

## A VARIABLE CONTROL INTEGRATED SERVICE FRAMEWORK FOR MOBILE TV AND IPTV

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**ABSTRACT.** *Mobile video services have become more convenient for people's mobility. However, they are limited in the quality of the video. People have become accustomed to watching videos being played on bigger displays, such as televisions. IPTV is a system that provides digital television service by using Internet Protocol over a network infrastructure. Although the two kinds of video services are applied in different contexts, the processes of service transfer are less convenient when the user changes their environments. In this study, a "VCIS-TV" framework based on distributed processing is proposed, in which a mobile video service can be integrated into an IPTV service via context transfer and handheld devices can continue to serve people with a cooperative remote control service. This involves cooperation between different devices and services since these devices and services aid people in different contexts. In the VCIS-TV framework, people can easily make good use of handheld devices in a mobile video service, cooperative video services, and remote control services in a smart home. This is a seamless and integrated digital television service for a more convenient life.*

**Keywords:** Video service, Mobile service, IPTV, Mobile TV, Context transfer, Remote controller, Machine-to-machine communication

1. **Introduction.** Television (TV) is one of the most common entertainment devices in Home Information System. Internet Protocol television (IPTV) provides digital television services over Internet Protocol (IP) for residential and business users at a lower cost [13]. For residential users, IPTV is often provided in conjunction with Video on Demand (VOD) and may be bundled with Internet services such as Web access [17]. In Korea, Hanaro Telecom has 500,000 IPTV customers and PCCW Ltd. has 800,000 IPTV customers in Hong Kong. As of the end of June 2007, Chunghwa Telecom, Taiwan's incumbent Telco, has 333,000 IPTV subscribers and an annual growth rate in excess of 100 percent [18]. Moreover, the newest report of IMS Research considers that IPTV households are forecast to grow 52.2% annually through 2012 [19].

IPTV has two-way interactive communications between operators and users [13]. For this reason, the suitability of normal TV remote controllers is open to question. People habitually use remote controllers combined with TV that are provided by different manufacturers. This has resulted in compatibility problems. Normal remote controllers are developed for TV to change channels and regulate other functions, such as sound volume. Furthermore, TV remote controllers are input devices with fixed appearances and provided only with limited functions.