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Information technology – UPnP Device Architecture – Part 6-13: Heating, Ventilation and Air Conditioning Device Control Protocol – House Status Service

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FOREWORD

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The list of all currently available parts of the ISO/IEC 29341 series, under the general title *Universal plug and play (UPnP) architecture*, can be found on the IEC web site.

This International Standard has been approved by vote of the member bodies, and the voting results may be obtained from the address given on the second title page.

ORIGINAL UPNP DOCUMENTS
(informative)

Reference may be made in this document to original UPnP documents. These references are retained in order to maintain consistency between the specifications as published by ISO/IEC and by UPnP Implementers Corporation. The following table indicates the original UPnP document titles and the corresponding part of ISO/IEC 29341:

UPnP Document Title	ISO/IEC 29341 Part
UPnP Device Architecture 1.0	ISO/IEC 29341-1
UPnP Basic:1 Device	ISO/IEC 29341-2
UPnP AV Architecture:1	ISO/IEC 29341-3-1
UPnP MediaRenderer:1 Device	ISO/IEC 29341-3-2
UPnP MediaServer:1 Device	ISO/IEC 29341-3-3
UPnP AVTransport:1 Service	ISO/IEC 29341-3-10
UPnP ConnectionManager:1 Service	ISO/IEC 29341-3-11
UPnP ContentDirectory:1 Service	ISO/IEC 29341-3-12
UPnP RenderingControl:1 Service	ISO/IEC 29341-3-13
UPnP MediaRenderer:2 Device	ISO/IEC 29341-4-2
UPnP MediaServer:2 Device	ISO/IEC 29341-4-3
UPnP AV Datastructure Template:1	ISO/IEC 29341-4-4
UPnP AVTransport:2 Service	ISO/IEC 29341-4-10
UPnP ConnectionManager:2 Service	ISO/IEC 29341-4-11
UPnP ContentDirectory:2 Service	ISO/IEC 29341-4-12
UPnP RenderingControl:2 Service	ISO/IEC 29341-4-13
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UPnP DigitalSecurityCameraStillImage:1 Service	ISO/IEC 29341-5-12
UPnP HVAC_System:1 Device	ISO/IEC 29341-6-1
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UPnP Document Title	ISO/IEC 29341 Part
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UPnP SecurityConsole:1 Service	ISO/IEC 29341-13-11

1. Overview and Scope

This service definition is compliant with the UPnP Device Architecture version 1.0.

This service-type provides an indication about house occupancy status and operational mode. It is commonly used as a mechanism for influencing the state of Devices and/or Control Points depending upon whether people are in the house. Typical applications are: e.g. switching on or off lights, air-conditioning etc.

Occupancy status can be derived i) directly from an occupant via a user interface, or ii) indirectly by algorithms such as a calendar program, or iii) indirectly by heuristics that determine the status from subsystem or device activity. That is to say: this service type would be implemented in two types of occupancy "detector" devices:

- A physical switch (e.g. a home/away push button on a device).
- A "virtual" switch that uses some kind of algorithm or heuristics to work out if the house is occupied (e.g. a calendar or a predictive algorithm).

In case a) the physical detection device would incorporate this occupancy service, but in case b) the MMI of the device that contains the algorithm would incorporate this occupancy service.

This service is a “source” of UPnP event messages. Control Points that are interested to be updated about the occupancy state of the house should subscribe to receive events from this service type. (However, Control Points are also permitted to “poll” the service from time to time in order to enquire about the current occupancy state).

This service template does not address:

- Presence detection for security alarm purposes.
- Actual number of persons in the building (or building part) e.g. for demand controlled ventilation in (say) a conference room.

2. Service Modeling Definitions

2.1. Service Type

The following service type identifies a service that is compliant with this template:

urn:schemas-upnp-org:service:*HouseStatus:1*

2.2. State Variables

Table 1: State Variables

Variable Name	Req. or Opt.[1]	Data Type	Allowed Value [2]	Default Value [2]	Eng. Units
OccupancyState	R	string	Occupied, Unoccupied, Indeterminate	Occupied	none
ActivityLevel	O	string	See table 2	See table 3	none
DormancyLevel	O	string	See table 4	See table 5	none
Non-standard state variables implemented by an UPnP vendor go here.	*X*	*TBD*	*TBD*	*TBD*	*TBD*

1 R = Required, O = Optional, X = Non-standard.

2 Values listed in this column are required. To specify standard optional values or to delegate assignment of values to the vendor, you must reference a specific instance of an appropriate table below.

2.2.1. OccupancyState

This is a read only variable that represents the occupancy status of the house, whereby:

- **Occupied** = People in the house
- **Unoccupied** = No people in the house
- **Indeterminate** = The service is unable to determine if the house is occupied or not.

2.2.2. ActivityLevel

This is an optional read only variable that acts as a qualifier to provide an extra level of detail concerning the occupancy status of the house. It indicates the level of activity of the occupants. Whereby:

- **Regular** = Indicates that the house is in a neutral/normal state of occupancy. Note: ActivityLevel is optional, so in case of a service where ActivityLevel is NOT implemented, a Control Point should assume that the activity level is regular.
- **Asleep** = Means that although the house is occupied, the occupants are asleep – meaning that the degree of activity is lower than “Regular”. (example: this could be used to adjust the temperature or switch off lights).
- **HighActivity** = Means that the house is occupied with a degree of activity that is higher than “Regular” – e.g. for a party. (example: this could be used to increase the speed of a ventilation fan).