Research on coordinated service system of legacy device home network with sensor

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Recently, the information society advances, and the home electric appliance are connected with the network, and the home network is composed, and various services are being provided in recent years. Various home network standards of the home electric appliance are enacted, and the standardization is also advanced. However, when you construct the home network, exchange is needed from home electric appliances that have been used up to now to information appliance. Therefore, the load rests upon the user. Then, existing home electric appliances that are called legacy device is used on the home network, and the research to do management and the control of a present state of the home electric appliance is done. In the research, the legacy device can be controlled. The method perceives the infrared rays signal and manages the state of the legacy device. It controls with an infrared rays sending signal device of the study remote control.

Moreover, remote control of the home electric appliances becomes possible in using the home network system. In addition, the state of the home electric appliances can be managed with the home network system. Providing with coordinated service of home electric appliances is paid to attention by using it. Coordinated service is being provided with the button now. Neither coordinated service from the state change of home electric appliances nor coordinated service with a timer have been achieved. Home

electric appliances that can provide coordinated service is information appliances, it is not possible to offer it by the legacy device.

On the other hand, the sensor network to use information acquired from many sensors for the system is researched. The lighting operation, the temperature adjustment, and the crime prevention service are being provided from information on the movement of the person who acquires it by the sensor and the environment in the surrounding.

In this research, it has aimed to make the base of the system that provides coordinated service by using environmental information from the sensor and state information on the legacy device. Providing not only coordinated service with the button but also coordinated service from the state change and coordinated service from the timer becomes possible. Deciding use assumption home electric appliances, verifying coordinated service by the combination in that, and making the table designed coordinated service. Moreover, the coordinated service definition was necessary for the coordinated service offer, and, therefore, the coordinated service description language was made. In addition, the coordinated service parser to understand the language description was made, and the confirming the operation was done. Making the language can provide coordinated services other than the defined coordinated service. The user can describe service, and the service that exists in the user's preference be provided.

The made description language is based on the BNF notation. The description form is a description based on the parsing rule. The coordinated service parser that interprets the description does the lexical analysis of the described file. Afterwards, parsing that uses the result of the lexical analysis and uses the stack is done. The syntax tree is made if necessary as a result. The syntax tree is maintained in the system, and recycled.

The coordinated service system constructs it by using the legacy device home network system. The system has the item of the registration of home electric appliances and the state confirmation of registration home electric appliances and description of coordinated service and providing with coordinated service. They are executable respectively.

Confirming the operation of this research is confirmation of the description judgment processing of the coordinated service parser and confirmation of the offer processing of coordinated service of the home network

system. The description processing of the coordinated service parser is confirmed through some description examples. The confirmation of the coordinated service offer processing of the home network system is confirmed the state transition of home electric appliances happened because of an artificial command transmission.