

We claim :

1. A recipe configuration system configured to communicate with a recipe database and a plant database, the recipe configuration system comprising

a recipe procedure tool configured to:

display a plurality of operation stencils relevant to a level for selection,
wherein the level is a unit procedure,

identify, from the recipe database and the plant database, a hierarchical property for a plurality of tags;

retrieve, from the recipe database and the plant database, the identified hierarchical property for the plurality of tags; and

display the plurality of tags in a hierarchical order based on the retrieved hierarchical property;~~display a plurality of tags;~~

upon receipt of an input, select one of the plurality of operation stencils
and position the selected one of the plurality of operation stencils to a
drawing area, wherein the positioned operation stencil is a unit
procedure operation,

assign a predefined property to the unit procedure operation, and

upon receipt of an input, select ~~and move~~ one of the plurality of tags from a tag list and move the tag as selected to the drawing area;

a tag linking module configured to communicate with the recipe procedure tool,
and to:

detect the tag selected from the tag list;

detect the unit procedure operation located in the drawing area;

determine if the selected tag is within a predefined area of the unit
procedure operation, and

assign at least one predefined property and a category of the selected tag
to predefined properties of the unit procedure operation when it is
determined the selected tag is within the predefined area of the unit
procedure operation; and

a common block linking module configured to communicate with the recipe
procedure tool to:

determine if the unit procedure operation has a undefined property, and
 assign a formula from a recipe database to the unit procedure operation
 when it is determined that the unit procedure operation has a
 undefined property.

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2. The recipe configuration system in claim 1, wherein the predefined properties of
 the unit procedure operation assigned from the selected tag comprises operation name
 and operation type.

10 3. The recipe configuration system in claim 1, wherein the common block linking
 module is further configured to determine, at a predetermined interval, if the unit
 procedure operation has a undefined property.

15 4. The recipe configuration system in claim 1, wherein the recipe configuration
 system is further configured to communicate with a common block database, the
 common block database stores common blocks and common block items for
 configuring the formula, the common block linking module is further configured to:

20 identify, from the common block database, at least one common block or
 common block items for the formula based on the predefined properties of the
 unit procedure operation,
 retrieve, from the common block database, the identified at least common block
 or common block items, and
 assign the retrieved at least one common block or common block items of the
 25 formula to the unit procedure operation.

~~5. The recipe configuration system in claim 1, wherein the recipe configuration
 system is further configured to communicate with a plant database, wherein the recipe
 procedure tool is further configured to:~~

30 ~~identify, from the recipe database and the plant database, a hierarchical property
 for the plurality of tags;~~

~~retrieve, from the recipe database and the plant database, the identified hierarchical property for the plurality of tags; and~~

~~display the plurality of tags in a hierarchical order based on the retrieved hierarchical property.~~

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6.5. The recipe configuration system in claim 1 wherein the recipe ~~builder procedure~~ tool further comprises an equipment editor configured to:

update equipment and field devices; and

store the updated equipment and field devices to the recipe database.

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7.6. A recipe configuration method, performed in a recipe configuration system configured to communicate with a recipe database and a plant database, the recipe configuration method comprising:

displaying a plurality of operation stencils relevant to a level for selection,

15 wherein the level is a unit procedure;

~~displaying a plurality of tags;~~

identify, from the recipe database and the plant database, a hierarchical property for a plurality of tags;

retrieve, from the recipe database and the plant database, the identified hierarchical property for the plurality of tags; and

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display the plurality of tags in a hierarchical order based on the retrieved hierarchical property;

upon receipt of an input, selecting one of the plurality of operation stencils and

position the selected one of the plurality of operation stencils to a drawing

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area, the positioned operation stencil is a unit procedure operation;

assigning a predefined property to the unit procedure operation;

upon receipt of an input, selecting ~~and moving~~ one of the plurality of tags from a tag list and move the tag as selected to the drawing area;

detect the tag selected from the tag list;

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detect the unit procedure operation located in the drawing area;

determining if the selected tag is within a predefined area of the unit procedure operation;

assigning at least one predefined property and a category of the selected tag to predefined properties of the unit procedure operation when it is determined the selected tag is within the predefined area of the unit procedure operation; and

determining if the unit procedure operation has a undefined property; and assigning a formula from the recipe database to the positioned operation stencil when it is determined the unit procedure operation has a undefined property.

8.7. The recipe configuration method in claim 76, wherein the predefined properties of the unit procedure operation assigned from the selected tag comprises operation name and operation type.

9.8. The recipe configuration method in claim 76, wherein the recipe configuration system is further configured to communicate with a common block database, the common block database stores common blocks and common block items for configuring the formula, the recipe configuration method further comprises:

identifying at least one common block or common block items for the formula based on the predefined properties of the unit procedure operation, retrieving the identified at least one common block or common block items from the common block database, and assigning the retrieved at least one common block or common block items of the formula to the unit procedure operation.

10.9. The recipe configuration method in claim 78, further including storing the retrieved plurality of predefined common block and common block data in the recipe database.

11. The recipe configuration method in claim 7, wherein the recipe configuration system is further configured to communicate with a plant database, further comprising

identifying a hierarchical property for the plurality of tags from the recipe and the plant database;

retrieving the identified property for the plurality of tags from the recipe and the plant database; and

5 displaying the plurality of tags in a hierarchical order based on the retrieved hierarchical property.

12.10. A non-transitory computer readable medium that stores a computer program to be executed by a recipe configuration system configured to communicate with a recipe database and a plant database to perform a recipe configuration method, the recipe configuration system comprising a recipe procedure tool, the recipe configuration method comprising:

displaying a plurality of operation stencils relevant to a level for selection, wherein the level is a unit procedure;

15 ~~displaying a plurality of tags;~~identify, from the recipe database and the plant database, a hierarchical property for a plurality of tags;

retrieve, from the recipe database and the plant database, the identified hierarchical property for the plurality of tags; and

20 display the plurality of tags in a hierarchical order based on the retrieved hierarchical property;

upon receipt of an input, selecting one of the plurality of operation stencils and position the selected one of the plurality of operation stencils to a drawing area, the positioned operation stencil is a unit procedure operation;

assigning a predefined property to the unit procedure operation;

25 upon receipt of an input, ~~selecting and moving~~ one of the plurality of tags from a tag list and move the tag as selected to the drawing area;

detect the tag selected from the tag list;

detect the unit procedure operation located in the drawing area;

30 determining if the selected tag is within a predefined area of the unit procedure operation;

assigning at least one predefined property and a category of the selected tag to the unit procedure operation when it is determined that the selected tag is within the predefined area of the unit procedure operation; and
determining if the unit procedure operation has a undefined property;
5 assigning a formula from the recipe database to the positioned operation stencil when it is determined the unit procedure operation has a undefined property.

~~13.11.~~ The recipe configuration method in claim ~~11~~6, wherein the recipe configuration system is further configured to communicate with a common block database, the
10 common block database stores common blocks and common block items for configuring the formula, the recipe configuration method further comprises:

identifying at least one common block or common block items for the formula based on the predefined properties of the tag,
retrieving the identified at least one common block or common block items from
15 the common block database, and
assigning the retrieved at least one common block or common block items of the formula to the positioned operation stencil.

~~14.~~ The recipe configuration method in claim ~~11~~, wherein the recipe configuration system is further configured to communicate with a plant database, the recipe
20 configuration method further comprises:

identifying a hierarchical property for the plurality of tags from the recipe and the plant database;
retrieving the identified property for the plurality of tags from the recipe and the
25 plant database; and
displaying the plurality of tags in a hierarchical order based on the retrieved hierarchical property.