

Title	ホームネットワークにおけるユーザインタフェースの 統一的なAPI提供に関する研究
Author(s)	中村, 太一
Citation	
Issue Date	2007-03
Type	Thesis or Dissertation
Text version	author
URL	<a href="http://hdl.handle.net/10119/3613">http://hdl.handle.net/10119/3613</a>
Rights	
Description	Supervisor:丹 康雄, 情報科学研究科, 修士

# Unity API Offer For User Interface In Home Network

Taichi Nakamura (510072)

School of Information Science,  
Japan Advanced Institute of Science and Technology

February 8, 2007

**Keywords:** Home Network , User Interface , API.

Recently, various of the home network standards are defined and construction of the home network environment is prepared year by year because of releasing the products which applies to the standard. New attempts of the home network are researched such as coordinated operation among home electric appliance and find the abnormal operation in unity control information. But in the future the home network environment will exist wide age group and user interfaces are used under such an environment will be used such as being used now, remote control, bottom and dial equip main body of home electric appliance etc, in a future, mobile machine Installing GUI like PDA, pointing and voice will be used as a user interface. And a lot of user interfaces are researched for practical use for example recognition gesture, network-robot equip sound recognition device and sensor that can feel person, so a lot of kinds of user interfaces will exist in the home network. When service offer to user in such an environment that has a lot of kinds of interfaces, it is expected that doesn't rely on specific user interface, it is offered for user that selects or combines in a lot of kinds user interface for situation of about user time or place. But it is large encumbrances for making the application concern about a lot of kinds interfaces exist.

The purpose of this research is defined unity API that can use user interface in the home network. The developer uses proposed API for application that can select user interface for dynamic and make application that doesn't

depend on user interface kinds. And, selected user interfaces for situation of about user time or place and providing the service combined in a lot of kinds user interfaces are realized. For that purpose, this research starts for investigating user interfaces in home network that is used in the ordinary home and researched for the future practical use. In addition, each of user interfaces is analyzed by the function and it is unified definition to treat information between user interface and application.

Output information type defines three different forms. First, it defined fundamental information input to concern about body parts when input of information. In the home network, information is often inputted by using a part of the body but it will have difference of accuracy each part of the body. So, it is defined by what part of body will be used. Second, simple information input is defined about request simple data for example "YES", "NO". Finally, it is defined as high degree information to be output by combining input information defined by fundamental input information and discrimination number and output information, etc.

In output information, four patterns are defined that Based on the abstraction level. The abstraction level is the lowest pattern that is used like the ordinary API. Oppositely, the abstraction level is the highest pattern is defined that pattern's output neither form nor device are specified and only information about the intention that want to be told the user is specified. And defined more two patterns that the abstraction level between these two patterns. Define output patterns mean the developer can choose the abstraction level of the output information and information can be output by using the user interface which is suitable for information and wants to be passed on as user's situation.

Finally, API is defined these unity definition and the utility of the proposal API is examined by the application that can be made by using the API. By using the proposal API, suitable UI for the user environment can be selected and a complex function can be achieved by using two or more UI. This function consists of a dynamic selection for UI and generality to many kinds of devices. And, compare what difference exists when the developer make the application provided the same service by using proposal API or not.