

CPNI

Centre for the Protection
of National Infrastructure

CAE:

ONE PAGE MINI-GUIDE



This guide provides a consolidated summary of the key concepts of Claims, Arguments and Evidence (CAE) and their application.

CONCEPTS

Claim. A claim is a true/false statement about a property of a particular object. A claim is exactly what you might consider it to be from common usage of the term; an idea that someone is trying to convince somebody else is true. An example of a generic claim might be, “The system is safe”.

Argument. An argument is a rule that provides the bridge between what we know or are assuming (subclaims, evidence) and the claim we are investigating. The argument used depends on the type, trustworthiness and extent of available evidence and the nature of the claim.

Evidence. Evidence is an artefact that establishes facts that can be trusted and lead directly to a claim. In projects there can be many sources of information but what makes a source evidence is the support or rebuttal it gives to a claim.



Guidance

Identify the purpose of the CAE and the target audience.	CAE should address specific requirements and communicate how they were achieved.
Check that the claim is a statement that could be true or false.	Each claim should contain one single statement only. Avoid the use of ‘and’ or ‘or’.
Identify any detailed context that is needed for the claims to be understood (e.g. of the plant, operating modes, assumptions, environment) and a description of what the claim refers to.	The context contains the scope of the claim. Remember that a claim may only hold true within the boundaries of that scope definition, so the context itself can be challenged.
Check the claim for overloaded, vague or ambiguous words (‘safe’, ‘fault’).	These may hide anything from further claims, to assumptions that must be made clear.
Check that the claim can be expressed as ‘X has property Y’.	As above, a claim should be clear and direct, focusing on one object and its property.
Ask why the claim might be valid. The ‘because’ will identify the subclaims that if true support the claim.	What is your rationale for supporting a claim? How are you going to go about explaining why a claim holds true?

<p>Ask what is the general rule is that provides the link between these subclaims and the claim (this is the argument).</p>	<p>The argument must provide a justification for the selected subclaims and must explain how they support the claim.</p>
<p>Identify the evidence artefact and the claim that is directly supported by the evidence. If necessary, develop further subclaims and arguments to link this to the case.</p>	<p>The evidence should be a 'thing in the world', e.g. 'test report' and should not contain any evaluations in the CAE.</p>
<p>Explain whether the evidence can be trusted and why.</p>	<p>How was it developed? What methods and techniques were used? Is it verifiable?</p>
<p>Identify if the evidence is a primary source or has been derived from other reports.</p>	<p>If the evidence is not direct it is more difficult to trust it.</p>

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