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## Include, Comprise, Involve



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### 1 Introduction

We commonly use words like *include* and *comprise* when describing the components and structure of an apparatus, a step in a method, or simply properties of objects. In addition, these kinds of words are often used as transitional phrases in claims, for example

“What is claimed is  
1. A sensor *comprising* a semiconductor wafer...”

Common words or phrases include

*have*  
*include*  
*comprise*  
*contain*  
*consist [of]*  
*consist essentially [of]*  
*[be] composed [of]*  
*provided with*  
*involve*  
*incorporate*  
*allow for*  
*take into account*  
*take into consideration*

These words and phrases are used in different situations and with different levels of formality. This edition of Technical English Notes will try to give some useful examples.

## 2 Have and has

In everyday English, whether technical or non-technical, *has* and *have* are some of the most common words in use. Using the example of a car:

“The car *has* leather seats, air conditioning, GPS navigation and a 3-year warranty.”

The list of components is not necessarily complete, but all of the listed components are present. If, however, some items may not be present, a simple modification can be made

“The car *has* leather seats, GPS navigation, a 3-year warranty, and *may have* air conditioning in some countries.”

If everything in the list is optional, then one can say:

“The car *may have* leather seats, GPS navigation, air conditioning and a 3-year warranty.”

Technical examples are similar:

“Turbofan engines *have* a fan, compressor, combustion chamber and nozzle. The fan *may have* either titanium or ceramic composite fan blades.”

A final warning on patent usage: although *have* may not always indicate a closed or open list, this should be clearly described in the specification to avoid problems.

### **Warning: Use *may not* with care!**

The negative for *may* should be used carefully to avoid ambiguous sentences.

“You *may not* find a room at that hotel” (i.e. you may get a room, but the hotel may be full)

“You *may not* walk on the grass” (i.e. it is forbidden)

Normally, the meaning is clear from context, as in both of the above cases. Also, the first of the two above meanings is the more common. If the sentence is a direct order, “...*must not*...” would be clearer. Consider the following sentence:

“The valve *may not* open when the pressure exceeds 1MPa.”

In this case, is the valve prevented from opening for safety reasons? Or does it mean that the valve may open, but not always? It would have been better to say

“The valve *will not* open when the pressure exceeds 1MPa”

“The valve *cannot* be opened when the pressure exceeds 1MPa” or

“The valve *might not* open when the pressure exceeds 1MPa”

“The valve *may not* open *reliably* when the pressure exceeds 1MPa”

Take care that the context makes the meaning clear.

### 3 Included in Object or Process

There are many common words for describing these situations other than *have/has*.

#### include

"*include*" is a very useful word because it does not limit the list following to the items mentioned. If we say

"The engine *includes* a compressor, combustion chamber, and nozzle."

*include* could also be used when describing methods, although the use of *comprising* is more common.

#### comprise

In normal usage, this word feels more restrictive than include. There is a feeling that the list *may* be a closed list<sup>1</sup>; there is a feeling of more restriction.

"The house includes a kitchen, bathroom and 2 bedrooms." (There are more rooms)  
 "The house comprises a kitchen, bathroom and 2 bedrooms." (Maybe the only rooms)

Despite this, *comprise* is used sometimes with open-ended lists, and is often used interchangeably with *include*. This is a common source of misunderstanding. The more restrictive ("closed list") interpretation may be an older, more traditional meaning. In modern usage, both interpretations are commonly seen.

The phrase "*is comprised of*" often sounds stronger in normal English, and may be interpreted as a closed list by patent examiners.

"...is comprised of a kitchen, bathroom and 2 bedrooms." (Probably the only rooms)

Another potential problem with *comprise* is disagreement over the correct interpretation. Returning to the example of a car, and assuming a closed-list example

(a) "The wheel assembly comprises a tyre, wheel, hub cap and brake unit."

However, the 'opposite' structure is also common

(b) "The tyre, wheel, hub cap and brake unit comprise the wheel assembly."

Some people feel that the example (b) above is 'new' and incorrect.

While (b) may be regarded as "lazy" English by traditionalists, it has been common for many years.

<sup>1</sup> Oxford Dictionary of English (2003 Edition) and also some other dictionaries state under *include* that *comprises* implies that the list is a complete list.

In US patent usage, this sometimes confusing word *comprising* has been addressed in a section of the USPTO Manual of Patent Examining Practice (MPEP), and there is a clear definition:

"The transitional term "comprising", which is synonymous with "including," "containing," or "characterized by," is inclusive or open-ended and does not exclude additional, unrecited elements or method steps.'

MPEP 2111.03 Transitional Phrases [R-3] - 2100 Patentability

In other words, in normal English there is a feeling that a closed list may be intended. However, in US patent practice *comprising* is defined to mean an open list.

Comprising is also common in method claims

"The method of claim 3, wherein the cleaning step *comprises* ..." (OK)

### contain

In normal English, contain is used to mean "has inside or within itself".

"This tin contains 400g of biscuits." (OK)

It is not usually used for people – more specific words are usually used.

"This car can *contain* 4 people." (OK but slightly unnatural)

"This car can *seat* 4 people." (OK)

The reason "contain" can sound unnatural if used for people is because it can sound like "keeping inside" or "preventing from leaving"

"In the event of a crash, the seat belt ensures that the passenger is *contained safely* within the steel safety cell". (OK, or *restrained in/within*)

If used for an apparatus, whether described in a patent or not, *contain* (as mentioned before) provides a non-limiting list

"... an engine *containing* a 3-stage compressor ..." (OK, but see the warning below)

#### **Warning: contain can sound like 'has inside itself'!**

When simply reciting one or more components of a list, it is better to use *include*, *comprise*, or the like rather than *contain*.

This avoids a connotation that the recited component is somehow inside or within another component.

When describing a method, *containing* is unlikely to be used<sup>2</sup>.

"..the process may contain a step of cleaning..." (Slightly unnatural)

<sup>2</sup> A *Markush*-type claim directed to a process is possible (see MPEP 803.02, para 1) but relatively uncommon compared to the use of *Markush* claims for listing chemical species.

consist [essentially] of

*Consist of* is much more restrictive in meaning than *include* or *contain*. In everyday English,

“...the apartment consists of a lounge and bedroom.” (OK)

would strongly suggest that there are only 2 rooms, and that there is no bathroom. However, you can probably find examples written like this, even if they are strictly incorrect

“...this apartment consists of a lounge and bedroom, and also a small bathroom and toilet.” (Common but strictly speaking incorrect)

Using *consist of* to describe an apparatus, process or method is also *grammatically* correct.

“What is claimed is: (OK, but see warning below)  
1. A method of manufacturing a bolt, the method consisting of...”

**Warning: *consisting of* is dangerous!**

*consisting of* can be dangerous to use. It describes a closed list in both USPTO and EPO practice, and the list can *never* be extended under USPTO (and probably EPO) rules.

'The transitional phrase "consisting of" excludes any element, step, or ingredient not specified in the claim.'

'A claim which depends from a claim which "consists of" the recited elements or steps cannot add an element or step.'

- MPEP 2111.03 Transitional Phrases [R-3] - 2100 Patentability

“What is claimed is:

1. A metal sulphur battery where the metal is selected from the group consisting<sup>3</sup> of Fe, Ni and Co. (OK)
2. ~~The metal sulphur battery of claim 1, wherein the metal is Cu.~~ (No - No extension allowed)

Note that the phrase *consisting essentially of* is not equivalent to *consisting of*. The phrase *consisting essentially of* is taken to limit the list to the items mentioned, and “...any others that do not materially affect the basic and novel characteristic(s)” of the claimed invention. “ (MPEP).

However, during examination under 35 U.S.C. 102 and 103 (regarding novelty and non-obviousness respectively), the MPEP states that

'...absent a clear indication in the specification or claims of what the basic and novel characteristics actually are, "consisting essentially of" will be construed as equivalent to "comprising."'

- MPEP 2111.03 Transitional Phrases [R-3] - 2100 Patentability

In other words, a broad interpretation will be given to *consisting essentially of*, and it will not necessarily be construed as strictly limiting, at least when examining novelty or obviousness.

<sup>3</sup> The words “...consisting of...” are usual in these so-called *Markush* claims. The rules governing their use are complex and beyond the scope of this article. For a useful discussion, see the US Government *Federal Register* / Vol. 72, No. 154 / Friday, August 10, 2007, p44992-45001

possess

The use of possess is not particularly common in technical writing. In English we talk about *possessions* as the things we personally own. There is a strong feeling of individual ownership, not shared with other people.

"I *possess* a camera and a laptop PC" (Unnatural – too strong.)  
 "I *have* a camera and a laptop PC" (OK)

It is unlikely to be used in a technical context.

"The compressor *possesses* a motor..." (Unnatural – the motor is not a person)

However, it is used frequently in a legal context to describe ownership.

"The judge dismissed the appeal, and held that a lender did not have to obtain an order from the court before being entitled to *take possession of* a property." (OK – report on legal case)

provided with or providing

The usual sense of this expression is that something is *given*. For example, in the rules for students taking one UK university chemistry course:

"All students will be *provided with* a laboratory notebook which must be kept up-to-date." (OK)

The use of provided with in a general technical context is not common. However, it is reasonably common in patent specifications.

"Domestic refrigerator provided with shelves" (Title, US Patent 7607744)

If used in a patent, the two different components are not necessarily integral. In normal English, due to the feeling of "given", it would be unusual to use "provided with" for an integral part of something, for example

"People are *provided with* 2 arms" (OK but unnatural. Arms are not an optional item for most people, so they are not normally "given").

However, in a patent there are many cases where the 2 components are integral or not.

"The door is *provided with* a shallow depression formed on the inside surface." (Integral)

"The door is *provided with* 2 hinges which are attached by screws." (Non-integral)

There is a feeling in normal English that *provided with* is more for physical examples. However, the

word *provided* could possibly be used in a method claim to describe either method steps or a physical component which is included as a precursor to an actual processing step.

- “ A method of heat treating a steel coil comprising:  
a) *providing* a hydrogen gas heat treating furnace; and  
b) placing the steel coil in the furnace for up to 10 hours; ....”

Using “...a method...providing a step of...” would sound unnatural, however.

### composed of

*Composed of* in normal English sounds like *made from / made of*. It sounds quite limiting, although not as limiting as *consist of*.

In patent usage, the interpretation of whether this word allows extra elements outside the scope of a claim depends on the specification: there is case law where the term *composed of* was construed as limiting or non-limiting, depending on the specification.

The transitional phrase "composed of" has been interpreted in the same manner as either "consisting of" or "consisting essentially of," depending on the facts of the particular case.

- MPEP 2111.03 Transitional Phrases [R-3] - 2100 Patentability

The phrase “depending on the facts of the case” hints that *composed of* may be interpreted as a closed list. In EPO applications also, there is a feeling that this may be a closed list, although it is not 100% definite.

### incorporating

The word *incorporating* sounds like “including as part of itself”. It sounds very slightly official or formal, and is less common in casual speech.

Used in a patent document, it sounds similar to *including*. It is occasionally (but not often) used as a transitional phrase in claims. For example

“What is claimed is:

1. A boot or shoe *incorporating* an electronic transducer for detecting when a step is made with the foot wearing the boot or shoe ...”

(US Patent 4510704)

Given that there are relatively few examples of the use of this word, it would probably be best to use a more common transitional phrase.

There is another meaning of incorporate, which is to combine things together to produce a single substance.

“The silica powder and metal particles are stirred to incorporate them together.” (OK)

made up of

“made up of” is not common in patent applications, and is therefore not recommended.

is formed of / with

This sounds quite limiting but not definitely a closed list. However, legal advice should be obtained before using it, or a more common phrase used.

equipped with

This is not so common but probably introduces an open list.

constituted of

This is not common, and may be taken as a closed list.

#### 4 Conceptually Include

##### *involve*

Some words from the list on page 1 have more restricted uses. One such example is *involve*. *Involve* is used in everyday English where some action, situation or process contributes to an overall process or result.

“Studying for a Medicine degree *involves* a lot of hard work” (OK)

~~“The sensor *involves* a doped silicon wafer 7 and a gold wires 8a and 8b attached by...”~~ (No – not physical lists)

*involving* is sometimes used in describing methods in patents, but *not* often in the claims. The following example is taken from the abstract.

“The present invention relates to methods for the biosynthesis of tetrodotoxin (TTX) involving the steps of obtaining a culture possessing one or more of a *Vibrio* species,...”

– US Patent Application 20080206825  
(Abstract)

The problem with *involving* is that it can sound vague and imprecise. It gives no hint on *how* something is involved. For this reason, it is used in abstracts and in the specification but is not so common in patent claims. For example, Claim 1 of the above application uses *comprising*, not *involving*.

“1. A method of biosynthesizing tetrodotoxin, *comprising* the steps of: obtaining a culture from a seed culture or ...”

– US Patent Application 20080206825  
(Claim 1, extract)

Possibly, *involve* could be used to describe a side-effect of a claim feature, but it is uncommon.

In fact, the most common usage in English is in phrases like

“The car was *involved in* an accident on the westbound interstate.”

In the above example, there is no information who caused the accident, just that there was an accident.

Similar phrases using *involve* in a descriptive sense, not in patent claims, include:

“The process *involves* coating the metal with a protective layer”

“The process *includes* coating the metal with a protective layer”

“The process *requires* coating the metal with a protective layer”

5 Decision Makingtake into account

Several of the words mentioned here are only used when making decisions and judgements. For example:

“It is important to *take into account* the opinions of the ABC department”  
*take into consideration*  
*allow for*

The first 2 examples are probably the easiest to use. “*Allow for*” can also sound a little like “*allow for some problem*”, and should be used with care. In the above example, it could sound slightly like you expect the ABC department to give some inconvenient opinion. It is, however, highly context dependent.

This is not the same as *make allowances for*.

“It is important to *make allowances for* the opinions of the ABC department” (No)

In the above case, the sentences are rather rude and basically say that the ABC department is a problem, and you will need to be patient when talking to them.

There are, however, correct technical uses for these words.

- (a) “The clearance 8 is *to allow for* thermal expansion”
- (b) “~~The clearance 8 is *to make allowances for* thermal expansion~~”
- (c) “The clearance 8 was modified, *taking into account* thermal expansion”
- (d) “The clearance 8 was modified, *taking into consideration* thermal expansion”

(a) states that the purpose of the clearance is provided due to thermal expansion, so that expansion is not hindered or damage caused. It is more precise but limiting than (c) or (d).

(c) and (d) above have a feeling of “the clearance was changed because a person thought about it and made a decision”. It is rather broad in meaning but vague. It is also possible (but tricky) to use these phrases when talking about the actions and decisions of, say, a computer-implemented invention, as sometimes conscious thought is implied.

To say

“The controller ECU adjusts the fuel flow to *take into account* the rate of NOx production.” (broader meaning)

is reasonable, although other phrases may be preferable and less ambiguous such as

“The controller ECU adjusts the fuel flow *to minimize* the rate of NOx production.” (more specific)

If the intent is to broadly describe an adjustment of fuel flow, *taking into account* or *taking into consideration* may be preferred since they cover any type of adjustment. Care must be taken that they are not judged to be indefinite. If the intent is to make a specific adjustment to fuel flow, the use of specific words like *increase*, *decrease*, *minimize* or *maximize* would be the better choice.

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Nevertheless, comments expressed herein are the personal opinion of the author only, and any errors are the author's alone.

This document should not replace specific, qualified legal advice for your particular situation.