
User Event Analyzer for Bidirectional DMB Data Service

양방향 DMB 서비스를 위한 사용자 이벤트 분석 모듈

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Abstract Digital Multimedia Broadcasting (DMB) is a digital radio transmission system for sending multimedia such as radio, TV, and data casting to mobile devices. Nowadays, DMB specifications are the major standard for digital broadcasting and have been establishing for bidirectional service using MPEG-4 system. But there has been only some simple demonstrated system for this bidirectional services. In this paper, we introduce bidirectional DMB data service system that provides the interaction between the user and DMB server without any additional equipment such as web server. The proposed bidirectional DMB system can capture and send user interaction information and response through the existing DMB transmission channel, finally update the original contents. The action event from the user is the most important thing in developing the bidirectional DMB system. Therefore, capturing the event data from the user is the first step we need to do for the bidirectional DMB service. In this paper, we propose an interaction manager module for the user events. This system will extract the user events and make a plan to update the original scene with the server's reaction information.

Keyword: HDMB, Bidirectional Interaction, MPEG-4

1. Introduction

Digital Multimedia Broadcasting (DMB) [1], which has already launched in Korea, provides high quality multimedia contents service for many kinds of handheld device anytime and anywhere. It is typical example of the convergence between broadcasting and communication which provides various data services such as program information, product information, and traffic information as well as audio and video services on a mobile environment.

In this paper, we discuss the bidirectional data service in DMB system, while the earliest research was only focused in how to broadcast the multimedia contents to the mobile device, without considering the interaction between the user and the server[2-3]. It

is important because it can allow the user to give his/her own opinion or take part in generating new information with the received contents and transmit to the server. Then, finally the contents server and the broadcasting server can provide better and user adaptive service by referring the user event information through the bidirectional DMB system[4-7]. In this paper, we suggest a system architecture of the bidirectional DMB data service and describe how the user communicates with the DMB server and how the DMB server can response to the user's requirements or interaction. We set the focus on how to analyze and extract the bidirectional user interaction information from the user event.

The rest of this paper is organized as follows. We introduce and compare the three possible cases to