CLAIMS

1. A method of presenting an analysis of a machine included in an industrial facility, the method comprising:

generating a digital twin of the machine;

determining at least one property of the digital twin based on a simulation of an operation of the machine; and

generating a presentation of the industrial facility that includes a visualization of the digital twin and a visual indicator of the at least one property of the digital twin.

2. The method of claim 1, wherein the digital twin is based on at least one sensor input received by at least one sensor associated with the machine within the industrial facility.

3. The method of claim 1, wherein generating the digital twin further comprises:

determining a machine type of the machine; and

retrieving, from a digital twin library, a stored representation of digital twins of machines of the machine type.

4. The method of claim 1, wherein generating the digital twin further comprises:

retrieving, from a digital twin library, a stored representation of a base digital twin of the machine;

determining at least one feature of the machine; and

adjusting at least one feature of the digital twin based on the at least one feature of the machine.

5. The method of claim 1, wherein the simulation of the operation of the machine is based on a vibration generated by at least one moving part of the machine and detected by a vibration sensor.

6. The method of claim 1, wherein the presentation of the industrial facility is generated by a graphics engine, and the simulation of the operation of the machine is performed by a physics engine included in the graphics engine.

7. The method of claim 1, wherein the at least one property of the digital twin is based on a simulation of a second machine within the industrial facility.

8. The method of claim 1, wherein the at least one property of the digital twin is based on a simulation of an interaction during the operation between a first component of the machine and a second component of the machine.

9. The method of claim 1, wherein generating a presentation of the industrial facility further comprises rendering, by a game engine, a three-dimensional digital environment that corresponds to the industrial facility, and the visualization of the digital twin is based on a three-dimensional digital model of the machine rendered by the game engine.

10. The method of claim 1, wherein the visualization of the digital twin includes at least one of,

a visual indicator of a location of the at least one property,

a visual indicator of a measurement of the at least one property,

a visual indicator of a vibration associated with the at least one property,

a text description of the at least one property,

a visual indicator of a classification of the at least one property,

a media recording of a corresponding property of the machine,

a label associated with the at least one property,

a visual depiction of the operation of the machine in the industrial facility, or

a visual depiction of the simulation of the operation of the machine.

11. A system for presenting an analysis of a machine included in an industrial facility, the system comprising:

a processor; and

a memory storing instructions that, when executed by the processor, cause the system to,

generate a digital twin of the machine,

determine at least one property of the digital twin based on a simulation of an operation of the machine, and

generate a presentation of the industrial facility that includes a visualization of the digital twin and a visual indicator of the at least one property of the digital twin.

12. The system of claim 11, wherein the digital twin is based on at least one sensor input received by at least one sensor associated with the machine within the industrial facility.

13. The system of claim 11, wherein generating the digital twin further comprises:

determining a machine type of the machine; and

retrieving, from a digital twin library, a stored representation of digital twins of machines of the machine type.

14. The system of claim 11, wherein generating the digital twin further comprises:

retrieving, from a digital twin library, a stored representation of a base digital twin of the machine;

determining at least one feature of the machine; and

adjusting at least one feature of the digital twin based on the at least one feature of the machine.

15. The system of claim 11, wherein the simulation of the operation of the machine is based on a vibration generated by at least one moving part of the machine and detected by a vibration sensor.

16. The system of claim 11, wherein the presentation of the industrial facility is generated by a graphics engine, and the simulation of the operation of the machine is performed by a physics engine included in the graphics engine.

17. The system of claim 11, wherein the at least one property of the digital twin is based on a simulation of a second machine within the industrial facility.

18. The system of claim 11, wherein the at least one property of the digital twin is based on a simulation of an interaction during the operation between a first component of the machine and a second component of the machine.

19. The system of claim 11, wherein generating a presentation of the industrial facility further comprises rendering, by a game engine, a three-dimensional digital environment that corresponds to the industrial facility, and the visualization of the digital twin is based on a three-dimensional digital model of the machine rendered by the game engine.

20. The system of claim 11, wherein the visualization of the digital twin includes at least one of,

a visual indicator of a location of the at least one property,

a visual indicator of a measurement of the at least one property,

a visual indicator of a vibration associated with the at least one property,

a text description of the at least one property,

a visual indicator of a classification of the at least one property,

a media recording of a corresponding property of the machine,

a label associated with the at least one property,

a visual depiction of the operation of the machine in the industrial facility, or

a visual depiction of the simulation of the operation of the machine.

21. A non-transitory computer-readable storage medium storing instructions that, when executed by a processor, cause the processor to present an analysis of a machine included in an industrial facility, by carrying out a method according to any one of claims 1 to 10.