

CLAIMS

1. A computer-implemented method comprising:
 - (a) providing an application comprising a graphical user interface for constructing a visualization of an automation system, the automation system comprising a plurality of objects;
 - (b) forming, by the application, a first visualization control comprising a building block of the visualization of the automation system, wherein the first visualization control is associated with a first object in the plurality of objects;
 - (c) receiving the first object from an object storage, the first object comprising (i) a reference to a first visualization template, (ii) a plurality of properties associated with the first object, and (iii) a plurality of children of the first object, wherein the first visualization template comprises a generic form of the first object defining how the first object can be visually structured and configured;
 - (d) receiving the first visualization template referenced by the first object from a template storage;
 - (e) generating, by the application, a visualization of the first object by mapping the properties associated with the first object to the first visualization template;
 - (f) assigning, by the application, the visualization of the first object to the first visualization control;
 - (g) forming, by the application, a respective visualization control for each child of the first object, wherein each child of the first object automatically configures itself by:
 - requesting, by the visualization control for the child, a child object corresponding to the child from the object storage;
 - receiving the child object from the object storage, the child object comprising (i) a reference to a second visualization template and (ii) a plurality of properties associated with the child object; and
 - generating, by the application, a visualization of the child object by mapping the properties associated with the child object to the second visualization template;and
 - (h) placing the visualization control for each child of the first object in the first visualization control based on the first visualization template.

2. The method of claim 1, wherein the plurality of objects forms a hierarchy of the objects.
3. The method of claim 1, wherein the first visualization template comprises a plurality of parameters to which one or more of the properties of the first object are mapped.
4. The method of claim 3, wherein a particular type of a particular object comprises a location, a sensor, or a control.
5. The method of claim 1, wherein the first visualization control comprises metadata defining visual properties of the first visualization control.
6. The method of claim 1, further comprising assigning an automation control data source to the first visualization control.
7. The method of claim 1, wherein the first object comprises a location and the child objects comprise automation system assets at the location.
8. The method of claim 1, wherein the visualization of the automation system comprises a plurality of visualization controls generated based on respective objects and templates.
9. A system comprising:
 - at least one memory for storing computer-executable instructions;
 - at least one processing unit for executing the instructions, wherein execution of the instructions programs the at least one processing unit to perform operations comprising:
 - (a) providing an application comprising a graphical user interface for constructing a visualization of an automation system, the automation system comprising a plurality of objects;
 - (b) forming, by the application, a first visualization control comprising a building block of the visualization of the automation system, wherein the first visualization control is associated with a first object in the plurality of objects;
 - (c) receiving the first object from an object storage, the first object comprising
 - (i) a reference to a first visualization template, (ii) a plurality of properties associated with the first object, and (iii) a plurality of children of the first object, wherein the first

visualization template comprises a generic form of the first object defining how the first object can be visually structured and configured;

(d) receiving the first visualization template referenced by the first object from a template storage;

(e) generating, the application, a visualization of the first object by mapping the properties associated with the first object to the first visualization template;

(f) assigning, by the application, the visualization of the first object to the first visualization control;

(g) forming, by the application, a respective visualization control for each child of the first object, wherein each child of the first object automatically configures itself by:

requesting, by the visualization control for the child, a child object corresponding to the child from the object storage;

receiving the child object from the object storage, the child object comprising (i) a reference to a second visualization template and (ii) a plurality of properties associated with the child object; and

generating, by the application, a visualization of the child object by mapping the properties associated with the child object to the second visualization template; and

(h) placing the visualization control for each child of the first object in the first visualization control based on the first visualization template.

10. The system of claim 9, wherein the plurality of objects forms a hierarchy of the objects.

11. The system of claim 9, wherein the first visualization template comprises a plurality of parameters to which one or more of the properties of the first object are mapped.

12. The system of claim 11, wherein a particular type of a particular object comprises a location, a sensor, or a control.

13. The system of claim 9, wherein the first visualization control comprises metadata defining visual properties of the first visualization control.

14. The system of claim 9, wherein the operations further comprise assigning an automation control data source to the first visualization control.
15. The system of claim 9, wherein the first object comprises a location and the child objects comprise automation system assets at the location.
16. The system of claim 9, wherein the visualization of the automation system comprises a plurality of visualization controls generated based on respective objects and templates.