



AMTC IP Coverage

Online Education Provider
Transmitting Audio to
Personal Computers
Compared to
Yurt '992 Claim 1

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Patent 5,132,992 Claim 1:

1. A transmission system for providing information to be transmitted to remote locations, the transmission system comprising:

library means for storing items containing information;

identification encoding means for retrieving the information in the items from the library means and for assigning a unique identification code to the retrieved information;

conversion means, coupled to the identification encoding means, for placing the retrieved information into a predetermined format as formatted data;

ordering means, coupled to the conversion means, for placing the formatted data into a sequence of addressable data blocks;

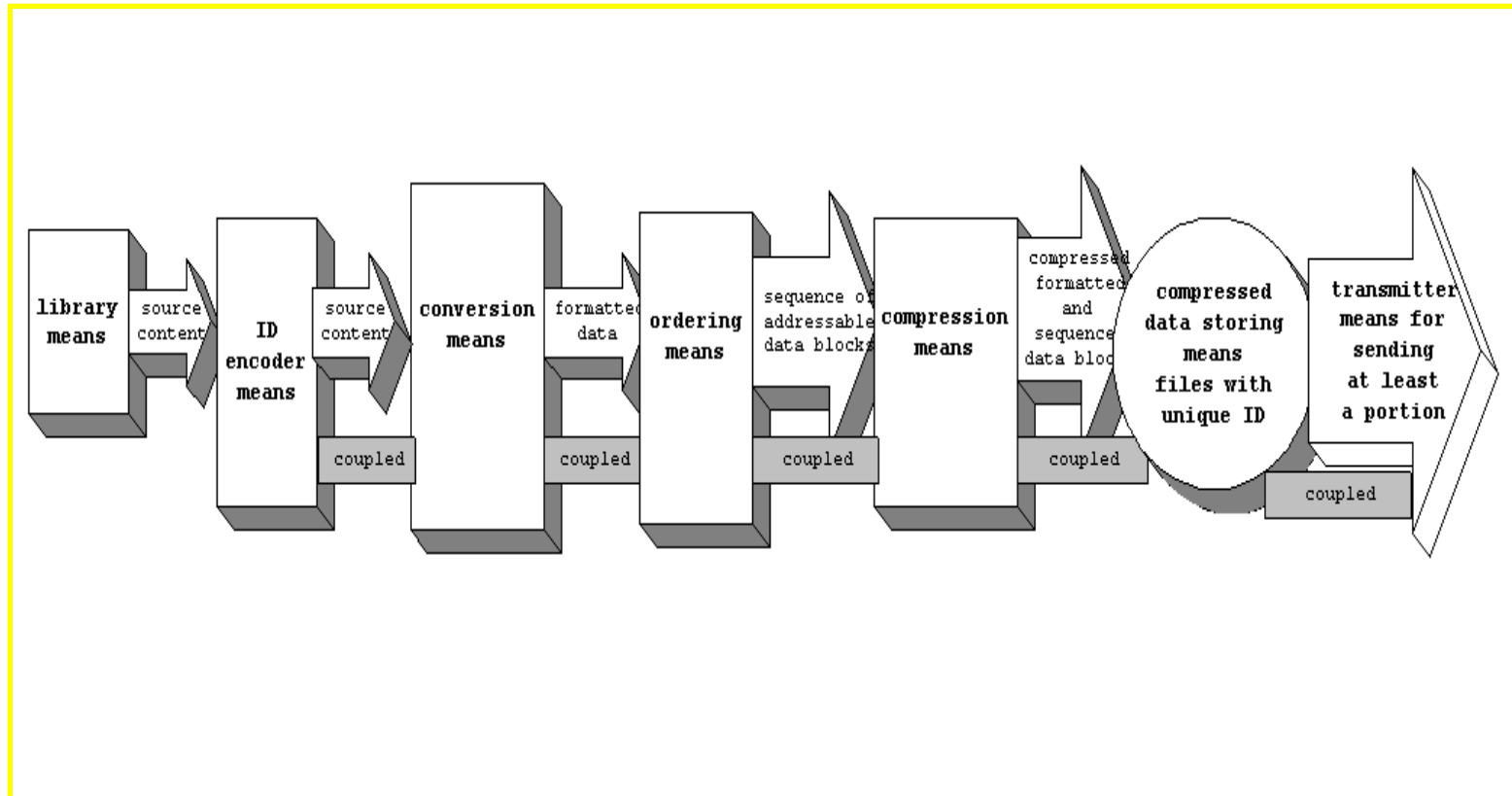
compression means, coupled to the ordering means, for compressing the formatted and sequenced data blocks;

compressed data storing means, coupled to the data compression means, for storing as files the compressed, sequenced data blocks received from the data compression means with the unique identification code assigned by the identification encoding means; and

transmitter means, coupled to the compressed data storing means, for sending at least a portion of one of the files to one of the remote locations.

Online Education Provider Transmitting Audio to Personal Computers Compared to the '992 Patent Claim 1:

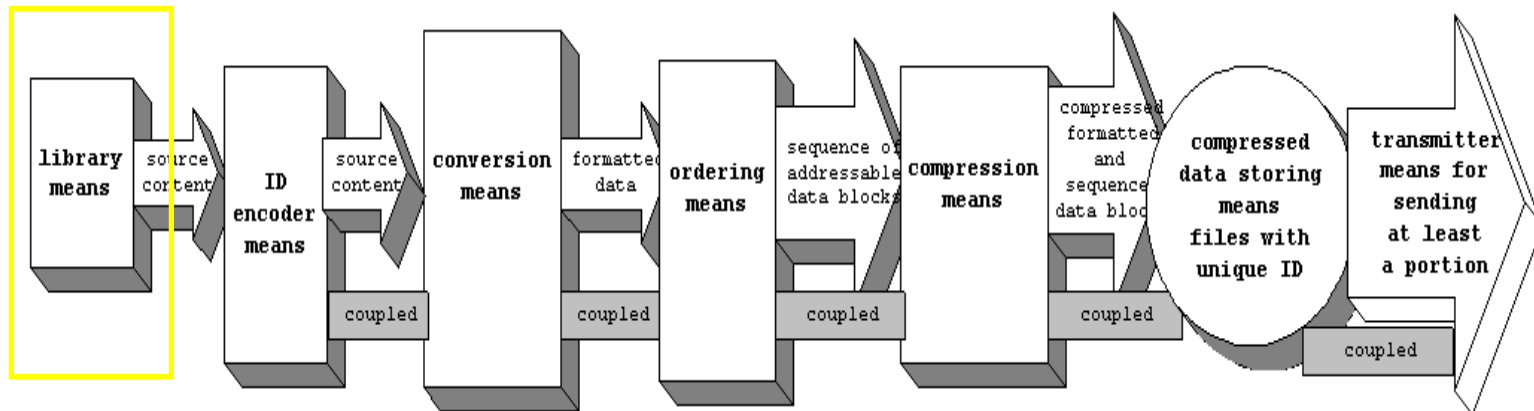
A transmission system for providing information to be transmitted to remote locations, the transmission system comprising:



An online education provider transmitting compressed digital audio (e.g., classroom lectures, music) over the Internet to its students is an example of a transmission system for providing information to be transmitted to remote locations.

Online Education Provider Transmitting Audio to Personal Computers Compared to the '992 Patent Claim 1:

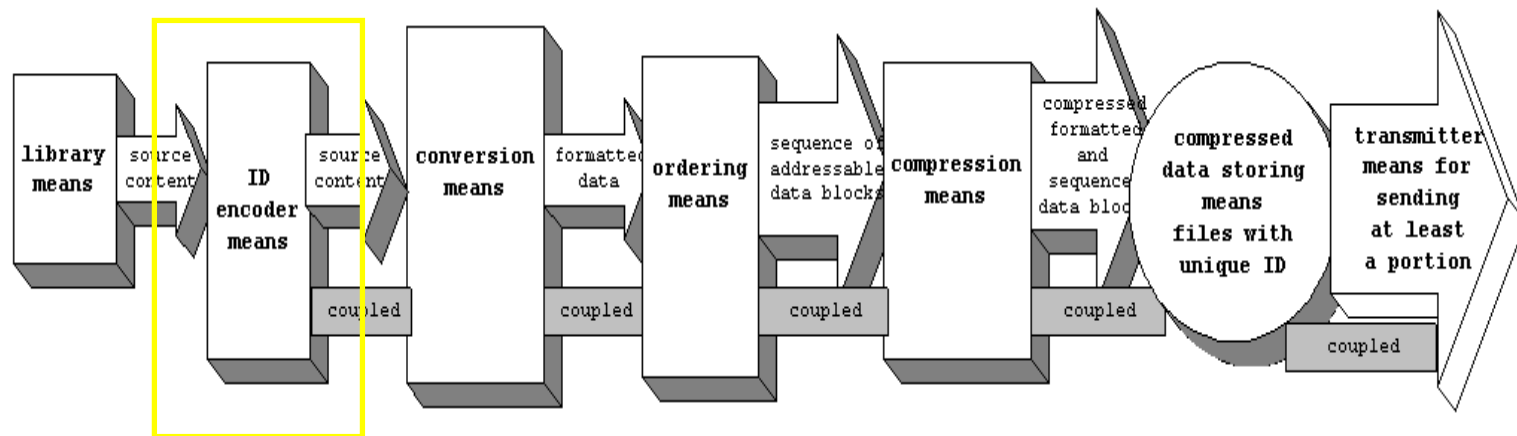
library means for storing items containing information;



The online education provider receives media from content providers (e.g., McGraw-Hill, Thomson). These content providers have a library of content available for the online education provider to use. Physical media (e.g., cassette tape) may also be produced by the online education provider. The online education provider maintains its own library to store the physical media it produces. The online education provider library and the content provider library are examples of a library means for storing items containing information.

Online Education Provider Transmitting Audio to Personal Computers Compared to the '992 Patent Claim 1:

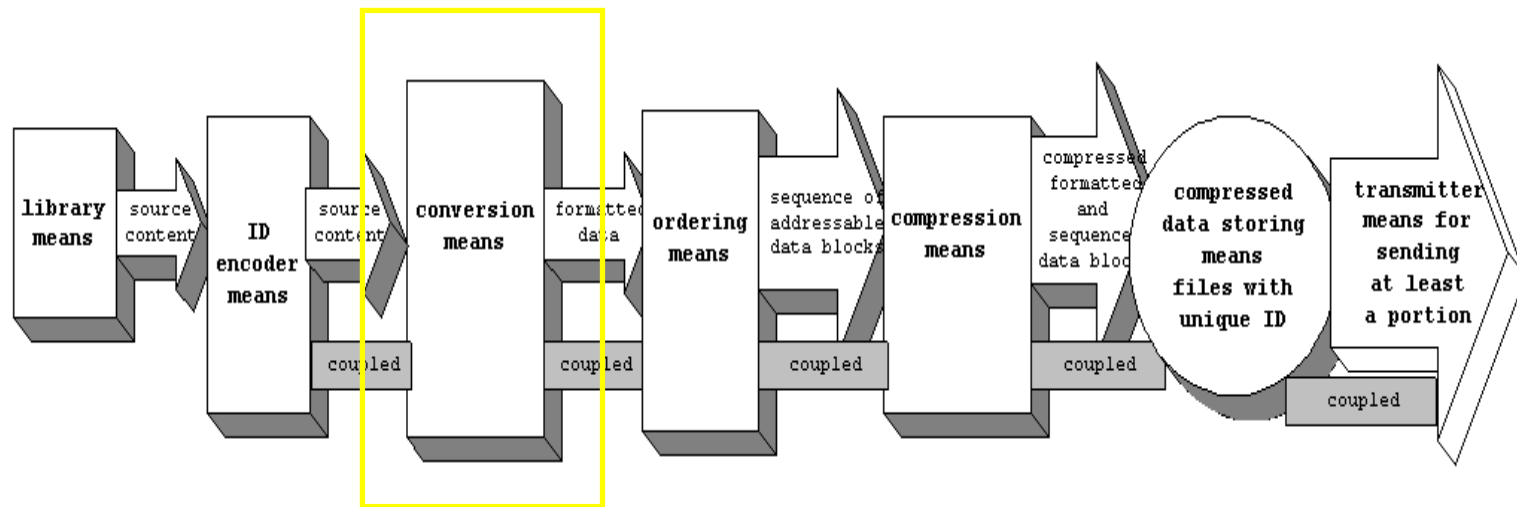
identification encoding means for retrieving the information in the items from the library means and for assigning a unique identification code to the retrieved information;



The media received and/or produced by the online education provider is digitized and compressed prior to distribution to its students. This digitization and compression may be done by the online education provider or by a content provider acting on their behalf. A technician(s) retrieves physical media from the library to be encoded. The technician(s) assigns a unique file name to identify the encoded media on a server after it has been encoded. The technician(s) and encoding software are one example of an identification encoding means for retrieving information and for assigning a unique identification code to the retrieved information.

Online Education Provider Transmitting Audio to Personal Computers Compared to the '992 Patent Claim 1:

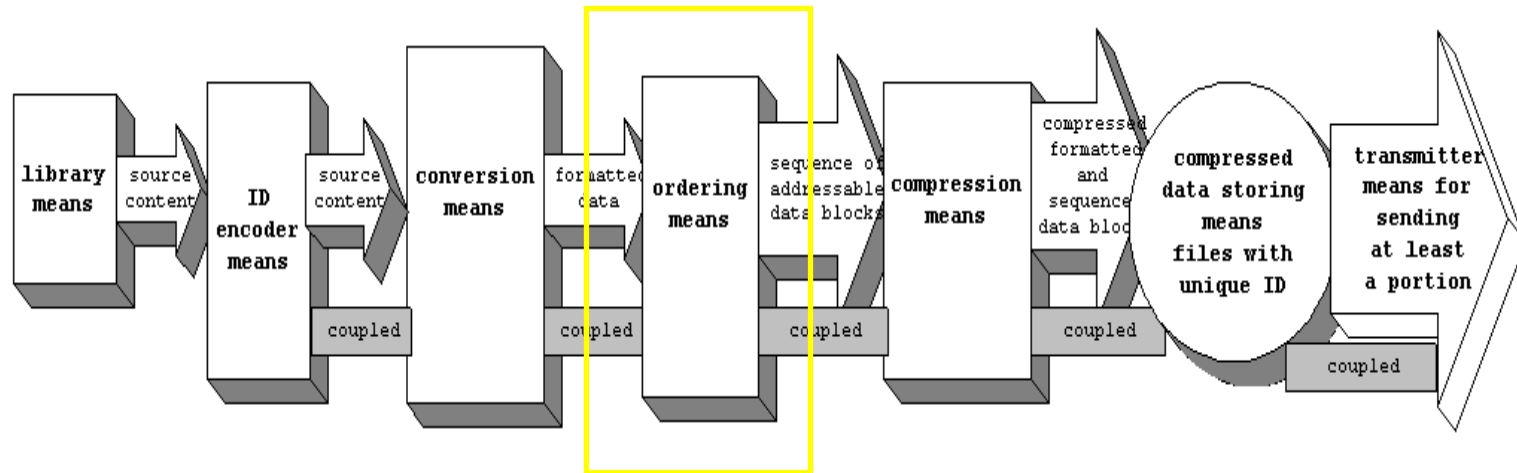
conversion means, coupled to the identification encoding means, for placing the retrieved information into a predetermined format as formatted data;



Physical media (e.g., a cassette tape) is placed in a tape player (i.e., an input receiver) where it is output from the player in digital form. The signal is input to a digital formatter and converted to a predetermined format. The receivers, converters, and formatters represent examples of conversion means for placing retrieved information into a predetermined format as formatted data.

Online Education Provider Transmitting Audio to Personal Computers Compared to the '992 Patent Claim 1:

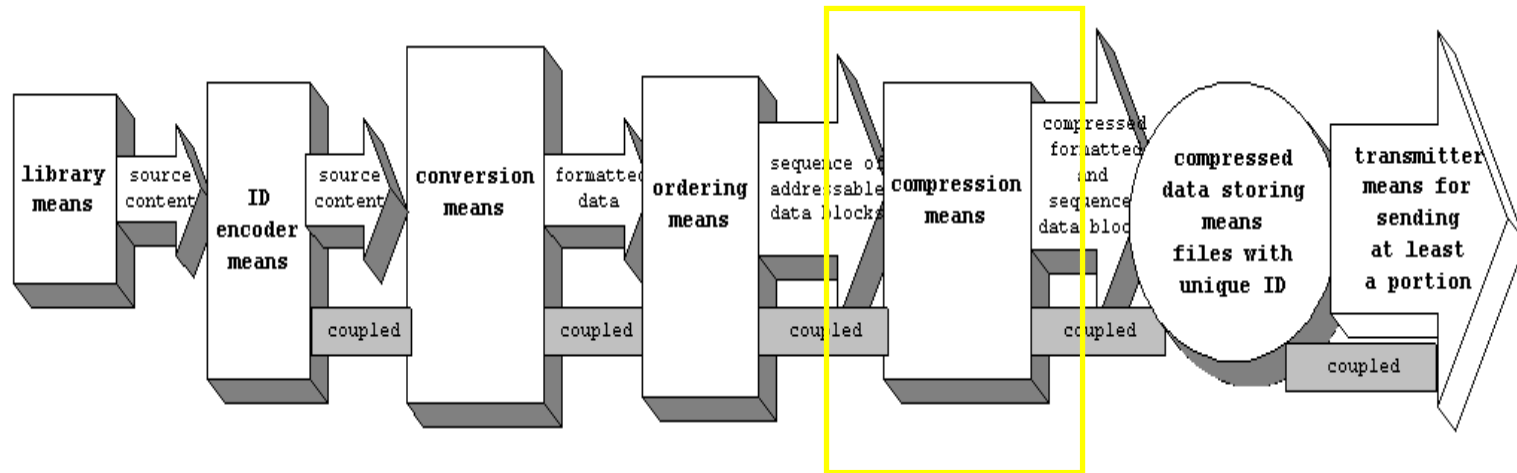
ordering means, coupled to the conversion means, for placing the formatted data into a sequence of addressable data blocks;



Most audio encoders, such as RealAudio and Windows Media, organize audio data into discrete data objects prior to compression. Time stamps for data objects in the stream are assigned by the encoder to the data blocks prior to compression. The portion of the audio encoder that creates these time stamped data objects is an example of an ordering means for placing formatted data into a sequence of addressable data blocks.

Online Education Provider Transmitting Audio to Personal Computers Compared to the '992 Patent Claim 1:

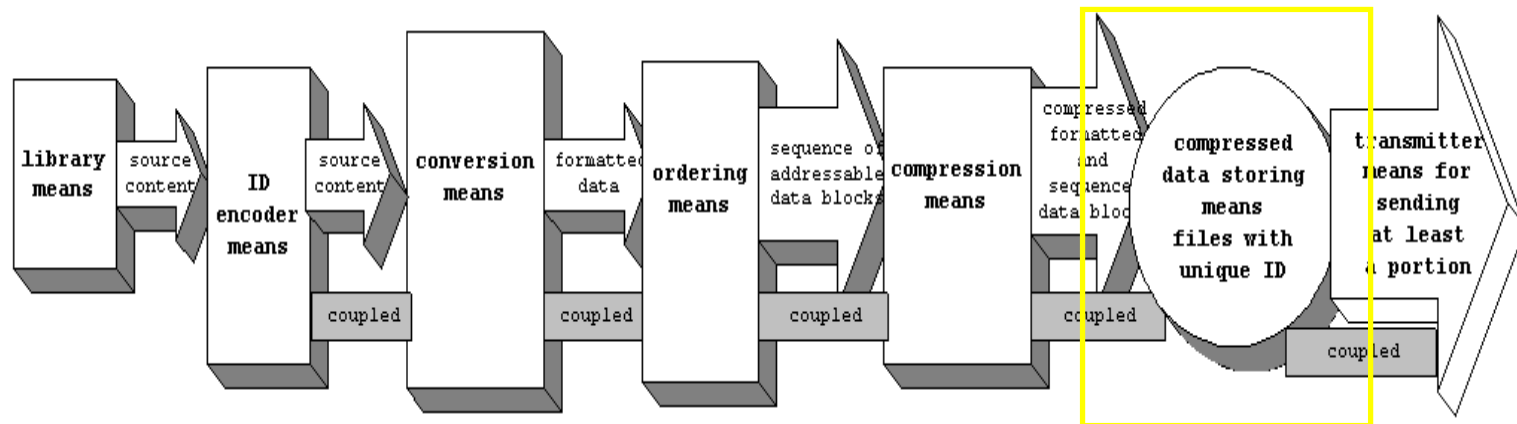
compression means, coupled to the ordering means, for compressing the formatted and sequenced data blocks;



Audio encoders encode the data objects. Audio encoders are examples of compression means.

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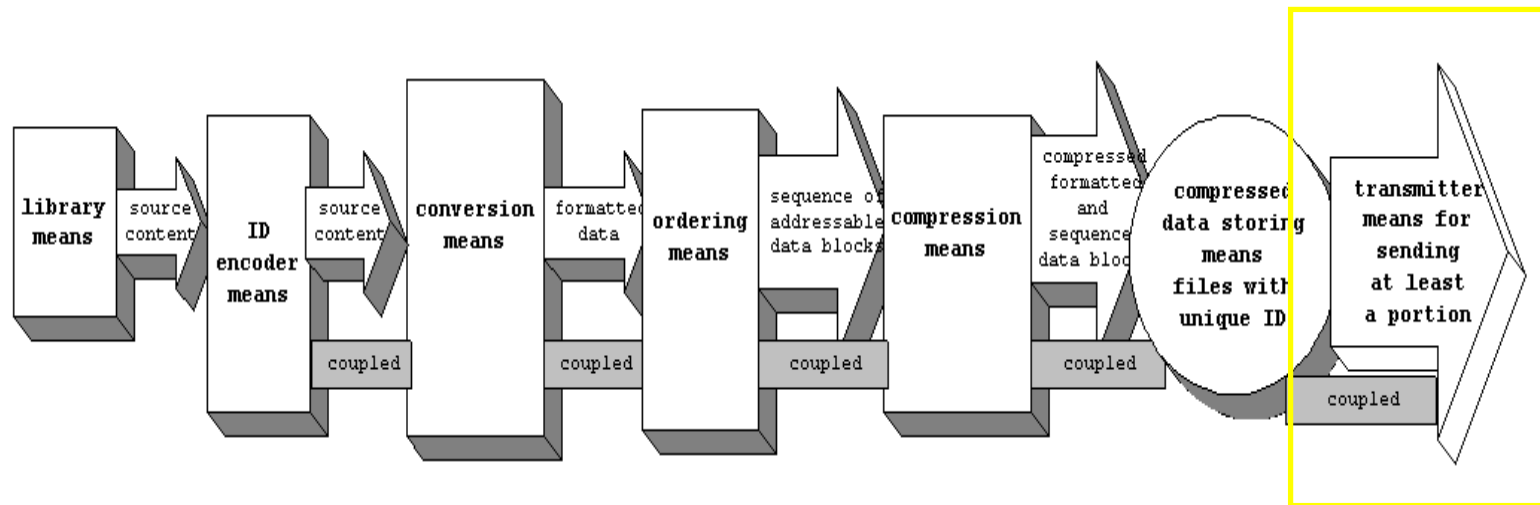
compressed data storing means, coupled to the data compression means, for storing as files the compressed, sequenced data blocks received from the data compression means with the unique identification code assigned by the identification encoding means; and



The compressed media is delivered from the content encoding location to the online education provider's distribution location where it is stored as files on an array of storage devices. Each file stored on the storage device is stored with its unique identification code. This distribution location may be managed by the online education provider or by a content delivery network (CDN) or hosting provider acting on the behalf of the online education provider. An array of storage devices is an example of a compressed data storing means.

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transmitter means, coupled to the compressed data storing means, for sending at least a portion of one of the files to one of the remote locations.



The online education providers transmits (e.g., streams, downloads) the audio from a media server connected to the array of storage devices over the Internet to the personal computers of its students. The media server and its infrastructure is an example of a transmitter means.