

Title	LegacyDevice を中心としたホームネットワークに関する研究
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Citation	
Issue Date	2003-03
Type	Thesis or Dissertation
Text version	author
URL	<a href="http://hdl.handle.net/10119/1695">http://hdl.handle.net/10119/1695</a>
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Description	Supervisor:丹 康雄, 情報科学研究科, 修士

# Research about the home network centering on LegacyDevice

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February 14, 2003

**Keywords:** home network, LegacyDevice, infrared rays, state machine, interlocking operation.

Various home-networking architecture against the background of the appearance of home electric appliances which offered high processing capability and the network connection function is proposed for the purpose of interoperation of home electric appliances.

In case the home network proposed is built to domestic, it is necessary to perform the total exchange and new wiring of home electric appliances.

Considering a price boost of the home electric appliances apparatus by functional addition, it is expected that LegacyDevice (which is home electric appliances without neither a network connection function nor advanced information processing capability) continues to exist in domestic.

On the other hand, many application protocols for carrying out network control of the LegacyDevice using infrared remote control are also proposed. However, LegacyDevice is correctly uncontrollable by the system which using these apprication and apprication protocol.

Because the apparatus control commands by the infrared signal are relative directions of operation not to absolute directions of operation but to the internal state of apparatus.

In order to control LegacyDevice correctly, it is necessary to grasp the internal state.

In this research, the system which enable interoperability with Legacy-Device is proposed.

The system which is proposed in this research constructed with three unit, center-unit which performs management and apparatus control of apparatus information unitary, control-unit which performs transmission and reception of an infrared signal and switching of AV cable, access-unit which is a UserInterface Device.

Management of the system to propose and apparatus information, transmission and reception of the center unit which performs apparatus control unitary, and an infrared signal, and analog In order to require from the control unit which switches AV cable, and a center unit It is constituted by three elements of the access unit which is user interface apparatus.

In addition, it realizes by using the television monitor which are a graphical user interface for inform the service which can offer a system to a user, and apparatus resources.

In order to treat LegacyDevice as apparatus resources, the information which apparatus has first must be described as digitized data, and the information must be managed as a system. Then, how to describe the function in which a deed and apparatus have abstraction of the function which LegacyDevice has as digitized data was defined.

Moreover, the technique for grasping the "internal state of apparatus" of changing with user operations arbitrarily was defined also in the information which apparatus has.

House electric appliances is caught as a state machine – capture of LegacyDevice control and an internal state is realized by arranging in a system the sensor which performs the capture and generation of an infrared signal which are an input to a state machine – the internal state which apparatus has is managed as digital information

Interoperation of apparatus is performed by mounting application which is interlocked with change of the internal state of each apparatus, and controls apparatus in a center unit. In case interlocking operation is performed, it is also necessary to establish the means for performing a user check. Then, the order of the real way of the announcement using the television monitor was defined.

In this research, the system to propose is implemented and checked oper-

ation of it, described the unsolvable problem with the composition element of this system, considered methods for the problem solving.