EXHIBIT 24

EXHIBIT
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Assignee:	HERNANDEZ MONDRAGON EDWIN A
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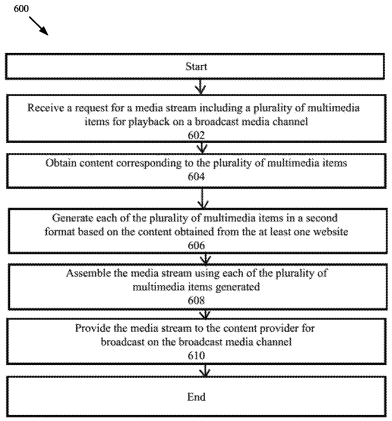

Abstract: Systems, methods, and computer-readable media for delivering multimedia content from the cloud to cable operators are disclosed. A device located at the cable headend or implemented in the cloud can receive a request for at least one media stream for playback on a broadcast media channel. Content corresponding to a plurality of multimedia files in the media stream can be obtained from the internet or a cloud based service. The content can be used to generate the multimedia files in a format that is compatible with the cable operator. The multimedia files can be used to assemble the at least one media stream which can be provided to the cable operator for broadcast on the broadcast media channel.

Claims:

1	A computer-implemented method comprising:	The software used by UbiquiCAST are computer implemented methods.
	[a] receiving, from a content provider, a request for at least one media stream for playback on a broadcast media channel, wherein the at least one media stream includes a plurality of multimedia items of different types;	As shown at EGLA-TRELLO-00001, the content provider contains at least one media file, as shown the playlist is GX45_NT.xml. Each entry in the playlist is a reference to a file in AC3 format at 96Kbps or 128Kbps as shown at EGLA-TRELLO-00475. As shown at EGLA-TRELLO-000497 the Audio (Program Identifier) are loaded from AWS or other servers. The OSE2 captures that were made and available via FTP at EGLA-TRELLO-000513 the AC3_192K_100ch_OSE2_144K.ts is the file with audio AC3 and 192Kbps audio. Additionally, EGLA-TRELLO-000453 shows how the content downloaded was for 24hrs. A plurality of media assets is shown by “downloading playlists” as depicted by EGLA-TRELLO-00481. Including album covers and other multimedia assets (e.g. EGLA-TRELLO-000570) or EGLA-TRELLO-000588 where the */song/L_2129124/showCoverORgenericCover/size_103_574.jpg* is retrieved.

	[b] obtaining content corresponding to the plurality of multimedia items from at least one source offering the content in at least one first format;	The content is downloaded in a 1st format, for example suing the com.stingray.galaxieclient.download.mediafile.MediaFileDownloadStrategy as in EGLA-TRELLO-00494. As shown at EGLA-TRELLO-000495 multiple formats are used, eg. H.264, FLAC, Mp2, and others. The 1st format could be SD (Standard definition or HD (High Definition) or any other formats in use including MPEG2VIDEO and H.264. (EGLA-TRELLO-000129)
	[c] rendering a web page by a browser using the content;	In the MC-EGLA-000033 indicates the use of an HTML "video specification" that needs to be rendered by a browser. Indeed, the html is stored with PNG files, as shown at EGLA-TRELLO-000569 all items stored. Including, EGLA-TRELLO-00572 shows the website www.galaxie.ca and the URI playerAPI/operator/operatorList?t=…. With ah HTTP Response of 200, and JSEESIONID. Therefore a browser uses a cookie, as shown SET-COOKIE. For example the link http://mediafile.galaxie.ca/data/000/050/200/000050200610 still provides a cover, when rendered by a browser. Additionally, the url http://covers.galaxie.ca/stong/G:435275/001/showCoveronGenericCover/... Similarly, at EGLA-TRELLO-000632 at 2015-10-08 the Ads URL was not open by the [MediaGenerator] module, which is part of GalaxieStillPicGenerator. As shown at EGLA-TRELLO-000594, a Grails servers is used to serve the files hence a browser is required to retrieve them.

	[d] generating a temporal sequence of screen captures of the rendered web page, where each screen capture defines all the content of the web page at a given time, and at least two adjacent screen captures illustrate a dynamic change of at least a portion of the content over time;	The GalaxieStillPicGenerator captures screens that includes a “Logo File”, “Ads URL” to generate a /data/video_realtime/0161735.tar file at EGLA-TRELLO-000632. As shown also at EGLA-TRELLO-000648 the class <SimpleVideoLoader> contains a videopath as /data/video_linear/AV_MP2_15K and pointing to the ffmpeg-path with MPEG2VIDEO encoding. The EGLA-TRELLO-000484. Shows that “Available Generators: 0, wait Time: 00:000:18:232595, Gen Time: 00:00:08:1241410” Smilarly, at EGLA-TRELLO-000494 as shown the MediaDownloader failed with /data/video/linear/AV_30_MP2_12M/amb2117908.m2v. The “AudioEngine no playout since Oct 6” ticket indicates that “GalaxieStillPicGenerator” threw an error when “Generating new /data/video_realtime/0161735.tar” The same GalaxieStillPicGenerator insinuates that “Still Picts” are captured from the screens rendered and then passed to the AudioEngineand StillPic Generator as shown at MC-EGLA-000336 which is sent via RAM. Dr. Shamos’s (Stingray’s expert testified) that: “if the Galaxie StillPic Generator deposits data in RAM and Ubiquicast audio engine retrieves it from RAM, there is no transmission” The “Data Packets” as depicted by the order indicates that “the data packets between the Audio Engine and Still Pic Generator because …” which means that the HTML is passed to the Still Pic Generator and the Audio engine.

	[e] assembling the at least one media stream using the temporal sequence of screen captures; and	The function "GalaxieAudioEngine" contains the Multiplexer as shown at line 2016-02-04 08:52:00 at EGLA-TRELLO-000488. The audio engine and the temporal sequence of screen captures are assembled to geneate a /data/video output. AS shown by GalaxieStillPicGenerator at EGLA-TRELLO-000515 by assembling the asset, which in this case an INVALID_TRACK_ERROR message is presented as part of the AudioEngine. The StillPic Generator log, shows that an error occurs when the MediaGenerator cannot find the "Logo file" and the "Ads URL". The UbiquiCAst v4.3.3. executes AudioEngine as a service and the RPM for the software is located at EGLA-TRELLO-000374. The proper name is GalaxieAudioEngien as located in the Ubiquicast at /opt/GalaxieAudioEngine at EGLA-TRELLO-000461. The multiplexer module as part of GalaxieAudioEngine shows that assembling the "at least one media stream" at EGLA-TRELLO-000488 *2016-02-04 08:52:00: [ERROR] bin/GalaxieAudioEngine : Multiplexer::StopWorking()+0x47* *2016-02-04 08:52:00: [ERROR] bin/GalaxieAudioEngine : Multiplexer::StartWorking()+0x2a7* *2016-02-04 08:52:00: [ERROR] bin/GalaxieAudioEngine : Chain::StartWorking()+0x4e* *2016-02-04 08:52:00: [ERROR] bin/GalaxieAudioEngine : MainController::StartChains()+0x78* *2016-02-04 08:52:00: [ERROR] bin/GalaxieAudioEngine : MainController::Start()+0x9* *2016-02-04 08:52:00: [ERROR] bin/GalaxieAudioEngine : GalaxieAudioEngine::Start()+0x65* *2016-02-04 08:52:00: [ERROR] bin/GalaxieAudioEngine : main()+0x1f* As shown in EGLA-TRELLO-000384 shows how the generation.stillPicStrategyClassName=*com.stingray.galaxie.stillpic.impl.StillPic DrawerFFmpegStrategy…..*
	[f] providing the at least one media stream to the content provider for broadcast on the broadcast media channel.	The Ubiquicast generate a /data/fina/188/18882328 file for example with a PID and PCT, as part of the mediafile_metadata field with uri, as shown at EGLA-TERROR-000497. The use of PID and PMT is the use of a Transport Stream (TS) that can be broadcasted to the cable tv network. As shown at EGLA-TRELLO-00050 the Multip Program Transport Stream can be used with a Multicast IP Address 239.51.100.4:1234 with AAC audio at 128Kbps, which is the configuration used for OSE. For OSE2, 100 channels + ambience are confirued using the Multicast Addresses and ports 225.11.0.10 and 11010 as shown at EGLA-TRELLO-000066. A similar configuration at EGLA-TRELLO-000081 shows a multicast IP at 239.19.23.4:5000 And other examples at EGLA-TRELLO-000382. 52 SPTS for OSE2 are shown at EGLA-TRELLO-000454.
2	The method of claim 1, wherein the obtaining comprises:	

	retrieving, for each of the plurality of multimedia items, at least one audio file corresponding to an audio component of the multimedia item and a plurality of screen captures corresponding to a video component of the multimedia item.	By retrieving the audio file, or TRACK as shown at EGLA-TRELLO-000497. EGLA-TRELLO-000515. Many citates at EGLA-TRELLO-0000158 as "Song Queue Alarm" Or song queue empty at EGLA-TRELLO-000516. At EGLA-TRELLO-000629 shows how the INVALID_TRACK_ERROR occurs and the FlacDecoder (Flac is an audio engine). The configuration templates retrieve an audio file as shown by EGLA-TRELL-000545 as "Audio+OSE2 MPEG-2+data" for example. As shown at EGLA-TRELLO-000548 show an error via "Audio PID underrun cause by corrupted audio asset" the asset is retrieved from the uri /data/final/188/18882328 for example. At least one audio file as shown at EGLA-TRELLO-000475, as the ticket says "Audio Codec should be AC3 96Kbs or 128Kbps, Stereo" Similarly, EGLA-TRELLO-000476 shows how audio MPEG 160Kbps. In the error message as shown at EGLA-TRELLO-0000482 shows how the PID=651 and Audio Buffer which indicates the use of an audio file.
3	The method of claim 2, wherein the generating comprises:	
	combining the plurality of screen captures and the at least one audio file to create each of the plurality of multimedia items.	Once the screens are captured and retrieved, a song is played with the screen with an Artist Name and Title as EGLA-TRELLO-000588 *[PLAYING] <Entry Event="12" Type="Playing" Category="020" Id="1123" Title="Veinte anos" Artist="Buena Vista* *[NEXT] <Entry Event="13" Type="Not Played" Category="M17" Id="1372" Title="Eres Mi Cancion" Artist="Rubén*
4	The method of claim 2, wherein the retrieving of the plurality of screen captures comprises obtaining the plurality of screen captures from a playback of a video on the at least one webpage.	The generated output is stored at /data/video_realtime/… that corresponds to a webpage where the artist album, title, and backgrounds are stored (EGLA-TRELLO-000632).
5	The method of claim 4, wherein the combining of the plurality of screen captures comprises metadata corresponding to at least one of a song title, an artist, and a music genre.	The logs indicate that "TTA" are stored including category or genre, title, and artist (EGLA-TRELLO-000524). *<Entry Event="11" Type="Played" Category="209" Id="1377" Title="Sorry" Artist="Justin Bieber" Album="Pur* *<Entry Event="12" Type="Playing" Category="204" Id="5537" Title="This Could Be Love " Artist="Borgeous &* *<Entry Event="13" Type="Not Played" Category="212" Id="9127" Title="Only 1" Artist="The Aston Shuffle fe…>*
6	The method of claim 1, further comprising:	

	identifying the at least one webpage based on a channel identifier associated with the broadcast media channel.	A POSITA will know that a webpage has to exists that loads all the coverpages, and TTA information retrieved from the metadata.
7	The method of claim 1, further comprising:	
	querying the content provider to determine the second format, wherein the second format corresponds to a Moving Picture Experts Group (MPEG) format.	MPEG2Video format and MPEG Frames are used. Service ID, PMT and Audio PID are part of the MPEG standard. See EGLA-TRELLO-000547. EGLA-TRELLO-000548, EGLA-TRELLO-000551, EGLA-TRELLO-000557. EGLA-TRELLO-000635, EGLA-TRELLO-000642
8	The method of claim 3, further comprising:	
	[a] detecting a change at the at least one webpage corresponding to at least one of the plurality of multimedia items;	The detection occurs when switching from one song to the next, as the page then switches the “Next” being played to be the “Playing” and updates the “Next” song to play. See 10[e] of the ‘441 Patent. This occurs in the UbiquiCast by two ways: • As the playlist changes, all the assets can be regenerated using the GalaxieStillPicGenerator, • As the next song is set and the cache does not have the contents, GalaxieStillPicGenerator will generate the new assets for new songs. See claims 10[e], 10[c] and Claim 1[e] of the ‘441 Patent .

	[b] in response to detecting the change, retrieving a new plurality of screen captures from the at least one webpage for the at least one of the plurality of multimedia items; and	In response to AmazonSQS messages, then follows to download the cover page, Title, Artist and other metadata. As shown at EGLA-TRELLO-000588. Upon the Playlist switches from Id=1123 to 1372, then new Covers are downloaded either from the cache or from the web as shown at EGLA-TRELLO-000582 As such, the webpage with the Ads URL, logos, and others is regenerated. *This was seen today across all servers at the same time:* *{code}* *[ERROR] Cache - internal error: expected to get a state from key [/song/L 2129124/showCoverORgenericCover/size_103_574.jpg]* *[ERROR] Cache - internal error: expected to get a state from key [/song/L 1835012/showCoverORgenericCover/size_103_574.jpg]* *{code}* *Below is the snippet from that time:* *{code}* *2016-05-20 07 24 30,837 INFO [SQSMetadataPush] - [014] Push success* *2016-05-20 07 24 30,925 INFO [SQSMetadataPush] - [189] Pushing file to SQS: /data/metadata/GX189_NT.xml* *<Playlist DeviceId="accesscommunication1" FileName="GX189_NT.xml" Now="Fri May 20 07 24 30 2016" TimezoneId="America/Regina">* *2016-05-20 07 24 31,053 INFO [SQSMetadataPush] - [189] Push success* *2016-05-20 07 24 31,059 INFO [SQSMetadataPush] - [042] Pushing file to SQS: /data/metadata/GX42_NT.xml* *<Playlist DeviceId="accesscommunication1" FileName="GX42_NT.xml" Now="Fri May 20 07 24 31 2016" TimezoneId="America/Regina">* *[PLAYING] <Entry Event="12" Type="Playing" Category="020" Id="1123" Title="Veinte anos" Artist="Buena Vista* *[NEXT] <Entry Event="13" Type="Not Played" Category="M17" Id="1372" Title="Eres Mi Cancion" Artist="Rubén*

	[c] reassembling the at least one of the plurality of multimedia items using the new plurality of screen captures to yield an updated multimedia item.	Hence, by updating the new page the GalaxieAudioEngine receives the images from GalaxieStillPicGenerator and multiplexes the new video stream at /data/video_realtime/* for example. As shown at EGLA-TRELLO-000632. *AudioEngine stillpic log:* *{quote}* *...* *2015-10-08 11:21:26,941 INFO [GalaxieStillPicGenerator] - Generating new /data/video_realtime//0161735.tar* *2015-10-08 11:21:26,941 ERROR [MediaGenerator] - Could not read Logo file* *2015-10-08 11:21:26,942 ERROR [MediaGenerator] - Could not read Ads URL Too many open files* *2015-10-08 11:21:26,942 ERROR [MediaGenerator] - High level exception: Too many open files* *2015-10-08 11:21:26,943 ERROR [GalaxieStillPicGenerator] - Could not generate fallback for /data/video_realtime//0161735.tar, deleting output file* *{quote}*
9	The method of claim 1, wherein the content provider is a cable television operator or a satellite television operator.	The list of cable operators such as Liberty, Rogers (EGLA-TRELLO-000642). Other operators are shown at EGLA-TRELLO-000543, including TIGO-ES, CableMAS, SogeTel, Tigo-CR1, etc.
10	The method of claim 1, wherein providing the at least one media stream to the content provider comprises streaming the at least one media stream to an MPEG multiplexer associated with the content provider.	An MVPD or a Cablle/Satellite Operator uses a a multiplexer to "mix" all the channels that content providers sell to consumers. E.g. ESPN, FOX, 50 Music Channels, etc[1]. The Device Proposal does not permit MVPDs to offer their services consistent with the content licenses and retransmission consent requirements under which they acquire distribution rights. For example, using native architectures or apps, MVPDs may assure that programming is kept in the right neighborhood, such as a news channel placed in a news "neighborhood" or a premium service kept adjacent to its multiplex channels. They may assure that search returns do not place a programmer next to an X-rated offering. Under the Device Proposal, the MVPD cannot fulfill these requirements. The Device Proposal now acknowledges this lack of protection, but declines to advance a proposal that respects these licensing conditions. Instead, the proposal now suggests that all aspects of the numbering, grouping and presentation of channels be defined by FCC regulation rather than marketplace arrangements that reflect copyright license conditions, retransmission agreements, local laws and expectations, and an MVPD's own decisions about how to present services—decisions that are protected by the First Amendment.

[1] FCC Record: A Comprehensive Compilation of Decisions, Reports, Public Notices, and Other Documents of the Federal Communications Commission of the United States. (2015). United States: Federal Communications Commission.

11	The method of claim 1, further comprising:	
	provisioning, on at least one server, at least one virtual machine for performing the receiving, obtaining, generating, assembling, and providing.	Dr. Shamos, Expert witness for Stingray testified that "*hus one does not transmit to the other and the StillPic Generator virtual machine cannot act as 'receiving system' for the Audio"* at MC-EGLA-000337 and Dr. Shamos's (Stingray's expert testified) that: "if the Galaxie StillPic Generator deposits data in RAM and Ubiquicast audio engine retrieves it from RAM, there is no transmission" The "Data Packets" as depicted by the order indicates that "the data packets between the Audio Engine and Still Pic Generator because …" which means that the HTML is passed to the Still Pic Generator and the Audio engine.
12	A system comprising:	
	[a] at least one processor;	The UbiquiCAST has a processor, as shown by the specifications, the servers are DELL computers that are shipped to all cable operators. See EGLA-TRELLO-000618
	[b] a computer-readable storage medium having stored therein instructions which, when executed by the processor, cause the at least one processor to perform operations comprising:	Use of a RAID Controller and HDDs is shown at EGLA-TRELLO-000619, or as shown at EGLA-TRELLO-000636. The storage includes the directory with /data and
	[c] receive, from a content provider, a request for at least one media stream for playback on a broadcast media channel, the at least one media stream including a plurality of multimedia items of different types;	The content provider, e.g. Cable Operator.
	[d] retrieve, from a cloud based service, multimedia content corresponding to the plurality of multimedia items, the multimedia content in a first format;	AWS and SQS are cloud-based services where the plurality of elements is stored, including SQSMetaDataPush as shown at EGLA-TRELLO-000521.
	[e] render a web page by a browser using the multimedia content;	See Claim 1[c]

	[f] generate a temporal sequence of screen captures of the rendered web page, where each screen capture defines all the content of the web page at a given time, and at least two adjacent screen captures illustrate a dynamic change of at least a portion of the content over time;	See Claim 1[d]
	[g] merge the temporal sequence screen captures with the at least one audio file to create the media stream; and	See Claim 1[e] and 1[f]. Merge means multiplex the temporal sequence of screens via (GalaxieStillPic and AudioEngine) and an audio file (E.g. AC-3). Dr. Shamos's (Stingray's expert testified) that: "if the Galaxie StillPic Generator deposits data in RAM and Ubiquicast audio engine retrieves it from RAM, there is no transmission" The "Data Packets" as depicted by the order indicates that "the data packets between the Audio Engine and Still Pic Generator because …" which means that the HTML is passed to the Still Pic Generator and the Audio engine. See MC-EGLA-000337.
	[h] Send the media stream to the content provider.	The content is broadcasted via a Multicast address as an SPTS or MPTS. As shown at Claim 1[f].
13	The system of claim 12, further comprising:	
	retrieve a video from the cloud based service, wherein the screen captures correspond to a plurality of static images obtained from the video.	See MC-EGLA-000337 says that "*Thus one does not transmit to the other and the StillPic Generator virtual machine cannot act as 'receiving system' for the Audio Engine." (Dkt. No. 188-5 at 12 (using ECF page number).)"* Additionally, the sam-cache and other servers are stored in Amazon, that is a cloud-based service provider with Amazon EC2.
14	The system of claim 12, further comprising:	
	select the multimedia content from the cloud based service based on a music genre associated with the broadcast media channel.	See Claim 26[h] of the '441 Patent and 10[g[
15	The system of claim 12, wherein the request comprises a request for a plurality of multimedia streams for playback on a plurality of broadcast media channels.	The requests use a plurality of multimedia streams for playback on a plurarity of broadcast media channels. As a plurality of channels, e.g. Rock, Jazz are broadcasted or multicasted to different SPTS and MPTS address See Claim 1[i] of the '441 Patent.

16	The system of claim 12, wherein the media stream is sent to a broadcast internet protocol (IP) address associated with the content provider.	See the Multicast addresses as shown at Claim 1[i] of the '441 Patent Chart.
17	A non-transitory computer-readable storage medium having stored therein instructions which, when executed by a processor, cause the processor to perform operations comprising:	
	[a] receiving, from a content provider, a request for at least one media stream for playback on a broadcast media channel, wherein the at least one media stream includes a plurality of multimedia items of different types;	See Claim 10[b] of the '441 Patent.
	[b] obtaining content corresponding to the plurality of multimedia items from at least one source offering the content in at least one first format;	The content is retrieved from the Sam-Cache e.g. Playlists and the /data is uploaded from the file-streaming-service.mtl.stingray.com. See Claim 10[c] of '441 Patent.
	[c] rendering a web page by a browser using the content;	See Claim 10[d] of '441 Patent.
	[d] generating a sequence of screen captures of the rendered web page, where each screen capture defines all of the content of the web page at a given time, and at least two adjacent screen captures illustrate a dynamic change of at least a portion of the content over time;	See Claim 10[e] of '441 Patent
	[e] assembling the at least one media stream using the sequence of screen captures; and	See Claim 10[f] of '441 Patent
	[f] providing the at least one media stream to the content provider for broadcast on the broadcast media channel.	See Claim 10[g] of '441 Patent
18	The non-transitory computer-readable storage medium of claim 17, wherein the obtaining comprises retrieving, for each of the plurality of multimedia items, at least one audio file corresponding to an audio component of the multimedia item and a plurality of screen captures corresponding to a video component of the multimedia item; and	See claim 10[e] of '441 Patent

	wherein the assembling comprises combining the plurality of screen captures and the at least one audio file.	At least one AC-3, AAC, or MPEG2-Layer 1 audio file. For example, at EGLA-TRELLO-0000495 the AC3 96Kbps and 128Kbps Stereo is used to generate the UbiquiCAST stream that is being broadcasted. As shown at EGLA-TRELLO-0000001 the playlist contains at least one audio file. *<Entry Event="00" Type="Played" Category="200" Id="7054" Title="Stingray ID.045.Eclectic Electronic.v1.w* *<Entry Event="01" Type="Played" Category="211" Id="2467" Title="Calm Down" Artist="Katy B, Four Tet &amp* *<Entry Event="02" Type="Played" Category="201" Id="7825" Title="Blind Heart" Artist="Cazzette & Terr* *<Entry Event="03" Type="Played" Category="212" Id="9133" Title="Lies" Artist="Jane XØ" Album="" Composer* *<Entry Event="04" Type="Played" Category="211" Id="7174" Title="You're Good but I'm Better" Ar* *<Entry Event="05" Type="Played" Category="203" Id="7490" Title="Latch" Artist="Disclosure feat. Sam Smit* And, the GalaxieAudioEngine works (see EGLA-TRELLO-0000484) on: *Westman2 audioengine had suddenly stopped streaming on error since Jan 28th.* *Both servers are at ubi version 2.9.1 on Dec 21st (CUSTTS-705)* *Timezone is also incorrect "America/Toronto" whereas primary has "America/Winnipeg"* *{quote}* *2016-01-28 16:23:04: [INFO] [030] 61 seconds of videos needed, adding 7 videos of 10 seconds.* *2016-01-28 16:23:04: [INFO] [MC0083] Available generators: 0, Wait time: 00:00:18.232695, Gen time: 00:00:08.124140* *2016-01-28 16:23:04: [INFO] [MC0083] Loading from video folder "/data/video_realtime/205/2059052.tar" with type TTA* As shown at EGLA-TRELLO-0000488, the GalaxieAudioEngine works on the audio and the StillPic to combine the images generated. *2016-02-04 08:52:00: [ERROR] /usr/lib64/libGalaxieFramework.so : ASI_Output::Stop()+0x16b* *2016-02-04 08:52:00: [ERROR] bin/GalaxieAudioEngine : Multiplexer::StopWorking()+0x47* *2016-02-04 08:52:00: [ERROR] bin/GalaxieAudioEngine : Multiplexer::StartWorking()+0x2a7* *2016-02-04 08:52:00: [ERROR] bin/GalaxieAudioEngine : Chain::StartWorking()+0x4e* *2016-02-04 08:52:00: [ERROR] bin/GalaxieAudioEngine : MainController::StartChains()+0x78* *2016-02-04 08:52:00: [ERROR] bin/GalaxieAudioEngine : MainController::Start()+0x9* *2016-02-04 08:52:00: [ERROR] bin/GalaxieAudioEngine : GalaxieAudioEngine::Start()+0x65*

		2016-02-04 08:52:00: [ERROR] bin/GalaxieAudioEngine : main()+0x1f *2016-02-04 08:52:00: [ERROR] /lib64/libc.so.6 : libc_start_main()+0xf4*
19	The non-transitory computer-readable storage medium of claim 17, wherein the at least one media stream corresponds to at least one of an HTTP live stream (HLS), an HTTP playlist, and a Real-time Streaming Transport (RTSP) stream.	The HTTP Live Stream url was https://ott-linear-channels.stingray.com/hls/stirr/133.m3u8 These are generated from the UbiquiCast or a Virtualized version of the Ubiquicast.
20	The non-transitory computer-readable storage medium of claim 17, storing additional instructions which, when executed by the processor, result in operations comprising:	Not sufficient evidence in trello.com
	[a] detect a network failure affecting connectivity with the at least one website; and	
	[b] in response, provide a previously recorded media stream to the content provider.	

21	The non-transitory computer-readable storage medium of claim 17, wherein assembling the at least one media stream comprises inserting at least one MPEG packet including metadata corresponding to the multimedia item.	The HTTP Live Streaming assets listed online include the link shown at EGLA-TRELLO-000668 and by extracting the stored files from the HTTP Live streaming (HLS) each "segement" is stored as part of the live stream, and each segment is about 7 seconds, as the HTTP Live Streaming protocol requires. (See EGLA-TRELLO-000669 and https://datatracker.ietf.org/doc/html/rfc8216) The HTTP Live Stream url was https://ott-linear-channels.stingray.com/hls/stirr/133.m3u8 By examining the Transport Stream segment in that MPEG Packet, the metadata in the 3rd PID is retrieved. ffmpeg -i https://ott-linear-channels.stingray.com/155/master_768x432_500kbps_5450191.ts ffmpeg version 6.0 Copyright (c) 2000-2023 the FFmpeg developers built with Apple clang version 14.0.0 (clang-1400.0.29.202) configuration: --prefix=/usr/local/Cellar/ffmpeg/6.0 --enable-shared --enable-pthreads --enable-version3 --cc=clang --host-cflags= --host-ldflags= --enable-ffplay --enable-gnutls --enable-gpl --enable-libaom --enable-libaribb24 --enable-libbluray --enable-libdav1d --enable-libmp3lame --enable-libopus --enable-librav1e --enable-librist --enable-librubberband --enable-libsnappy --enable-libsrt --enable-libsvtav1 --enable-libtesseract --enable-libtheora --enable-libvidstab --enable-libvmaf --enable-libvorbis --enable-libvpx --enable-libwebp --enable-libx264 --enable-libx265 --enable-libxml2 --enable-libxvid --enable-lzma --enable-libfontconfig --enable-libfreetype --enable-frei0r --enable-libass --enable-libopencore-amrnb --enable-libopencore-amrwb --enable-libopenjpeg --enable-libspeex --enable-libsoxr --enable-libzmq --enable-libzimg --disable-libjack --disable-indev=jack --enable-videotoolbox libavutil 58. 2.100 / 58. 2.100 libavcodec 60. 3.100 / 60. 3.100 libavformat 60. 3.100 / 60. 3.100 libavdevice 60. 1.100 / 60. 1.100 libavfilter 9. 3.100 / 9. 3.100 libswscale 7. 1.100 / 7. 1.100 libswresample 4. 10.100 / 4. 10.100 libpostproc 57. 1.100 / 57. 1.100 Input #0, mpegts, from 'https://ott-linear-channels.stingray.com/155/master_768x432_500kbps_5450191.ts': Duration: 00:00:01.94, start: 81111.572856, bitrate: 743 kb/s Program 1 Stream #0:0[0x1e1]: Video: h264 (High) ([27][0][0][0] / 0x001B), yuv420p(tv, progressive), 768x432 [SAR 1:1 DAR 16:9], 29.97 fps, 29.97 tbr, 90k tbn Stream #0:1[0x1ec](und): Audio: aac (LC) ([15][0][0][0] / 0x000F), 48000 Hz, stereo, fltp, 128 kb/s **Stream #0:2[0x1f6]: Data: timed_id3 (ID3 / 0x20334449)** As shown the Channels are #0:0 with h264 video, Channel 0:1 the AAC audio, and 0:2 is the timed_id3 tags.