Description

Title of Invention

INFORMATION PROCESSING APPARATUS, INFORMATION PROCESSING METHOD, PROGRAM, AND INFORMATION PROCESSING SYSTEM

Technical Field

[0001]

The present ~~disclosure~~ invention relates to an information processing apparatus, an information processing method, a program, and an information processing system.

Background Art

[0002]

Techniques that allow information for mutual recognition between devices to be shared between devices are developed. A technique that exchanges information for mutual recognition between devices to be shared between devices is disclosed, for example, in Patent Literature 1 below.

Citation List

Patent Literature

[0003]

Patent Literature 1: JP 2007-129320A

Summary of Invention

Technical Problem

[0004]

As an example, when an existing technique that allows information for mutual recognition between devices to be shared between devices is employed, the information for mutual recognition between devices can be shared between devices, and thus processing can be performed in cooperation between devices. However, the above existing technique fails to implement, for example, "extension of a function of an apparatus as if a function of a device outside the apparatus were set as the function of the apparatus".

[0005]

In an embodiment of the present ~~disclosure~~ invention, there is provided a novel and improved information processing apparatus, information processing method, program, and information processing system, capable of achieving the function extension using a function of an external device.

Solution to Problem

[0006]

According to ~~the~~ a first aspect of the present ~~disclosure~~ invention, there is provided an information processing apparatus including: an acquisition control unit configured to acquire information on function extension from an external object, the information on the function extension including attribute information indicating a function of a device and connection information relating to a connection to the device; and a function control unit configured to ~~extend~~ add a function ~~of~~ to the information processing apparatus as a function of the information processing apparatus based on the acquired attribute information, connect to a device corresponding to the extended function based on the acquired connection information, and enable the extended function.

[0007]

According to ~~the~~ a second aspect of the present ~~disclosure~~ invention, there is provided an information processing method that is executed by an information processing apparatus, the information processing method including: a step of acquiring information on function extension from an external object, the information on the function extension including attribute information indicating a function of a device and connection information relating to a connection to the device; and a step of ~~extending~~ adding a function ~~of~~ to the information processing apparatus as a function of the information processing apparatus based on the acquired attribute information, connecting to a device corresponding to the extended function based on the acquired connection information, and enabling the extended function.

[0008]

According to ~~the~~ a third aspect of the present ~~disclosure~~ invention, there is provided a program for causing a computer to execute: a step of acquiring information on function extension from an external object, the information on the function extension including attribute information indicating a function of a device and connection information relating to

a connection to the device; and a step of ~~extending~~ adding a function ~~of~~ to the information processing apparatus as a function of the information processing apparatus based on the acquired attribute information, connecting to a device corresponding to the extended function based on the acquired connection information, and enabling the extended function.

[0009]

According to ~~the~~ a fourth aspect of the present ~~disclosure~~ invention, there is provided an information processing system including: an information processing apparatus; and an external object being an object outside the information processing apparatus. The information processing apparatus includes an acquisition control unit configured to acquire information on function extension from the external object, the information on the function extension including attribute information indicating a function of a device and connection information relating to a connection to the device, and a function control unit configured to ~~extend~~ add a function ~~of~~ to the information processing apparatus as a function of the information processing apparatus based on the acquired attribute information, connect to a device corresponding to the extended function based on the acquired connection information, and enable the extended function.

Advantageous Effects of Invention

[0010]

According to the embodiments of the present ~~disclosure~~ invention, it is possible to extend a function using a function of an external device.

[0011]

Note that the effects described above are not necessarily limited, and along with or instead of the effects, any effect set forth herein or other effects that can be expected from the present specification may be exhibited.

Brief Description of Drawings

[0012]

CLAIMS

~~Claim 1~~

1. An information processing apparatus comprising:

an acquisition control unit configured to acquire information on function extension from an external object, the information on the function extension including attribute information indicating a function of a device and connection information relating to a connection to the device; and

a function control unit configured to ~~extend~~ add a function ~~of~~ to the information processing apparatus as a function of the information processing apparatus based on the acquired attribute information, connect to a device corresponding to the extended function based on the acquired connection information, and enable the extended function.

~~Claim 2~~

2. The information processing apparatus according to claim 1,

wherein the function control unit extends the function of the information processing apparatus by setting a function indicated by the attribute information as the function of the information processing apparatus.

~~Claim 3~~

3. The information processing apparatus according to claim 1,

wherein the function control unit, when the attribute information and the connection information corresponding to each of a plurality of devices are acquired from the external object, extends the function of the information processing apparatus based on the acquired plurality of attribute information, connects to each of the devices corresponding to the extended function based on the acquired plurality of connection information, and enables the extended function.

~~Claim 4~~

4. The information processing apparatus according to claim 3,

wherein the function control unit, when functions indicated by each of the acquired plurality of attribute information include an overlapping function between devices, sets a priority level for each of devices corresponding to the overlapping function based on the

attribute information,

wherein the function control unit determines the attribute information used to extend the overlapping function based on the set priority level, and

wherein the function control unit extends the function of the information processing apparatus by setting a function indicated by the determined attribute information and a function that does not overlap between devices as the function of the information processing apparatus.

~~Claim 5~~

5. The information processing apparatus according to claim 3,

wherein the function control unit extends the function of the information processing apparatus by setting a function indicated by each of the acquired plurality of attribute information as the function of the information processing apparatus.

~~Claim 6~~

6. The information processing apparatus according to claim 1,

wherein the information on the function extension acquired by the acquisition control unit from the external object further includes spatial information indicating a condition of a space in which the function extension is performed,

wherein the function control unit determines a device corresponding to a function to be extended, based on the acquired spatial information and attribute information, and

wherein the function control unit extends the function of the information processing apparatus based on the attribute information corresponding to the determined device.

~~Claim 7~~

7. The information processing apparatus according to claim 6,

wherein the function control unit, when functions indicated by each of the acquired plurality of attribute information include an overlapping function between devices, sets a priority level for each of devices corresponding to the overlapping function based on the spatial information and the attribute information,

wherein the function control unit determines the attribute information used to extend the overlapping function based on the set priority level, and

wherein the function control unit extends the function of the information processing apparatus by setting a function indicated by the determined attribute information and a function that does not overlap between devices as the function of the information processing apparatus.

~~Claim 8~~

8. The information processing apparatus according to claim 1,

wherein the function control unit transmits function information indicating a function being enabled and identification information that allows the information processing apparatus to be identified to a service providing apparatus configured to provide a service.

~~Claim 9~~

9. The information processing apparatus according to claim 8,

wherein the function control unit, when the information on the function extension acquired by the acquisition control unit from the external object further includes spatial information indicating a condition of a space in which the function extension is performed, further transmits the acquired spatial information to the service providing apparatus.

~~Claim 10~~

10. The information processing apparatus according to claim 8,

wherein the function control unit performs a process using the function being enabled based on service information relating to the service, the service information being transmitted from the service providing apparatus.

~~Claim 11~~

11. The information processing apparatus according to claim 1,

wherein the information on the function extension acquired by the acquisition control unit from the external object further includes release information used to release the extended function, and

wherein the function control unit, when the release information is acquired, terminates a connection to the device corresponding to the extended function based on the acquired connection information, deletes the function indicated by the attribute information

from the function of the information processing apparatus based on the acquired attribute information, and disables the extended function.

~~Claim 12~~

12. The information processing apparatus according to claim 1,

wherein the acquisition control unit controls an acquisition device capable of wireless communication with the external object to acquire the information on the function extension from the external object through wireless communication.

~~Claim 13~~

13. The information processing apparatus according to claim 1,

wherein the acquisition control unit controls an acquisition device capable of capturing an image to acquire the information on the function extension from the external object by allowing the acquisition device to capture an image of the external object.

~~Claim 14~~

14. The information processing apparatus according to claim 1,

wherein the function control unit controls a communication device capable of wireless communication with a device corresponding to the extended function to connect the communication device to the device corresponding to the extended function by allowing the communication device to communicate wirelessly with the device corresponding to the extended function.

~~Claim 15~~

15. An information processing method that is executed by an information processing apparatus, the information processing method comprising:

a step of acquiring information on function extension from an external object, the information on the function extension including attribute information indicating a function of a device and connection information relating to a connection to the device; and

a step of ~~extending~~ adding a function ~~of~~ to the information processing apparatus as a function of the information processing apparatus based on the acquired attribute information, connecting to a device corresponding to the extended function based on the acquired

connection information, and enabling the extended function.

~~Claim 16~~

16. A program for causing a computer to execute:

a step of acquiring information on function extension from an external object, the information on the function extension including attribute information indicating a function of a device and connection information relating to a connection to the device; and

a step of ~~extending~~adding a function ~~of~~ to the information processing apparatus as a function of the information processing apparatus based on the acquired attribute information, connecting to a device corresponding to the extended function based on the acquired connection information, and enabling the extended function.

~~Claim 17~~

17. An information processing system comprising:

an information processing apparatus; and

an external object being an object outside the information processing apparatus,

wherein the information processing apparatus includes

an acquisition control unit configured to acquire information on function extension from the external object, the information on the function extension including attribute information indicating a function of a device and connection information relating to a connection to the device, and

a function control unit configured to ~~extend~~ add a function ~~of~~ to the information processing apparatus as a function of the information processing apparatus based on the acquired attribute information, connect to a device corresponding to the extended function based on the acquired connection information, and enable the extended function.