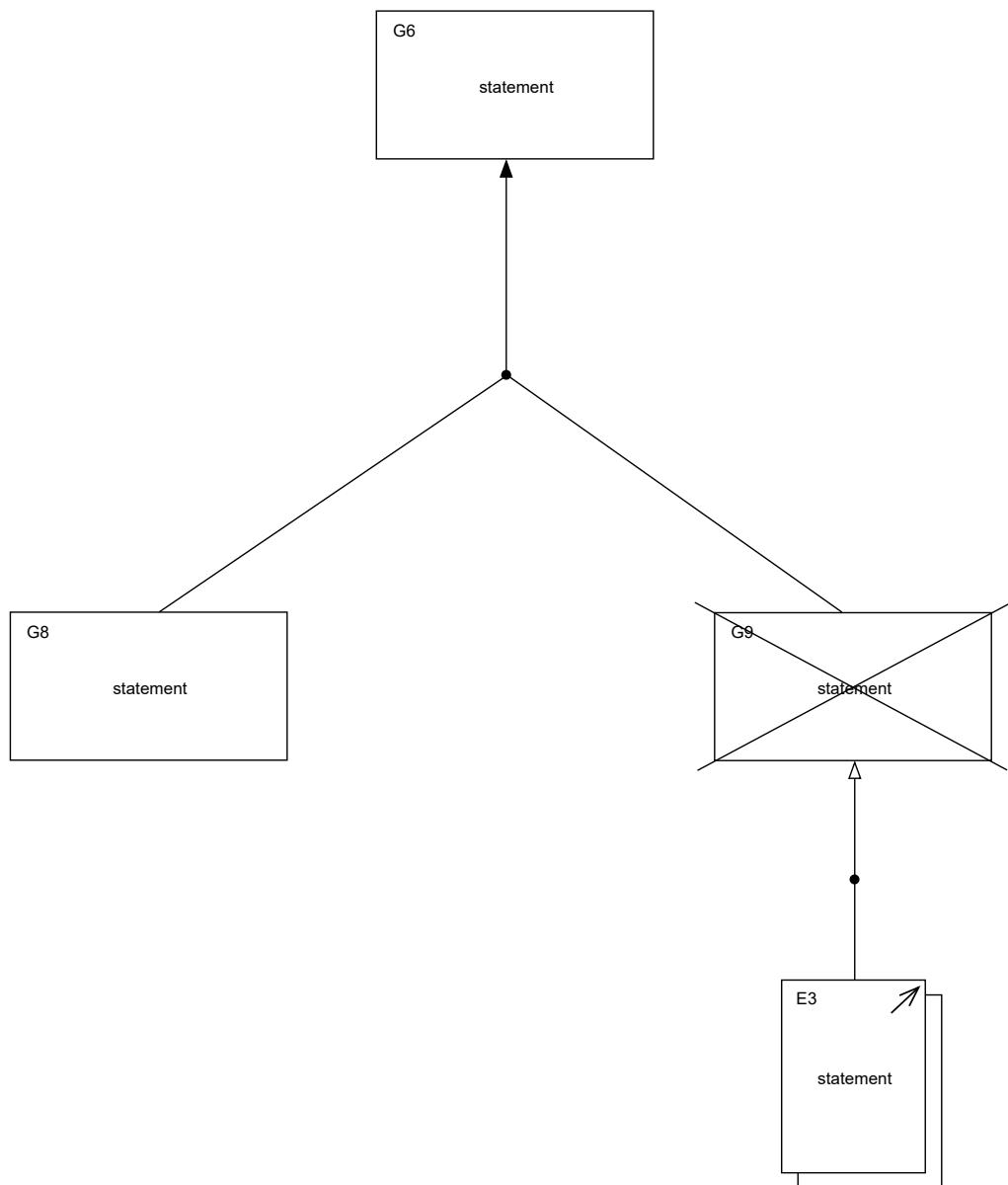


Figure D4 – Example of Defeating a Claim

An asCited Claim indicates a Claim which cites another claim and supported by the cited claim. The identifier of the Claim is placed in the top-left corner of the square brackets. The identifier of the cited Claim is placed in the top-left corner of the cited Claim and is written within a square bracket. An optional identifier of the cited package where the cited claim is located, can be written before the cited claim identifier. For example, Claim G3 is supported by Claim G6 and Claim G7. Claim G7 is declared as asCited Claim that is a Claim that cited another Claim, in this case is Claim G10.

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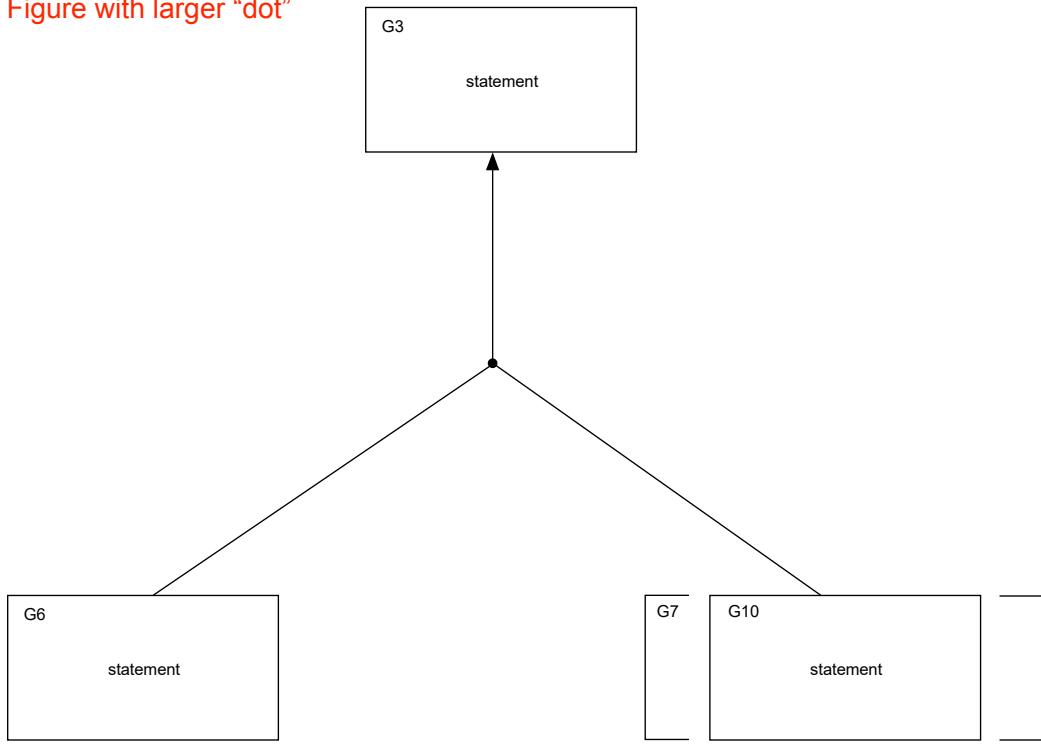


Figure D5 - Example of Claim citation

An abstract Claim indicates a Claim is part of a pattern or template. For example, Claim G1, G2, and G3 are declared as an abstract Claim that indicates that abstract Claim G1, G2, and G3 are part of argument pattern.

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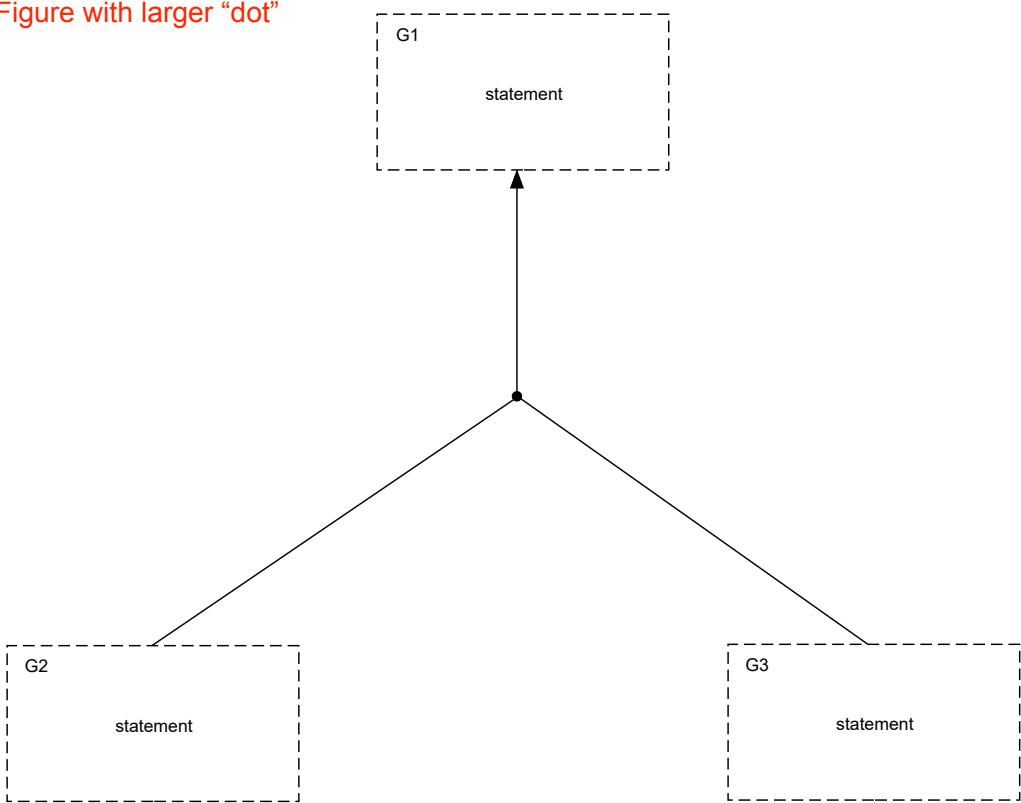


Figure D6 – Example of abstract Claims forming an argument pattern

D.2 MetaClaim

When used in a diagram, the source element of the MetaClaim must be type of Claim and the targeted element can be type of Assertion. The location of the source element of the MetaClaim must be located on the left and right side of the targeted element and the relationship between them is declared using the MetaClaim.

For example, Claim MC1 that is connected to Claim G1. The relationship between MC1 and G1 is declared using the MetaClaim, indicates Claim MC1 is concerning (i.e. about) Claim G1.



Figure D7 – Example of Claim and MetaClaim Relationship

D.3 AssertedInference

One or more assertions (e.g. Claims) can be linked together using the AssertedInference relationship. The direction of the AssertedInference relationship starts from the supporting element to the supported element. When used in a diagram, a connected dot is used as a connection point when more than one AssertedInferences are connected.

For example, Claim G1 is supported by Claim G2 and G3. The direction of the AssertedInference relationship is start from the supporting elements, Claim G2 and G3, to the supported element, Claim G1.

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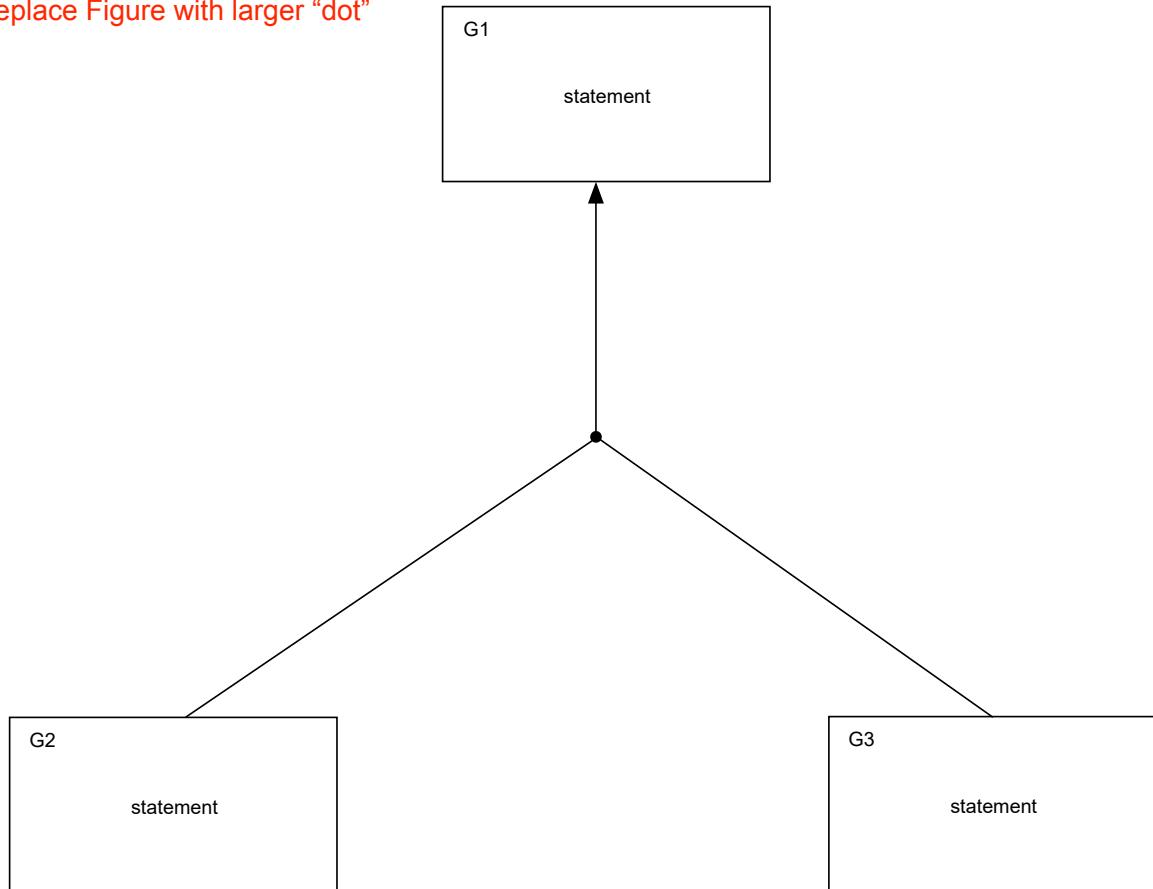


Figure D8 – Example of AssertedInference of Supporting Claims

D.4 ArtifactReference and AssertedEvidence

AssertedEvidence can be used to records the declaration that one or more artifacts of Evidence (cited by ArtifactReference) provide supporting information that helps establish the truth of a Claim. When used in a diagram, the direction of the AssertedEvidence relationship starts from the evidence (cited by ArtifactReference) to the supported element. The position of the ArtifactReference as evidence must be located below the supported element.

For example, Claim G4 is supported by Evidence E1 (cited by ArtifactReference), connected via AssertedEvidence relationship.

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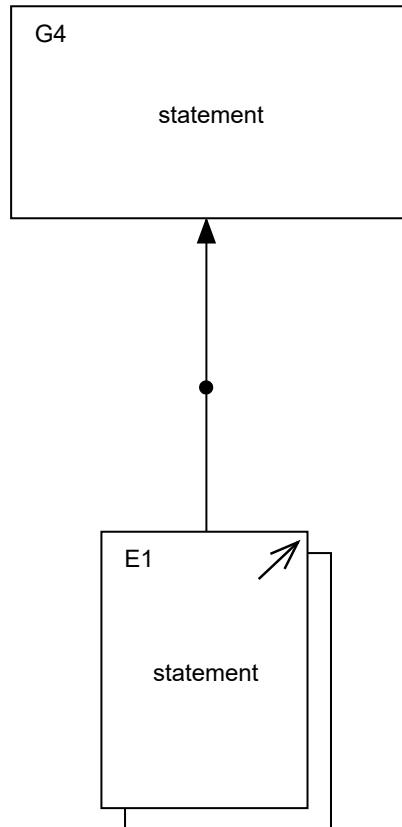


Figure D9 – Example of ArtifactReference Citation via AssertedEvidence

In another case, ArtifactReference as evidence can be used to support another ArtifactReference, for example ArtifactReference as context, to provides evidential information. In this case, ArtifactReference as evidence E2 is declared to support ArtifactReference as context C1. The ArtifactReference as evidence E2 is located below ArtifactReference C1. The relationship between them is declared using the AssertedArtifactSupport.

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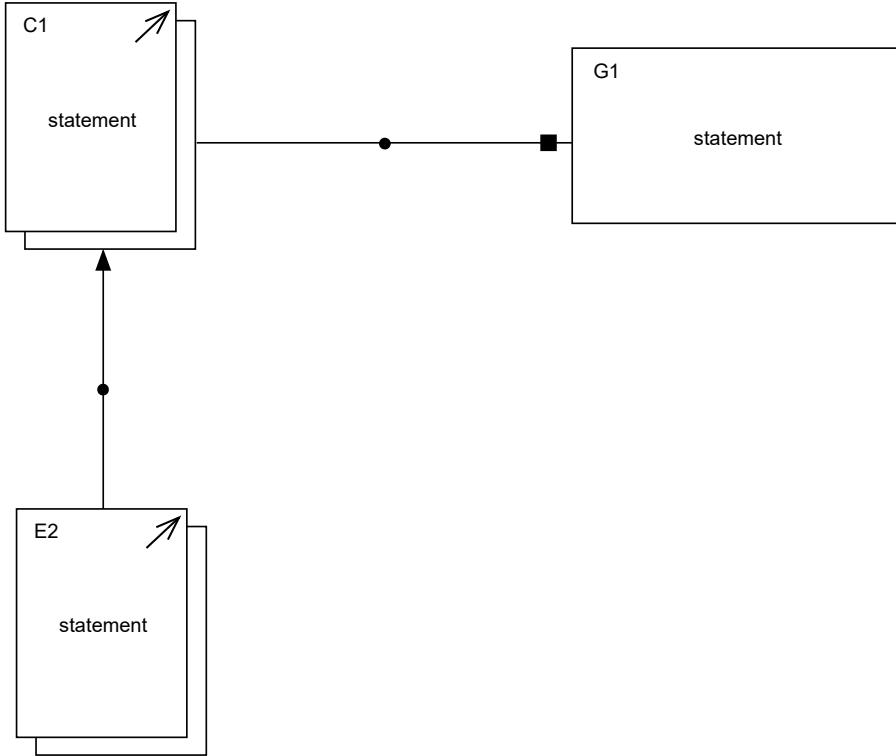


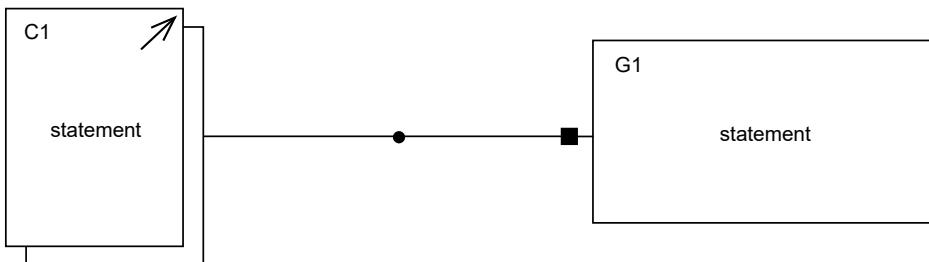
Figure D10 – Example of ArtifactReference Support of Another ArtifactReference

D.5 AssertedContext

AssertedContext can be used to declare that the artifact (cited by an ArtifactReference) provides the context for the interpretation and scoping of a Claim. When used in a diagram, the source element of the AssertedContext must be an ArtifactReference element, and the targeted element can be the Assertion type element (e.g. Claim). The location of the ArtifactReference as a context must be located on the left and right side of the targeted element.

For example, ArtifactReference C1 as a context provides contextual information to the Claim G1 that is connected using AssertedContext relationship.

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Replace Figure with larger “dot” Figure D11 – Example of AssertedContext

In another case, ArtifactReference as context can be used to provides contextual information to another ArtifactReference (as evidence). In this case, ArtifactReference as context C2 is located on the right side of the ArtifactReference as evidence E1. The relationship between them is declared using the AssertedArtifactContext relationship.

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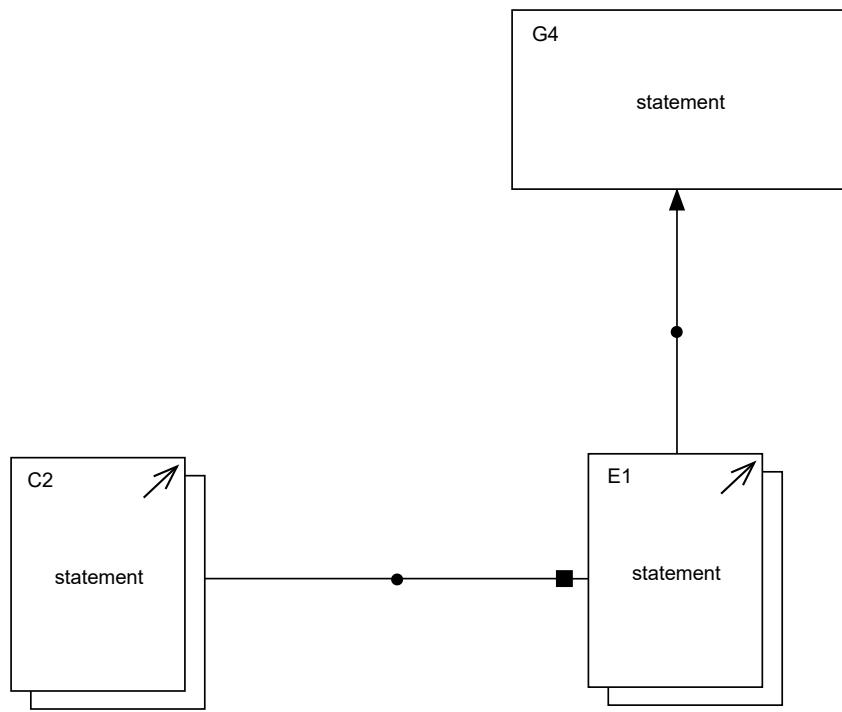


Figure D12 – Example of AssertedArtifactContext