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— *as to the identity of the inventor (Rule 4.17(i))*

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

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(54) Title: AN INTEGRATED, SECURED, SWIFT, SCALABLE AND RESOURCE CONSERVING SYSTEM TO DISTRIBUTE DIGITAL MEDIA CONTENT CLUBBED WITH TAILORED & VICINITY BASED BILLBOARD BY UNIQUE FUSION OF HYBRIDIZED SYSTEM OF PROPRIETARY HARDWARE TO A TELEVISION CENTRE VIA CONGLOMERATION OF GEOGRAPHICAL EMISSARY

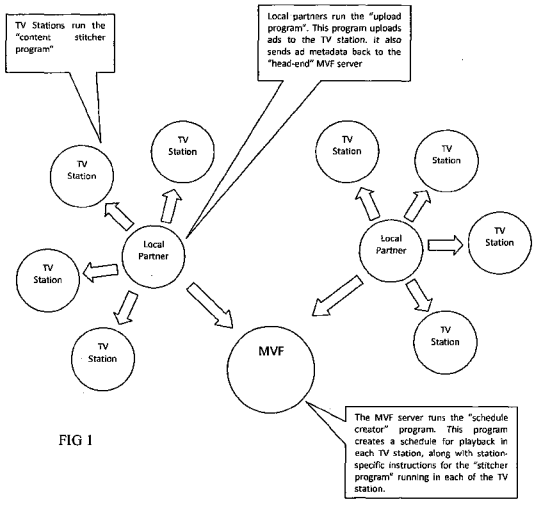

FIG 1

(57) Abstract: A system for distribution of digital media content with advertisements locally suited by Unique Fusion of Hybridized System of Proprietary Hardware to a Television Centre *via* Conglomeration of Geographical Emissary.

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Introduction

Conventionally, broadcasting of the media in the television market comprises of purchase of a frequency and associated brand of a legally permitted satellite channel in a given nation.

Based upon this choice, the broadcaster compiles the chosen media content and broadcasts it to the network of several television station(s) spread across the length and breadth of the nation. The television station further broadcast this content which is subsequently purchased / free and watched by the respective television viewer at his premises either directly or through combination of set top box and dish system.

Spectators enjoy the benefit of viewing the desirable media content at minimal cost. This is possible as the channel proprietor cross subsidized the media content due to the revenue generated by advertisements which are broadcasted before and after the various programs on that channel. Depending upon the popularity of the program, the prefix and suffix time slots or prime time viewing slots yields huge revenue to the channel owners. It too benefits manufacturer or service provides because Television being one of the most impacting and economical media of advertising to reach nationwide masses. It creates awareness of product / service amongst the viewers. Subsequently, it influences purchase decision of the multiple viewers transformed into prospective customers culminating to build a brand loyalty brigade.

Technological Limitations

The aforesaid discussed mode of transmission of media and billboard content has limitations specifically observing the current trend of the migration of the media content from the conventional formats to high definition digital format. The new digital format which is of superior audio-visual quality e.g. MPEG-4, High Definition (HD), being larger in bit size occupies more space on media server. Moreover, it overloads the whole transmission network leading to numerous problems such as bandwidth starvation, slow data transfer, non-continuity in media files. Thus in spite of high

payment, the viewer looses the advantage & pleasure of watching the high definition digital media content.

Also the central media server at the channel broadcasting centre finds difficulty in transmitting heavily animated, graphically illustrated short duration but large bit size advertisements contents (which are beamed along with the high definition digital media content).

Moreover, by default the tail end viewer is always interested in watching the media content which is popular national wide or of his choice but he will always prefers advertisement content relevant to availability of those products and services in his current vicinity.

Thus in the given scenario, the advertisement & media contents are independently procured nationwide, but compiled centrally and again

redistributed nationally through the resource starving system by the respective channel to television station(s) which further take it to tail end audience.

Invention

In order to overcome the drawbacks associated with the aforesaid mode of simultaneous transmission of media and advertisement content, inventors have come out with a ground breaking technique. *With this the spectators will be able to watch/hear the high definition audiovisual media and local advertisement content without paying any additional overhead and sacrificing the content quality.*
The present invention is a method / system comprising of an Integrated, Secured, Swift, Scalable and Resource Conserving System to Distribute Digital Media Content clubbed with Tailored & Vicinity Based Billboard by Unique Fusion of Hybridized System of Proprietary Hardware to a Television Centre *via* Conglomeration of Geographical Emissary.

Methodology

The invention is based on the principle of compiling library of encoded high definition media content from various resources along with only metadata of the region specific advertisement. Subsequently these together are transmitted over seamlessly in the form of stitch file through the Digital Video Broadcast (DVB) mode to nationwide network of television station(s).

To achieve this

(1) Only file based transmission is all that is required

(2) No live video is needed.

(3) No playback capability is required either;

(4) Since files are wrapped Material eXchange Format (MXF) proprietary server e.g. Grassvalley can play them out

In order to avoid bidirectional flow of the advertisement traffic, a bunch of region specific channel partners (christened as "Geographical Emissary") across the country can deal with local advertisements and not all advertisements need to be sent to the central channel server e.g. MFN.

For encoding the invention makes use both MPEG2 as well as H.264; both in Standard Definition (SD) and High Definition (HD).

The inventors propose to scale the operation from the initial 50 TV station sites to 1000 sites across the nation by appropriately designed compatible, robust architecture.

Invention permits to have a window of 48 hours which will be available before show time.

Illustration & Description

The Figure 1 shows the proposed Architecture for a Channel e.g. MFN

Topology of Top Level Architecture

The digitalization of a movie or a programme for viewing needs the compression and
conversion of available media file into digital form so as to enable fast transmission over available bandwidth to reach a subscriber / viewer.

In the present invention a "Hybrid" system comprising of Digital Video Broadcast (DVB) over which the program content is sent out to each TV station and Internet Protocol (IP) Internet for the advertisements is used .

In the present invention each "Local Channel Partner (LCP)" will have a server running an "Upload Program". This program will allow the user to create an "Advertisement Package". The program will also allow him to "upload" the package. As part of the upload action, it will upload selected advertisements over IP (internet) to the TV station, and also create and upload (again over the internet) a corresponding file containing ad content specific metadata to the channel e.g. MFN head-end central server. This will let the MFN server know that an advertisement of such type exists, and has been uploaded to the specified TV station. The MFN server runs a "Schedule Creator" application. This allows the MFN personnel to create "stitch instructions" to stitch together a TV station specific "Schedule" comprising of the "program" along with "advertisements" for each TV station. The metadata files received from the "Local Channel Partners (LCP)" will permit creation of such "Stitch Instructions" in eXtended Marked up Language (XML) format of tiny size. MFN will then upload the "Program" to the chosen uplink service provider e.g. Hughes, along with a set of "stitch instruction" files, targeted one per TV station, for broadcast to TV stations.

Servers in the TV stations will receive the "program files, along with "stitch instructions" targeted for themselves over DVB. Advertisements have already been uploaded by "local channel partners" over IP. Each TV station will then run a "Stitcher program",

that will execute "stitch instructions" provided to it to stitch together a "schedule" (in the Material Exchange Formt - MXF file), comprising of the "program" as well as "advertisements" as specified in the "instructions". The mapping of the suffix and prefix advertisements before and after the program is achieved using these set of instructions.

The architecture calls for use of in house designed and customised software equivalent to e.g. "EPD-2" software from Hughes, for actual "transport" of the "program" as well as "stitch instruction" content. *Digital Video Broadcast – Satellite Second Generation* (DVB-S2) would work the best allowing for significant reduction in retransmissions. Since it will be one DVB-S2 setup per TV station (as against consumer) cost overhead will be a minimal.

According to the invention simulation based prediction, present calculations shows channel e.g. MFN will need something like 9 hours to upload the "program" content to the Hughes uplink site over IP. Each "Local Channel Partner" uploads "advertisements" directly to the targeted TV station over IP, eliminating redundant transmission of data.

Further since advertisements are smaller in size, sending them over internet will not pose major problems. The time to download the "program" into individual TV stations assuming a satellite bandwidth of 8 MBits/Second, will be about 6 hours.

Thus this invention leads to conservation of almost 33% of the overall time inventory of each channel's for transmission of an equivalent combination of media and advertisement to the tail end spectators without sacrificing the content quality and additional cost.

Effective utilization of the thus conserved nationwide time inventory of all the channels put together can lead to additional advertisement revenue which will further subsidise program, program creators may be handsomely rewarded or more programs can be added to the vacant slots generated due to the technological edge.

Most viewers look forward for the aforesaid infotainment which even helps local industries to push forward their product / services minimizing logistics and leading to effective utilization of supply chain network within a small region.The system is hence unique in terms of speed, scalability and security

The proposed solution is innovative in its economically integrated resource conserving engine offering alternative and feature rich, value added flexible infotainment solution to channel operators, advertisers, hardware vendors and viewers leading to more employment, superior quality entertainment and dissipation of knowledge / awareness about good & services in vicinity.

We Claim:

1 A system for

receiving Media content
receiving advertisement content
running a upload program at each "Local Channel Partner (LCP)" end
creating an advertisement package using the uploaded program
creating a schedule creator application to enable the creation of stitch instructions to incorporate the media content with the local intended advertisement
sending the schedule creator applications to the TV stations where the program files containing the media content with stitch instructions are received over DVB
running of the stitch instructions at the TV station to execute stitch instructions of the advertisement with the media content for broadcasting

2 The system as in claim 1 wherein the mapping of the suffix and prefix advertisements before and after the program is achieved using set of instructions.

3 The system as in claim 1 where the LCP has server at its end for uploading program

4 The system as in claim 1 where the creation of stitch instructions is manually done by human means

5 The system as in claim 1 wherein identification of local advertisement content is manually for set TV stations.

6 The system as in claim is wheren identical media & region or person specific advertisement contents will be deliverable on mobile network to handsets or any other futuristic digital display device.

7. The system as in claim 1 wherein encrypted, encoded and watermarked media contents are transmitted thus discouraging piracy.

8. The system as in claim 1 having a head-end program comprising of server and client software.

9 The system as in claim 1 and 8 wherein the software facilitates delivery of the customized and localized advertisement content w.r.t. geographical location of the proprietary hardware such as set up box or a built in electronic embedded hardware within a television or any other media viewing device.

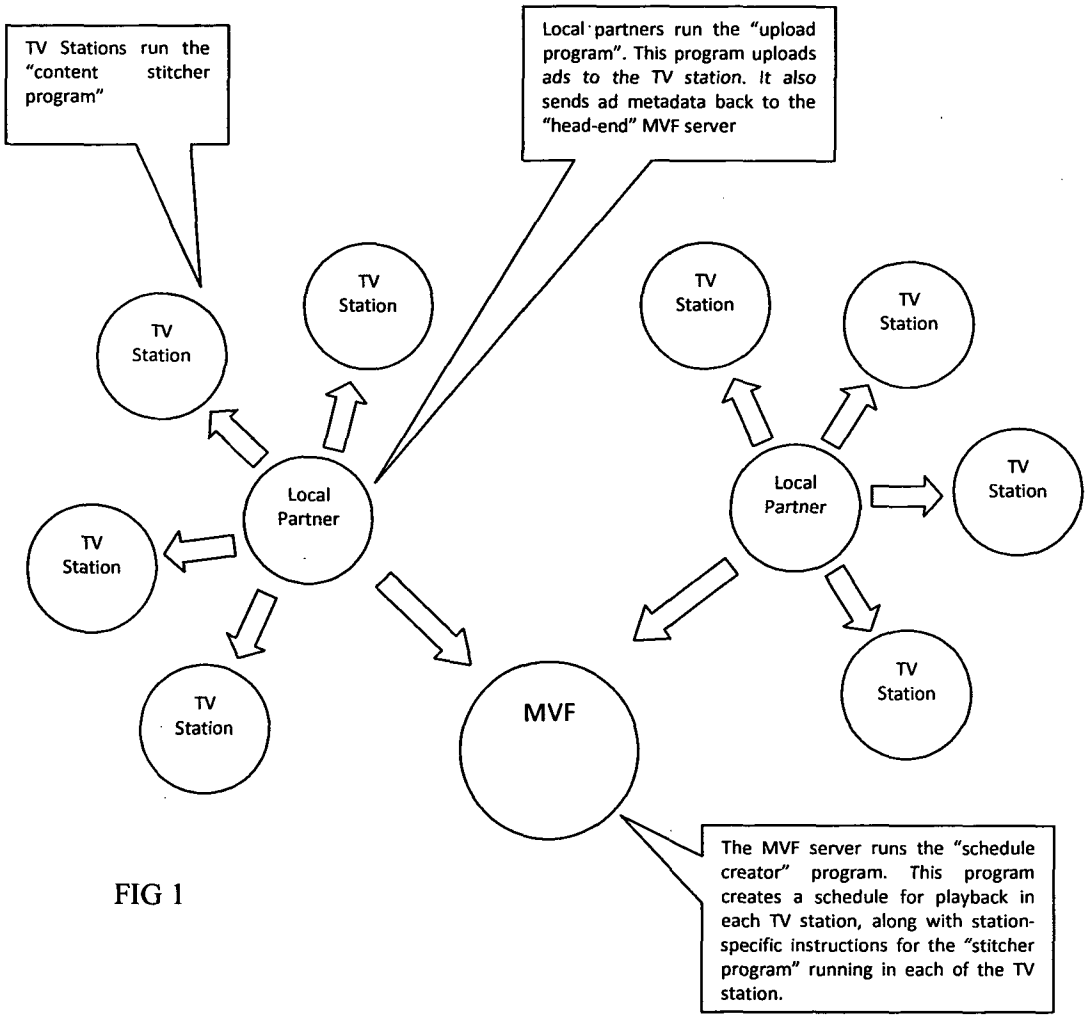
TV Stations run the "content stitcher program"
Local partners run the "upload program". This program uploads ads to the TV station. It also sends ad metadata back to the "head-end" MVF server
TV Station
TV Station
TV Station
TV Station
TV Station
TV Station
TV Station
TV Station
Local Partner
Local Partner
MVF
The MVF server runs the "schedule creator" program. This program creates a schedule for playback in each TV station, along with station-specific instructions for the "stitcher program" running in each of the TV station.

FIG 1