AMTC IP Coverage

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

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.

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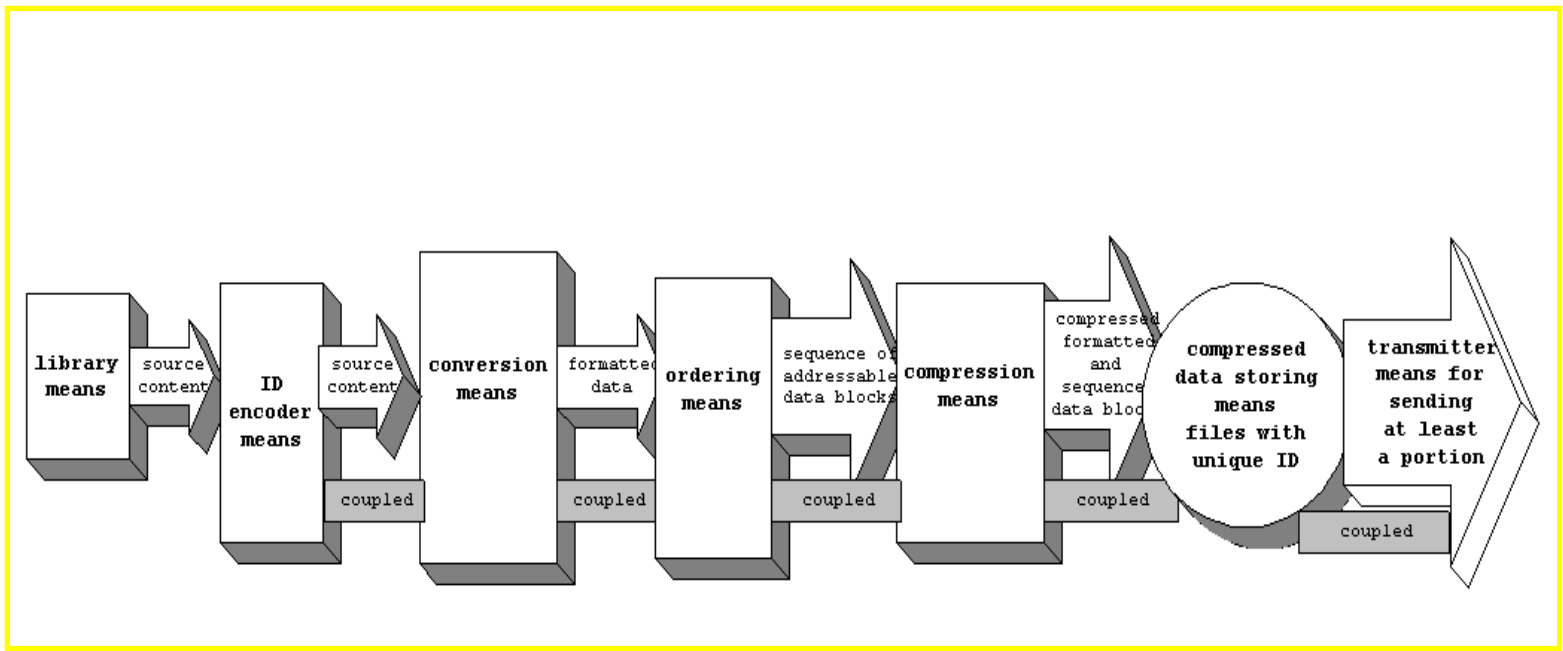
A transmission system for providing information to be transmitted to remote locations, the transmission system comprising:



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

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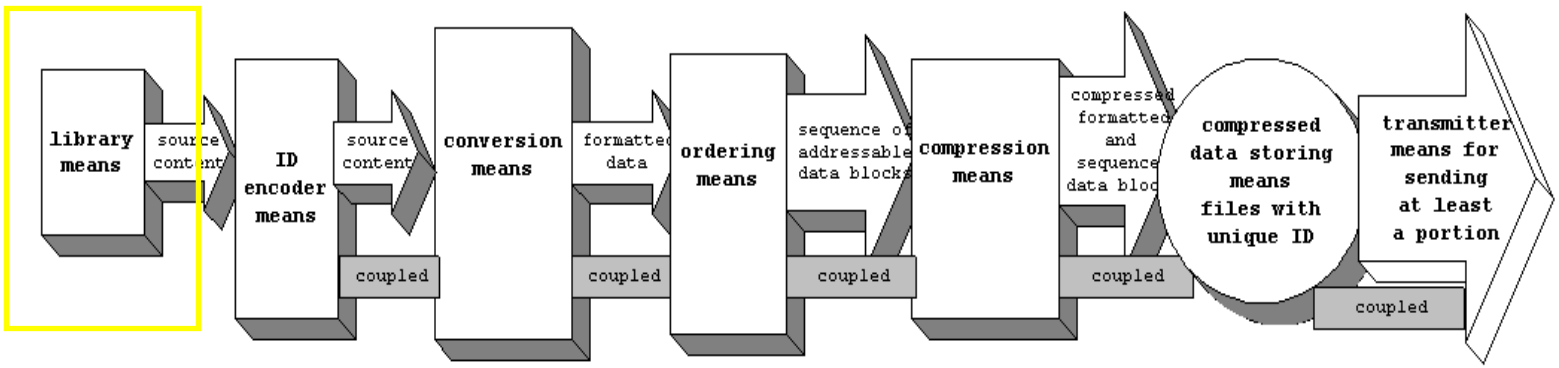
library means for storing items containing information :



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., videotape) 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.

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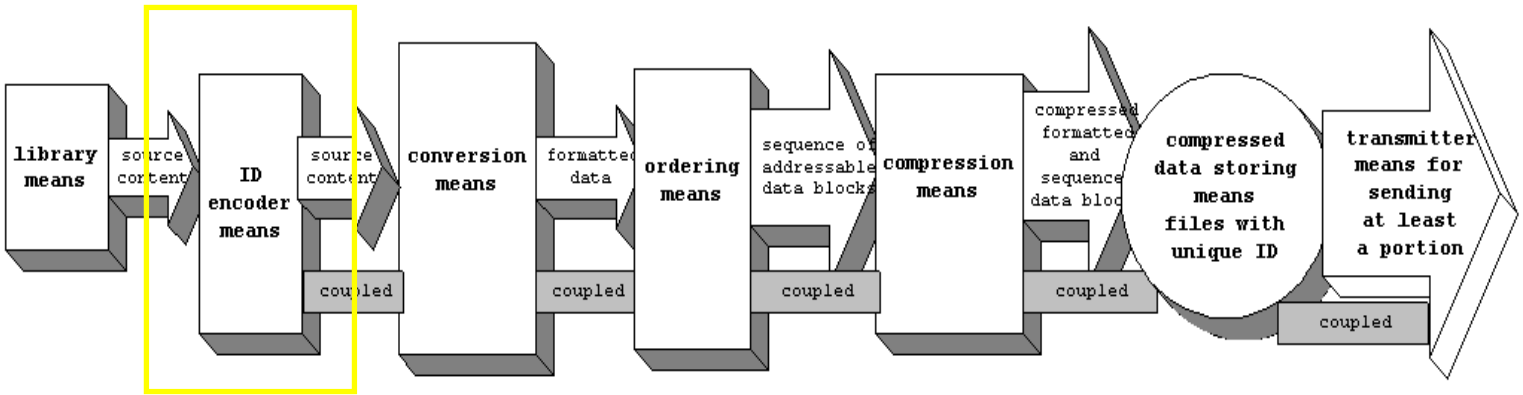
identification encoding means for retrieving the information in the items from the library means and for assigning a unique identification code to the retrieved information;



The media received and/or produced by the online education provider is digitized and compressed prior to distribution to customers. This digitization and compression may be done by the online education provider, or by a content provider acting on their behalf. A tape operator(s) retrieves physical media (e.g., a videotape) from the library to be encoded. A unique file name will be used to identify the encoded media on a server after it has been encoded. The tape operator(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.

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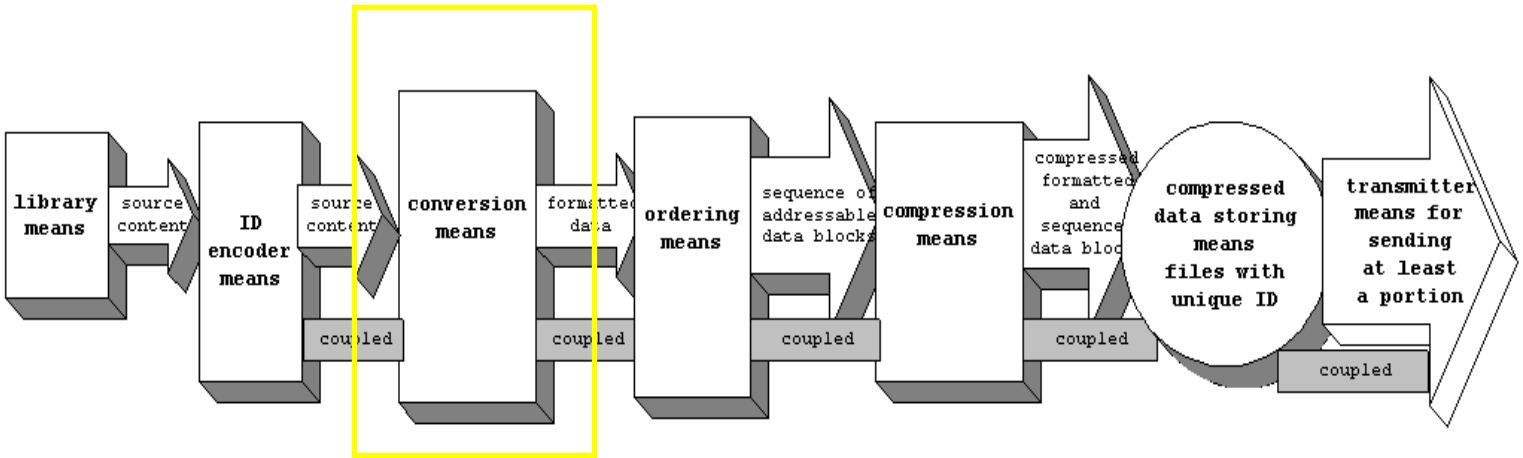
conversion means, coupled to the identification encoding means, for placing the retrieved information into a predetermined format as formatted data;



Physical media (e.g., a videotape) is placed in a tape player (i.e., an input receiver) where it is output from the player in either a digital or analog form. If in an analog form, the signal is applied to an analog input and converted to a standard digital format (such as an "AVI" file format) in an analog-digital converter. If in a digital form, the signal is input to a digital formatter and converted to a predetermined format (such as an "AVI" file format). The analog and/or digital receivers, converters, and formatters represent examples of a conversion means for placing retrieved information into a predetermined format as formatted data.

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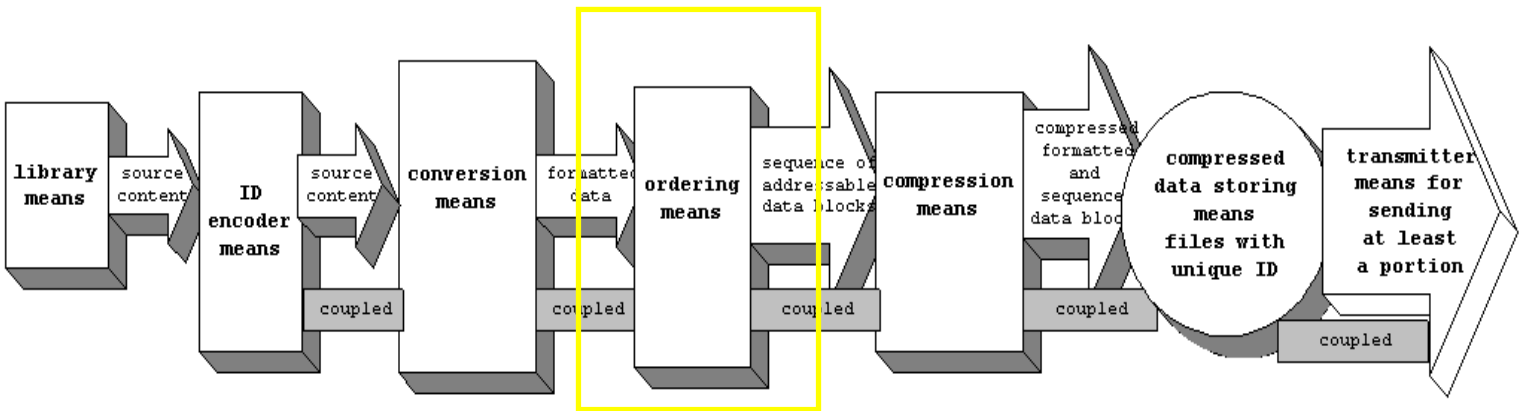
ordering means, coupled to the conversion means, for placing the formatted data into a sequence of addressable data blocks:



Video encoding methods organize frames into sequences of frames (data blocks) prior to compression. These frames are compressed and assigned relative time markers so that they are addressable by presentation time. The portion of the encoder that organizes the frames into sequences by assigning relative time markers (e.g., presentation time) is an example of an ordering means for placing the formatted data into a sequence of addressable data blocks.

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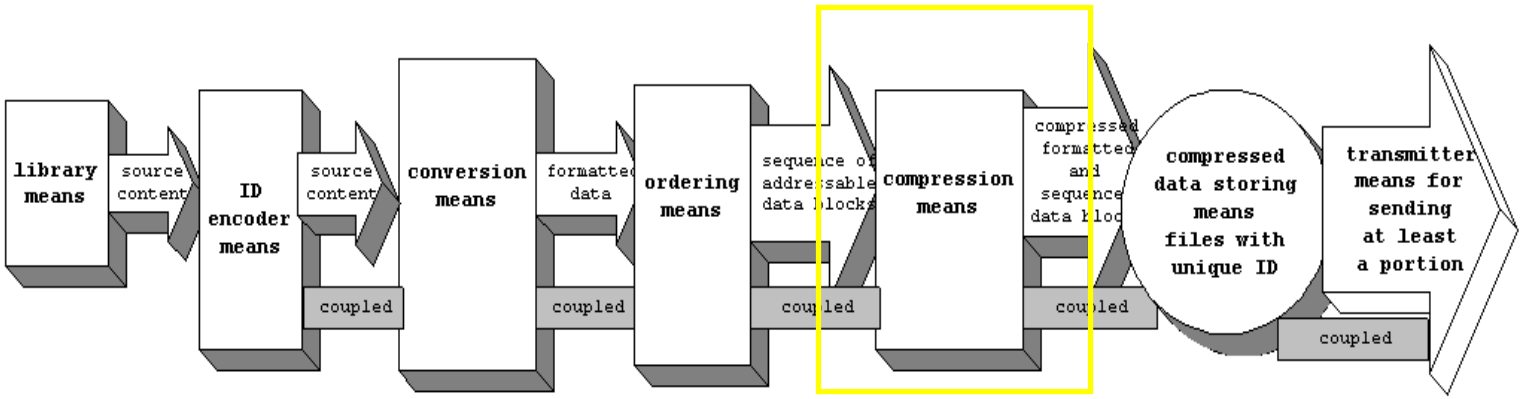
compression means, coupled to the ordering means, for compressing the formatted and sequenced data blocks;



Video encoders compress video by operating on individual video frames and sequences of video frames. An online education provider, or an agent acting on their behalf, uses encoders by Apple, Microsoft, and/or Real to encode the media. Encoders are examples of compression means.

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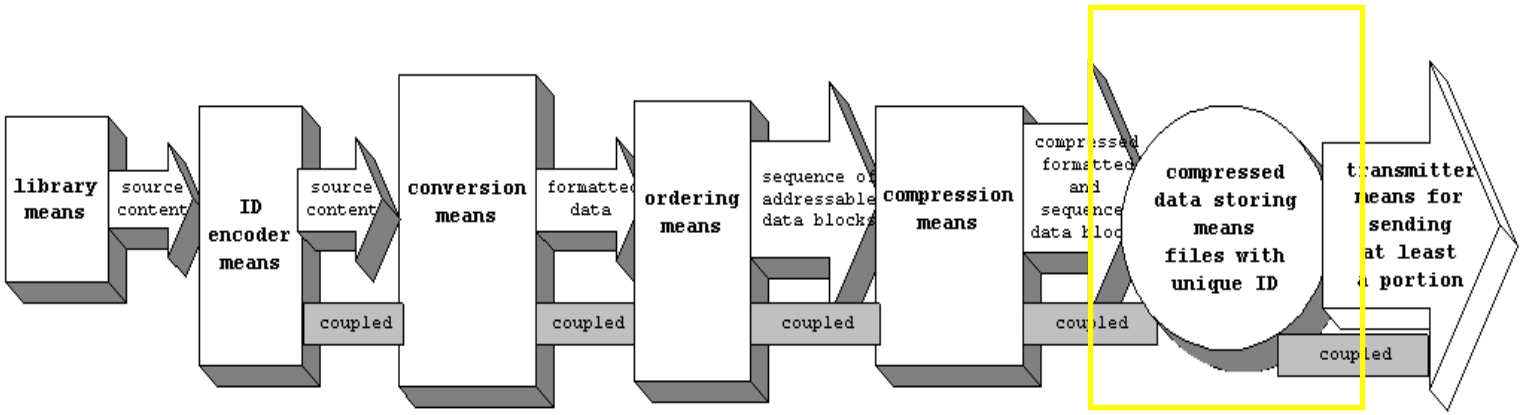
compressed data storing means, coupled to the data compression means, for storing as files the compressed, sequenced data blocks received from the data compression means with the unique identification code assigned by the identification encoding means; and



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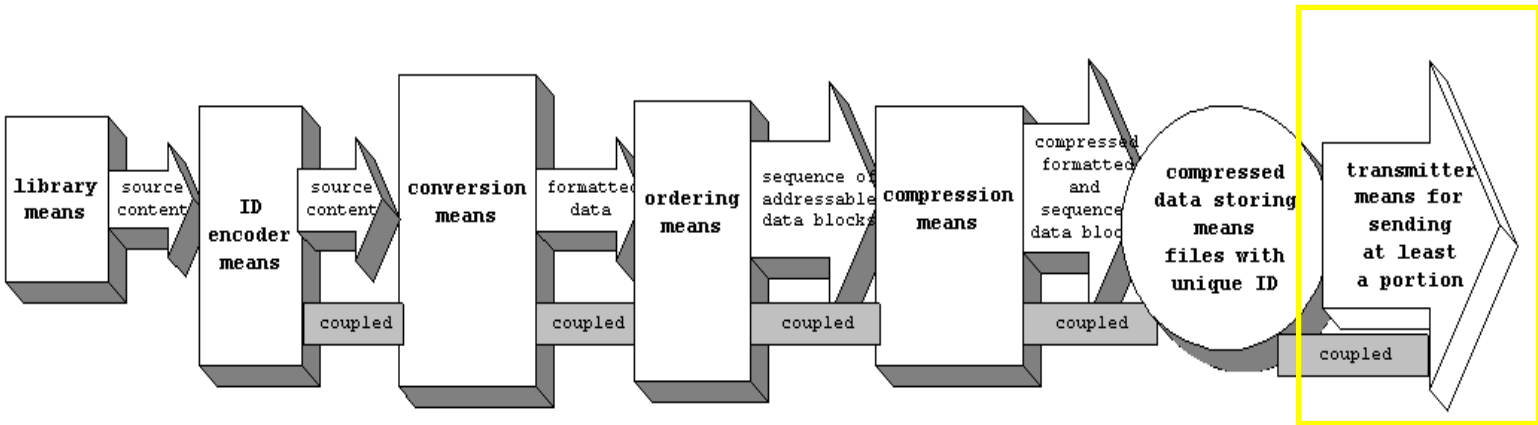
transmitter means, coupled to the compressed data storing means, for sending at least a portion of one of the files to one of the remote locations.



The online education provider transmits the media from a video server connected to the array of storage devices over the Internet to the personal computers of its students. The video server and its infrastructure is an example of a transmitter means.