

# TYPES OF REQUIREMENTS

Question: What is the subject of the set of requirements? The answer could be a hardware item (e.g., aircraft, a management information system, a resistor), a piece of software (e.g., a word processing application, a member of a class library, a utility), or a service (e.g., a maintenance service, a window cleaning service or a project management service).

*All types of requirements are with reference to the item to which the requirements set applies.*

REQUIREMENT TYPE	CRITERION
State/Mode	States the required states and/or modes of the item, or the required transition between one state and another state, one mode and another mode, mode in one state to mode in another state. A “state” is a condition of something. A “mode” is a group of functionality related to purpose.
Functional	States what the item is to <i>do</i> .
Performance	For a given function, states <i>how well</i> that function is to be performed by the item.
External Interface	States the required characteristics at a localised point, or region, of connection of the item to the outside world (e.g., location, geometry, inputs and outputs by name and specification, allocation of signals to pins, etc.).
Environmental	Limits the effect that the external enveloping environment (natural or induced) is to have on the item, and the effect that the item is to have on the external enveloping environment.
Resource	Limits the usage or consumption by the item of an <i>externally</i> provided resource.
Physical	States the required <i>physical characteristics</i> (properties of matter) of the item as a <i>whole</i> (e.g., mass, dimension, volume).
Other Quality	States any other required quality of the item that is not one of the above types, nor is a design requirement.
----- Design	----- Directs the design (internals of the item), by inclusion (build it internally this way), or exclusion (don’t build it internally this way).

Note: The same types apply also to goals (also termed design goals, targets)