invention, in a case where the probability is lower than a predetermined determination threshold value, the selection unit omits processing of selecting the one element on the basis of a result of the model checking.

[0016]

According to a eighth aspect of the present invention, the validation processing method includes: a step of performing model checking on a model to be checked; a step of selecting, on the basis of a result of the model checking, one element among elements that have undergone a state change in a process leading to an unsafe event; and a step of performing model re-checking on a model to be checked which is obtained by excluding the one element.

[0017]

According to an ninth aspect of the present invention, a program causes a computer of a validation processing device to execute: a step of performing model checking on a model to be checked; a step of selecting, on the basis of a result of the model checking, one element among elements that have undergone a state change in a process leading to an unsafe event; and a step of performing model re-checking on a model to be checked which is obtained by excluding the one element.

[Advantageous Effects of Invention]

CLAIMS

1. A validation processing device comprising:

a processing unit that performs model checking on a model to be checked; and

a selection unit that selects, on the basis of a result of the model checking, one element among elements that have undergone a state change in a process leading to an unsafe event,

wherein the processing unit further performs model re-checking on a model to be checked which is obtained by excluding the one element.

2. The validation processing device according to claim 1, wherein in a case where the model to be checked has not led to the unsafe event in the model re-checking, the processing unit returns the one element to the model to be checked, and performs model re-checking on a model to be checked which is obtained by excluding an element, which is different from the one element, from the model to be checked.

3. The validation processing device according to claim 2, wherein in a case where the model to be checked has led to the unsafe event in the model re-checking, the processing unit does not return the one element to the model to be checked, and performs model re-checking on a model to be checked which is obtained by excluding an element, which is different from the one element, from the model to be checked.

4. The validation processing device according to claim 1,

wherein the processing unit performs the model re-checking within a range equal to or less than the number of transition steps leading up to the unsafe event specified in a first model checking for the model to be checked.

5. The validation processing device according to claim 1, further comprising a specification unit that specifies a shortest path from an element extracted on the basis of a result of the model re-checking to an element included in a definition of the unsafe event.

6. The validation processing device according to claim 1, further comprising a calculation unit that calculates a probability of leading the model to be checked to the unsafe event from an initial state, on the basis of a trouble occurrence probability defined for each element.

7. The validation processing device according to claim 6, wherein in a case where the probability is lower than a predetermined determination threshold value, the selection unit omits processing of selecting the one element on the basis of a result of the model checking.

8. A validation processing method comprising:

a step of performing model checking on a model to be checked;

a step of selecting, on the basis of a result of the model checking, one element among elements that have undergone a state change in a process leading to an unsafe event; and

a step of performing model re-checking on a model to be checked which is obtained by excluding the one element.

9. A non-transitory computer-readable medium that stores a program causing a computer of a validation processing device to execute:

a step of performing model checking on a model to be checked;

a step of selecting, on the basis of a result of the model checking, one element among elements that have undergone a state change in a process leading to an unsafe event; and

a step of performing model re-checking on a model to be checked which is obtained by excluding the one element.