



Similar Words : Determine, Detect and others.

## 1 Determine, 決定 and 感知

One of the problems when translating documents between languages occurs when you have a word or phrase that just doesn't exist in the target language, or has a subtly different meaning. A related problem occurs when people use a very general word in one language, but have many specific words in the other.

Take, for example, the Japanese words

決定 and 感知  
ke' ttei      kan chi

The first word has an approximate meaning of "decision" in English. Hence 決定する, "to decide". The second word is listed in my dictionary as "sense" or "perceive".

Both words are frequently translated in patent documents as "determine", as in the sentence

*"The temperature of the gas is determined using a sensor placed within the flow of gas "*

"Determine" is frequently used in patent documents by native speakers, and is certainly not a mistake. It is used less often in non-patent contexts. The reason for this is hinted at above, and in the "Introduction" document on this web site. "Determine" is a very general word, and can in fact mean 2 different things

- (a) *"The temperature of the gas is obtained..."* (i.e. sensed) or
- (b) *"The temperature of the gas is set ..."* (i.e. controlled)

So, in a sense, "determine" is a little ambiguous. How do we know the intention of the author? Well, usually, it's obvious from the context, and not really ambiguous at all (here, we know it's a sensor determining the temperature). However, consider the following sentence fragment (taken from a real application):

*"The controller determines the temperature of the..."*

This time, which is the correct meaning of *determined*, sensed or controlled? You might be tempted to think it's (b), controlled (after all, what does a controller do?). In fact, in this example the correct meaning was (a). The meaning only became clear to me after reading the next paragraph of the patent specification. The usual effect of these things is not an invalid patent or other disaster, but more a kind of minor reader fatigue from jumping around the document to check the meaning. In that case, with the word *controller* acting as a kind of false signal, maybe it would be better to write

*"The controller obtains the temperature of the..."*

Especially in non-patent documents, English speakers often prefer to use more specific words, like “sense” or “control”. The problem this causes is that many of these words are quite similar in meaning, and using them is naturally tricky for many non-native speakers of English. The next section offers some suggestions.

## 2 Alternatives to determine

If you don't want to use determine, what other words can you use? Here are a few alternatives, and some hints on using them.

### Obtain

*“... the controller obtains the temperature by...”*

*Obtain* is a general word, and has a meaning of *get*, not *set*. There is no information on whether the information was requested by the controller or was sent by something else, without any request. In fact, you could replace *obtain* by *get* and still have a perfectly correct sentence. Another alternative is *acquire*.

### Check

*“...the controller checks that the temperature is below the limit  $T_L$ ”*  
*“The controller checks the oil pressure.”*

This is correct, and there is a feeling of having some limit or desirable range of temperature. The temperature isn't wanted only for some calculation, but to verify that it is acceptable.

### Validate

*“...the controller validates the command syntax and transmits the command to...”*

This word is often used specifically in a software or computing-related context. Unfortunately, this has two roughly opposite possible meanings.

- a) The controller checks whether (i.e. if) the command syntax is valid.
- b) The controller decides that the command syntax is definitely valid.

If there is no risk of ambiguity, because the context is clear, there is no problem.

However, if there is a risk of ambiguity, in case (a) *check* might be better, and in case (b) something like this would remove the ambiguity

*“...the controller indicates that the command is valid by setting the value V to TRUE”*

Other words such as *verify*, *authorize* and *confirm* also suffer from this same potential for ambiguity.

## Monitor

*"... the controller monitors the temperature by..."*

The key difference from *obtain* is that there is a sense of continuously checking the temperature. It almost sounds like the temperature is being 'watched' by the controller closely. Incidentally, 'to watch' is only for people to do, not machines.

## Receive

*"...the controller receives the temperature from <something else>"*

This creates an impression in a sense opposite to *monitor*. In this case, it sounds like the temperature was sent by something else to the controller, but was not explicitly requested by the controller. For example:

*"...the controller receives an interrupt from the overheating sensor and triggers an alarm."*

## Detect

*"...if overheating of the element 32 is detected..."*

*"...the controller detects overheating by comparing the temperature..."*

*Detect* here feels similar to *find*, and is often more often used for yes/no situations rather than for getting a numerical value. Thus you'd probably *detect overheating* but be less likely to use *detect the temperature of <something>*.

## Diagnose

*"..the controller can diagnose the cause of the failure using the process described later ..."*

*Diagnose* (get the reason for something) and *analyse* (study information about something) are somewhat similar. Both can be used when talking about an invention, if the process they perform is clear. If the process is not clear, these words could sound like 'think about', which only a human operator can perform. *Determine* might be a better choice.

*Diagnose* is most often used for finding the cause of problems, or doctors diagnosing an illness.

### 3. People only

The following words are usually used for talking about people only. This is usually because they actually imply thinking, or are so complex a person will probably be involved somewhere.

#### *Examine and Inspect*

These 2 words both imply a person is involved in the examination or inspection, probably with some complex process . It's unlikely that you'd say

*“the controller C1 examines/inspects the temperature of <something>” (?)*

Firstly, the thing being inspected should be reasonably complicated, not just a temperature value but a component or device. Secondly, if you wrote

*“the operator examines the temperature of the <something>”*

...it's still a little unnatural because it doesn't sound like a complicated or difficult process. It would be more common to say

*“the operator checks the temperature of the <something>” or*

*“the operator examines the exhaust system, checking the temperature of the <something>”*

#### *Investigate and Assess*

These 2 sound quite similar to each other, and imply a person doing the the investigation or assessment. *Investigate* sounds like “search for a reason or cause for something”, and *assess* sounds like “think about some complex information and then make a decision”.

If you say

*“...the controller investigates the reason for the failure”*

it sounds like either the controller is a person, or a super-intelligent computer or robot (if you ever saw HAL 9000 or the Terminator maybe you understand how scary that could be).

### 4. Conclusion

- If you use *determine* now, feel free to continue using it.
- If you prefer to use other words, use those different words.
- Don't forget the possibility of a double meaning if the context is not clear.