UNITED STATES PROVISIONAL PATENT APPLICATION

For

SWITCHED BROADCAST IMPLEMENTATION

Inventor:

Zeev Vax, Tel-Aviv, Israel

Prepared by:

BLAKELY SOKOLOFF TAYLOR & ZAFMAN LLP
12400 Wilshire Boulevard
Los Angeles, CA 90025-1026
(408) 947-8200

Attorney's Docket No.: 5079P036Z

General

[0001]   Switched Broadcast (SwB) is a new concept accepted enthusiastically especially by the Cable TV operators. Essentially, it offers broadcast programs on demand only. This way, precious bandwidth is saved. See US patent application number: 09/841579.

[0002]   In order for this to work, a SwB client is installed in the home viewer's set-top box (STB). Today's STBs have known channels and methods to communicate with the operators' head-ends. These communication lines are used to convey to the head-end which channel a viewer wants to watch, and to convey to the STB, what are the technical parameters of the desired program (such as frequency, program number, etc.). These communication lines have limited bandwidth. Therefore there is a need to reduce the amount of traffic on them. Another problem is that viewers sometimes close their television sets but leave the STB on. This way, the head-end doesn't know that a viewer has stopped watching the desired program. This document provides a few methods to overcome these and other problems.

Implementation methods

[0003]   In order to reduce communication between the multitude of STBs and the head-end, the head-end periodically send to the STB a list of currently available programs and their parameters. Occasionally, the head-end also sends update messages of this table. This way, if the program is available, the STB doesn't need to request it specifically from the head-end.

[0004]   Programs may sometimes move to a "regular" broadcast mode based on automatic policy based mechanisms. This can happen only on individual service groups. At different times, these programs can return to be switched broadcast programs.

[0005]   Viewer behavior is modeled constantly. This way, the system can decide that it is highly likely that a program being broadcast is actually not viewed by anyone. It can remove this program and free bandwidth for other programs. In order to eliminate mistakes, viewers who are watching these programs may receive a warning prior to the removal of the program. If none of them respond within a certain period, the program will be removed.

[0006]   In order to reduce tuning times, more popular programs may be broadcast when there is available bandwidth even if nobody requested them. Eventually, if the popularity of these programs continues to increase, they may move out of the SwB pool and into the regular broadcast pool.

[0007]   It is very important to avoid cases where viewers can watch incorrect content (such as adult content). This can be avoided by the SwB system if it allocates to the different programs fixed and unique parameters such as program numbers and PIDs.

[0008]   Since most programs are encrypted, they cannot be RateShaped at the edge. However, there is no need to set to each program a fixed constant bit rate. There may be some pre-defined encoding levels used.