Appendix B

A. Claim Chart for Gremillet & Tescher for the ’995 Patent

Asserted U.S. Patent No. 4,963,995	Gremillet & Tescher
995-1. An audio/video transceiver apparatus comprising:	Gremillet discloses a music on demand system for “the teledistribution of recorded information” that “offers[s], to requesting users, any piece of music of their choice . . . [transmitted] in a few seconds” from a distribution center using the “transmission channels used in television.” [1:47-50; 1:64-68; 2:3-8; 3:5-10] The distribution center has a television transmitter, either a “transmitting antenna” or “a cable or optical fibres” that connect with the subscriber’s equipment. [4:1-7]
[a] input means for receiving audio/visual source information;	It is inherent in the Gremillet patent that the distribution center receives the audio works for distribution. “[T]he distribution center 10 comprises a bank 11 of musical recordings recorded at a faster speed than normal.” [3:37-40] This sound information is “obtained by writing [it] into a memory and then reading from the memory at the accelerated speed.” [3:42-44] The Tescher patent describes the compression, encoding, and buffering of time domain information signals “for subsequent utilization, e.g.[,] transmission from a transmitting station to a receiving station.” [2:43-44]. As illustrated in Fig. 1, the system receives video source information through an analog processor: “analog video signals are coupled to the input of an analog processor unit 11 . . . and converted to multi-bit digital samples.” [5:32-34]
[b] compression means, coupled to said input means, for compressing said audio/video source information into a time compressed representation thereof having an associated time	Gremillet refers to the music it transmits as “compressed” but does not expressly describe a reduction in the number of bits used to represent the music: “the compression of the sound

period that is shorter than a time period associated with a real time representation of said audio/video source information;	information can be obtained by writing into a memory and then reading from the memory at the accelerated speed." [3:42-45] Gremillet describes the "information flow rate" of the musical works it transmits as "approximately 0.5 Mbit/s." This is less than the data rate of an uncompressed wideband audio signal (e.g. CD audio) which is approximately 0.7 Mbit/s, which suggests that the audio information Gremillet transmits has also been compressed in a manner that reduces the number of bits used to represent the music. It would also have been obvious to combine Gremillet with any one of several known compression technologies, including those disclosed in the U.S. Patent No. 4,541,012 ("the Tescher Patent"), which discloses a lower bitrate for compressed video than the rate disclosed for faster-than-real-time transmission of audio in Gremillet. The Tescher patent illustrates in Fig. 1 "a block diagram illustrating an encoder incorporating the invention." [5:7-8]. This encoder uses both intraframe and interframe compression. Tescher uses an interframe compression technique of "comparing corresponding blocks of time domain information signals from successive fields." [1:25-45] The Tescher patent also describes using a type of intraframe compression known as "transform domain encoding," in which "each field of information signals is divided into a number of rectangular or square arrays of individual picture elements," rather than storing individual pixels. [1:59-66] In addition, the Tescher patent employs a Huffman coding

	technique, which was a well-known method for data compression. [6:67-7:63] These various compression techniques yield a compressed full-motion video bit rate of "2.39 X 10^5 bits per second [or more simply, 0.239 Mbits per second] which is 0.25 percent of the standard uncompressed digital bit rate." [11:61-12:1] "The equivalent digital samples produced in analog processor unit 11 are coupled to the input of an input digital processor 12 in which incoming field samples are merged with the corresponding samples from the previous field." [5:39-44]
[c] random access storage means, coupled to said compression means, for storing the time compressed representation of said audio/video source information; and	The Gremillet patent discloses "recording support [which] can be a video disk or a video recorder." [3:40-42] This "information recording bank" can be formed from the audio source information "by writing into a memory and then reading from the memory at an accelerated speed." [3:42-44] The Tescher patent discloses the compression of an input video stream "for subsequent utilization, e.g.[,] . . . recording on video tape or other magnetic media, etc." [2:43-45] Tescher thus anticipates coupling the output of the compression means to a random access storage means such as a hard disk for the purpose of storing the compressed video.
[d] output means, coupled to said random access storage means, for receiving the time compressed audio/video source information stored in said random access storage means for transmission away from said audio/video transceiver apparatus.	Gremillet explains that "[t]he information flow rate linked with classical music is approximately 0.5 Mbits/s. However, the information flow rate of picture transmission channel used in television (either broadcast, or by optical fibres or cable) is well above this value." [2:1-8] This makes it possible to transmit "music comparessed [sic] in a factor of 200," meaning that "a musical work lasting one hour can be transmitted in 18 seconds."

	[2:8-12] Gremillet describes a "broadcasting means consisting of a transmitter 31, a transmitting antenna 32, a receiving antenna 33, or a cable or optical fibres 34,' connecting the distribution center with the subscriber equipment. [4:1-7] Gremillet describes a "video recorder" which is "housed with the requesting subscriber" and records the transmitted information: "the writing phase continues until the work has been completely recorded. However, as stated hereinbefore, this phase is of a short duration, in view of the high compression level of the recorder information (greater than 100)." [4:16-40; *see also* Claim 1] Gremillet describes the "information flow rate" of the musical works it transmits as "approximately 0.5 Mbit/s." This is less than the data rate of an uncompressed wideband audio signal (e.g. CD audio) which is approximately 0.7 Mbit/s, which suggests that the audio information Gremillet transmits has also been compressed in a manner that reduces the number of bits used to represent the music. It would also have been obvious to combine Gremillet with any one of several known compression technologies, including those disclosed in the U.S. Patent No. 4,541,012 ("the Tescher Patent"), which discloses a lower bitrate for compressed video than the rate disclosed for faster-than-real-time transmission of audio in Gremillet. The Tescher patent illustrates in Fig. 1 "a block diagram illustrating an encoder incorporating the invention." [5:7-8]. This encoder uses both intraframe and interframe compression.

	Tescher describes the compression, encoding, and buffering of time domain information signals "for subsequent utilization, e.g.[,] transmission from a transmitting station to a receiving station." [2:43-44]. The described transfer from transmitting to receiving station, "from an encoding site to a decoding site," discloses transmission of a compressed video stream to an external device. [1:8-13]
995-2. An audio/video transceiver apparatus as in claim 1 further comprising editing means, coupled to said random access storage means, for editing the time compressed representation of said audio/video source information stored in said random access storage means; and for restoring the edited time compressed representation of said audio/video source information in said random access storage means;	
and wherein said output means is operative for receiving the edited time compressed representation of said audio/video source information stored in said random access storage means for transmission away from said audio/video transceiver apparatus.	
	-
995-3. An audio/video transceiver apparatus as in claim 2 further comprising monitor means for enabling the user to selectively identify the time compressed representation of said audio/video source information stored in said random access storage means during editing.	
995-7. An audio/video transceiver apparatus as in claim 1 wherein said random access storage means comprises a semiconductor memory.	
995-8. An audio/video transceiver apparatus as in claim 1	

wherein:	
said audio/video source information comprises analog audio/video source information;	In the Gremillet patent that the distribution center receives the audio works for distribution. "[T]he distribution center 10 comprises a bank 11 of musical recordings recorded at a faster speed than normal." [3:37-40] These works may be in analog form and then converted by the transceiver. [5:7-9] This sound information is "obtained by writing [it] into a memory and then reading from the memory at the accelerated speed." [3:42-44] The Tescher patent describes the compression, encoding, and buffering of time domain information signals "for subsequent utilization, e.g.[,] transmission from a transmitting station to a receiving station." [2:43-44]. As illustrated in Fig. 1, the system receives video source information through an analog processor: "analog video signals are coupled to the input of an analog processor unit 11 . . . and converted to multi-bit digital samples." [5:32-37]
said audio/video transceiver apparatus further comprises analog to digital converter means for converting said analog audio/video source information to corresponding digital audio/video source information;	Gremillet discloses the use of an analog to digital converter in the transceiver. [5:7-9] The Tescher patent describes the compression, encoding, and buffering of time domain information signals "for subsequent utilization, e.g.[,] transmission from a transmitting station to a receiving station." [2:43-44]. As illustrated in Fig. 1, the system receives video source information through an analog processor: "analog video signals are coupled to the input of an analog processor unit 11 . . . and converted to multi-bit digital samples." [5:32-37]
said compression means is operative for compressing said corresponding digital audio/video source information into a digital time compressed representation thereof having an	Gremillet refers to the music it transmits as "compressed" but does not expressly describe a reduction in the number of bits used to represent the music: "the compression of the sound

associated time period that is shorter than a time period associated with a real time representation of said digital audio/video source information; and	information can be obtained by writing into a memory and then reading from the memory at the accelerated speed." [3:42-45] Gremillet describes the "information flow rate" of the musical works it transmits as "approximately 0.5 Mbit/s." This is less than the data rate of an uncompressed wideband audio signal (e.g. CD audio) which is approximately 0.7 Mbit/s, which suggests that the audio information Gremillet transmits has also been compressed in a manner that reduces the number of bits used to represent the music. It would also have been obvious to combine Gremillet with any one of several known compression technologies, including those disclosed in the U.S. Patent No. 4,541,012 ("the Tescher Patent"), which discloses a lower bitrate for compressed video than the rate disclosed for faster-than-real-time transmission of audio in Gremillet. The Tescher patent illustrates in Fig. 1 "a block diagram illustrating an encoder incorporating the invention." [5:7-8]. This encoder uses both intraframe and interframe compression. Tescher uses an interframe compression technique of "comparing corresponding blocks of time domain information signals from successive fields." [1:25-45] The Tescher patent also describes using a type of intraframe compression known as "transform domain encoding," in which "each field of information signals is divided into a number of rectangular or square arrays of individual picture elements," rather than storing individual pixels. [1:59-66] In addition, the Tescher patent employs a Huffman coding

	technique, which was a well-known method for data compression. [6:67-7:63] These various compression techniques yield a compressed full-motion video bit rate of "2.39 X 10^5 bits per second [or more simply, 0.239 Mbits per second] which is 0.25 percent of the standard uncompressed digital bit rate." [11:61-12:1] "The equivalent digital samples produced in analog processor unit 11 are coupled to the input of an input digital processor 12 in which incoming field samples are merged with the corresponding samples from the previous field." [5:39-44]
said random access storage means is operative for storing said digital time compressed representation of said corresponding digital audio/video source information.	The Gremillet patent discloses "recording support [which] can be a video disk or a video recorder." [3:40-42] This "information recording bank" can be formed from the audio source information "by writing into a memory and then reading from the memory at an accelerated speed." [3:42-44] The Tescher patent discloses the compression of an input video stream "for subsequent utilization, e.g.[,] . . . recording on video tape or other magnetic media, etc." [2:43-45] Tescher thus anticipates coupling the output of the compression means to a random access storage means such as a hard disk for the purpose of storing the compressed video.
995-9. An audio/video transceiver apparatus as in claim 1 wherein:	
said audio/video source information comprises digital audio/video source information;	
said compression means is operative for compressing said digital audio/video source information into a digital time compressed	Gremillet refers to the music it transmits as "compressed" but does not expressly describe a reduction in the number of bits

representation thereof having an associated time period that is shorter than a time period associated with a real time representation of said digital audio/video source information; and	used to represent the music: "the compression of the sound information can be obtained by writing into a memory and then reading from the memory at the accelerated speed." [3:42-45] Gremillet describes the "information flow rate" of the musical works it transmits as "approximately 0.5 Mbit/s." This is less than the data rate of an uncompressed wideband audio signal (e.g. CD audio) which is approximately 0.7 Mbit/s, which suggests that the audio information Gremillet transmits has also been compressed in a manner that reduces the number of bits used to represent the music. It would also have been obvious to combine Gremillet with any one of several known compression technologies, including those disclosed in the U.S. Patent No. 4,541,012 ("the Tescher Patent"), which discloses a lower bitrate for compressed video than the rate disclosed for faster-than-real-time transmission of audio in Gremillet. The Tescher patent illustrates in Fig. 1 "a block diagram illustrating an encoder incorporating the invention." [5:7-8]. This encoder uses both intraframe and interframe compression. Tescher uses an interframe compression technique of "comparing corresponding blocks of time domain information signals from successive fields." [1:25-45] The Tescher patent also describes using a type of intraframe compression known as "transform domain encoding," in which "each field of information signals is divided into a number of rectangular or square arrays of individual picture elements," rather than storing individual pixels. [1:59-66]

	In addition, the Tescher patent employs a Huffman coding technique, which was a well-known method for data compression. [6:67-7:63] These various compression techniques yield a compressed full-motion video bit rate of "2.39 X 10^5 bits per second [or more simply, 0.239 Mbits per second] which is 0.25 percent of the standard uncompressed digital bit rate." [11:61-12:1] "The equivalent digital samples produced in analog processor unit 11 are coupled to the input of an input digital processor 12 in which incoming field samples are merged with the corresponding samples from the previous field." [5:39-44]
said random access storage means is operative for storing said digital time compressed representation of said digital audio/video source information;	The Gremillet patent discloses "recording support [which] can be a video disk or a video recorder." [3:40-42] This "information recording bank" can be formed from the audio source information "by writing into a memory and then reading from the memory at an accelerated speed." [3:42-44] The Tescher patent discloses the compression of an input video stream "for subsequent utilization, e.g.[,] . . . recording on video tape or other magnetic media, etc." [2:43-45] Tescher thus anticipates coupling the output of the compression means to a random access storage means such as a hard disk for the purpose of storing the compressed video.
995-15. An audio/video transceiver apparatus is in claim 9 wherein said input means is coupled to an external computer and said digital audio/video source information comprises computer-generated audio/video information.	
995-17. An audio/video transceiver apparatus comprising:	Gremillet discloses a music on demand system for "the

	teledistribution of recorded information" that "offers[s], to requesting users, any piece of music of their choice . . . [transmitted] in a few seconds" from a distribution center using the "transmission channels used in television." [1:47-50; 1:64-68; 2:3-8; 3:5-10] The distribution center has a television transmitter, either a "transmitting antenna" or "a cable or optical fibres" that connect with the subscriber's equipment. [4:1-7]
[a] input means for receiving audio/video source information as a time compressed representation thereof, said time compressed representation of said audio/video source information being received over an associated burst time period that is shorter than a real time period associated with said audio/video source information;	It is inherent in the Gremillet patent that the distribution center receives the audio works for distribution. "[T]he distribution center 10 comprises a bank 11 of musical recordings recorded at a faster speed than normal." [3:37-40] This sound information is "obtained by writing [it] into a memory and then reading from the memory at the accelerated speed." [3:42-44]
[b] random access storage means, coupled to said input means, for storing the time compressed representation of said audio/video source information received by said input means; and	The Gremillet patent discloses "recording support [which] can be a video disk or a video recorder." [3:40-42] This "information recording bank" can be formed from the audio source information "by writing into a memory and then reading from the memory at an accelerated speed." [3:42-44] Tescher discloses the compression of an input video stream "for subsequent utilization, e.g.[,] . . . recording on video tape or other magnetic media, etc." [2:43-45] Tescher thus anticipates coupling the output of the compression means to a random access storage means such as a hard disk for the purpose of storing the compressed video.
[c] output means, coupled to said random access storage means, for receiving the time compressed representation of said audio/video source information stored in said random access	Gremillet explains that "[t]he information flow rate linked with classical music is approximately 0.5 Mbits/s. However, the information flow rate of picture transmission channel used in

storage means for transmission away from said audio/video transceiver apparatus	television (either broadcast, or by optical fibres or cable) is well above this value." [2:1-8] This makes it possible to transmit "music comparessed [sic] in a factor of 200," meaning that "a musical work lasting one hour can be transmitted in 18 seconds." [2:8-12] Gremillet describes a "video recorder" which is "housed with the requesting subscriber" and records the transmitted information: "the writing phase continues until the work has been completely recorded. However, as stated hereinbefore, this phase is of a short duration, in view of the high compression level of the recorder information (greater than 100)." [4:16-40; *see also* Claim 1] Gremillet describes the "information flow rate" of the musical works it transmits as "approximately 0.5 Mbit/s." This is less than the data rate of an uncompressed wideband audio signal (e.g. CD audio) which is approximately 0.7 Mbit/s, which suggests that the audio information Gremillet transmits has also been compressed in a manner that reduces the number of bits used to represent the music. Gremillet describes a "broadcasting means consisting of a transmitter 31, a transmitting antenna 32, a receiving antenna 33, or a cable or optical fibres 34,' connecting the distribution center with the subscriber equipment. [4:1-7] This "recording can be kept on the video recorder for the purpose of listening to it later." [4:36-39] It would have been obvious to copy the compressed musical works onto other tapes in order to backup the information. *See, e.g.*, U.S. Patent No. 4,768,110. Because these works are compressed, such copying would be at a faster-than-real-time rate.

	Tescher describes the compression, encoding, and buffering of time domain information signals "for subsequent utilization, e.g.[,] transmission from a transmitting station to a receiving station." [2:43-44]. The described transfer from transmitting to receiving station, "from an encoding site to a decoding site," discloses transmission of a compressed video stream to an external device. [1:8-13]
995-19. An audio/video transceiver apparatus as in claim 17 in combination with a video library, coupled via a communication link with said audio/video transceiver apparatus, said video library storing a multiplicity of items of audio/video source information in said time compressed representation for selective retrieval, in said associated burst time period over said communication link.	In the Gremillet patent that the distribution center receives the audio works for distribution. "[T]he distribution center 10 comprises a bank 11 of musical recordings recorded at a faster speed than normal." [3:37-40] These works may be in analog form and then converted by the transceiver. [5:7-9] This sound information is "obtained by writing [it] into a memory and then reading from the memory at the accelerated speed." [3:42-44] The Tescher patent describes the compression, encoding, and buffering of time domain information signals "for subsequent utilization, e.g.[,] transmission from a transmitting station to a receiving station." [2:43-44]. As illustrated in Fig. 1, the system receives video source information through an analog processor: "analog video signals are coupled to the input of an analog processor unit 11 . . . and converted to multi-bit digital samples." [5:32-37]
995-20. An audio/video transceiver apparatus as in claim 1 further comprising:	Gremillet discloses a music on demand system for "the teledistribution of recorded information" that "offers[s], to requesting users, any piece of music of their choice . . . [transmitted] in a few seconds" from a distribution center using the "transmission channels used in television." [1:47-50; 1:64-

	68; 2:3-8; 3:5-10]
decompression means, coupled to said random access storage means, for selectively decompressing said time compressed representation of said audio/video source information stored in said random access storage means; and	Gremillet describes the ability "to restore the normal speed to the information and finally a sound restoration chain 25 connected to the rate converter," which decompresses the transmitted representation. [3:55-62] Tescher discloses a decompression means, illustrated at Fig. 2, that applies "essentially the inverse of the encoding process": "For each frame of encoded information, the first and second control code signals are used to establish the initial minimum quantization interval to be employed for inverse quantizing the block replenishment code symbols. The received replenishment code symbols are decoded using a parallel set of inverse code tables, which are selected using the same predictive mean algorithm as that employed in the encoding process. The block address, quadrature chrominance and D.C. term codes are coupled directly to a diagonal memory unit, while the coefficient code terms are inverse quantized by multiplying each code term by D_k, using the transmitted initial value of D_K for the first block of data, and the resulting coefficients are stored in the diagonal memory unit. After the first block has been decoded, the distortion constant D_k is recalculated and the newly calculated value of D_k is used to inverse quantize the next block of data. The coefficients stored in the diagonal memory unit are then transformed to time domain digital samples using an inverse discrete cosine transform, and the resulting samples are stored in an output memory unit, replacing previous samples representing the same block. The merged field samples stored in the output memory unit, which replicate the merged field samples stored in a corresponding reference memory unit at the encoder stie [sic], are finally processed to provide video output signals." [4:24-52; *see also* 10:7-42]

editing means, coupled to said random access storage means and decompression means, for editing said selectively decompressed time compressed representation of said audio/video source information, and for storing said edited selectively decompressed time compressed representation of said audio/video source information in said random access storage means.	
995-22. An audio/video transceiver apparatus as in claim 1 further comprising:	Gremillet discloses a music on demand system for "the teledistribution of recorded information" that "offers[s], to requesting users, any piece of music of their choice . . . [transmitted] in a few seconds" from a distribution center using the "transmission channels used in television." [1:47-50; 1:64-68; 2:3-8; 3:5-10]
decompression means, coupled to said random access storage means, for selectively decompressing the time compressed representation of said audio/video source information stored in said random access storage means; and	Tescher discloses a decompression means, illustrated at Fig. 2, that applies "essentially the inverse of the encoding process": "For each frame of encoded information, the first and second control code signals are used to establish the initial minimum quantization interval to be employed for inverse quantizing the block replenishment code symbols. The received replenishment code symbols are decoded using a parallel set of inverse code tables, which are selected using the same predictive mean algorithm as that employed in the encoding process. The block address, quadrature chrominance and D.C. term codes are coupled directly to a diagonal memory unit, while the coefficient code terms are inverse quantized by multiplying each code term by D_k, using the transmitted initial value of D_K for the first block of data, and the resulting coefficients are stored in the diagonal memory unit. After the first block has been decoded, the distortion constant D_k is recalculated and the newly calculated value of D_k is used to inverse quantize the next block of data. The coefficients stored in the diagonal memory unit are

	then transformed to time domain digital samples using an inverse discrete cosine transform, and the resulting samples are stored in an output memory unit, replacing previous samples representing the same block. The merged field samples stored in the output memory unit, which replicate the merged field samples stored in a corresponding reference memory unit at the encoder stie [sic], are finally processed to provide video output signals." [4:24-52; *see also* 10:7-42]
monitor means for enabling the user to view the selectively decompressed time compressed representation of said audio/video source information.	
995-23. An audio/video transceiver apparatus as in claim 8 further comprising:	Gremillet discloses a music on demand system for "the teledistribution of recorded information" that "offers[s], to requesting users, any piece of music of their choice . . . [transmitted] in a few seconds" from a distribution center using the "transmission channels used in television." [1:47-50; 1:64-68; 2:3-8; 3:5-10]
decompression means, coupled to said random access storage means, for selectively decompressing the digital time compressed representation of said corresponding digital audio/video source information stored in said random access storage means; and	Tescher discloses a decompression means, illustrated at Fig. 2, that applies "essentially the inverse of the encoding process": "For each frame of encoded information, the first and second control code signals are used to establish the initial minimum quantization interval to be employed for inverse quantizing the block replenishment code symbols. The received replenishment code symbols are decoded using a parallel set of inverse code tables, which are selected using the same predictive mean algorithm as that employed in the encoding process. The block address, quadrature chrominance and D.C. term codes are coupled directly to a diagonal memory unit, while the coefficient code terms are inverse quantized by multiplying each code term by D_k, using the transmitted initial value of D_K for the first block of data, and the resulting coefficients are stored in the diagonal

	memory unit. After the first block has been decoded, the distortion constant D_k is recalculated and the newly calculated value of D_k is used to inverse quantize the next block of data. The coefficients stored in the diagonal memory unit are then transformed to time domain digital samples using an inverse discrete cosine transform, and the resulting samples are stored in an output memory unit, replacing previous samples representing the same block. The merged field samples stored in the output memory unit, which replicate the merged field samples stored in a corresponding reference memory unit at the encoder stie [sic], are finally processed to provide video output signals." [4:24-52; *see also* 10:7-42]
editing means, coupled to said random access storage means and decompression means, for editing the decompressed digital time compressed representation of said corresponding digital audio/video source information and for then storing the edited decompressed digital time compressed representation of said corresponding digital audio/video source information in said random access storage means.	
995-44. An audio/video transceiver apparatus as in claim 1 further comprising recording means, including a removable recording medium coupled to said random access storage means, for storing the time compressed representation of said audio/video source information stored in said random access storage means onto said removable recording medium.	Tescher discloses compression of video "for subsequent utilization, e.g.[,] . . . recording on video tape or other magnetic media, etc." [2:43-45]
995-47. An audio/video transceiver apparatus as in claim 17 further comprising recording means, including a removable recording medium, coupled to said random access storage means, for enabling user to selectively view the time compressed representation of said audio/video source information stored in said random access storage means onto said removable	The Gremillet patent discloses "recording support [which] can be a video disk or a video recorder." [3:40-42] This "information recording bank" can be formed from the audio source information "by writing into a memory and then reading from the memory at an accelerated speed." [3:42-44]

recording medium.	The Tescher patent discloses the compression of an input video stream "for subsequent utilization, e.g.[,] . . . recording on video tape or other magnetic media, etc." [2:43-45] Tescher thus anticipates coupling the output of the compression means to a random access storage means such as a hard disk for the purpose of storing the compressed video.
995-51. An audio/video transceiver apparatus as in claim 9 further comprising CD-ROM means for providing said digital audio/video source information.	
995-52. An audio/video transceiver apparatus as in claim 9 further comprising erasable optical disc means for providing said digital audio/video source information.	
995-80. An audio/video transceiver apparatus as in claim 1 further comprising editing means, coupled to said random access storage means, for editing said time compressed representation of said audio/video source information and for then storing the edited time compressed representation of said audio/video source information in said random access storage means.	

B. Claim chart for Gremillet & Tescher for the '839

Asserted U.S. Patent No. 5,164,839	Gremillet & Tescher
839-1. A method for handling audio/video source information, the method comprising:	Gremillet discloses a music on demand system for "the teledistribution of recorded information" that "offers[s], to requesting users, any piece of music of their choice . . . [transmitted] in a few seconds" from a distribution center using the "transmission channels used in television." [1:47-50; 1:64-68; 2:3-8; 3:5-10]
[a] receiving audio/video source information;	In the Gremillet patent that the distribution center receives the audio works for distribution. "[T]he distribution center 10 comprises a bank 11 of musical recordings recorded at a faster speed than normal." [3:37-40] These works may be in analog form and then converted by the transceiver. [5:7-9] This sound information is "obtained by writing [it] into a memory and then reading from the memory at the accelerated speed." [3:42-44] The Tescher patent describes the compression, encoding, and buffering of time domain information signals "for subsequent utilization, e.g.[,] transmission from a transmitting station to a receiving station." [2:43-44]. As illustrated in Fig. 1, the system receives video source information through an analog processor: "analog video signals are coupled to the input of an analog processor unit 11 . . . and converted to multi-bit digital samples." [5:32-37]
[b] compressing the received audio/video source information into a time compressed representation thereof having an associated burst time period that is shorter than a time period associated with a real time representation of the received audio/video source information;	Gremillet refers to the music it transmits as "compressed" but does not expressly describe a reduction in the number of bits used to represent the music: "the compression of the sound information can be obtained by writing into a memory and then reading from the memory at the accelerated speed." [3:42-45]

	Gremillet describes the "information flow rate" of the musical works it transmits as "approximately 0.5 Mbit/s." This is less than the data rate of an uncompressed wideband audio signal (e.g. CD audio) which is approximately 0.7 Mbit/s, which suggests that the audio information Gremillet transmits has also been compressed in a manner that reduces the number of bits used to represent the music. It would also have been obvious to combine Gremillet with any one of several known compression technologies, including those disclosed in the U.S. Patent No. 4,541,012 ("the Tescher Patent"), which discloses a lower bitrate for compressed video than the rate disclosed for faster-than-real-time transmission of audio in Gremillet. The Tescher patent illustrates in Fig. 1 "a block diagram illustrating an encoder incorporating the invention." [5:7-8]. This encoder uses both intraframe and interframe compression. Tescher uses an interframe compression technique of "comparing corresponding blocks of time domain information signals from successive fields." [1:25-45] The Tescher patent also describes using a type of intraframe compression known as "transform domain encoding," in which "each field of information signals is divided into a number of rectangular or square arrays of individual picture elements," rather than storing individual pixels. [1:59-66] In addition, the Tescher patent employs a Huffman coding technique, which was a well-known method for data compression. [6:67-7:63]

	These various compression techniques yield a compressed full-motion video bit rate of "2.39 X 10^5 bits per second [or more simply, 0.239 Mbits per second] which is 0.25 percent of the standard uncompressed digital bit rate." [11:61-12:1] "The equivalent digital samples produced in analog processor unit 11 are coupled to the input of an input digital processor 12 in which incoming field samples are merged with the corresponding samples from the previous field." [5:39-44]
[c] storing said time compressed representation of the received audio/video source information; and	The Gremillet patent discloses "recording support [which] can be a video disk or a video recorder." [3:40-42] This "information recording bank" can be formed from the audio source information "by writing into a memory and then reading from the memory at an accelerated speed." [3:42-44] Tescher discloses the compression of an input video stream "for subsequent utilization, e.g.[,] . . . recording on video tape or other magnetic media, etc." [2:43-45] Tescher thus anticipates coupling the output of the compression means to a random access storage means such as a hard disk for the purpose of storing the compressed video.
[d] transmitting, in said burst time period, the stored time compressed representation of the received audio/video source information to a selected destination.	Gremillet explains that "[t]he information flow rate linked with classical music is approximately 0.5 Mbits/s. However, the information flow rate of picture transmission channel used in television (either broadcast, or by optical fibres or cable) is well above this value." [2:1-8] This makes it possible to transmit "music comparessed [sic] in a factor of 200," meaning that "a musical work lasting one hour can be transmitted in 18 seconds." [2:8-12] Gremillet describes a "video recorder" which is "housed with the requesting subscriber" and records the transmitted information:

	"the writing phase continues until the work has been completely recorded. However, as stated hereinbefore, this phase is of a short duration, in view of the high compression level of the recorder information (greater than 100)." [4:16-40; *see also* Claim 1] Gremillet describes the "information flow rate" of the musical works it transmits as "approximately 0.5 Mbit/s." This is less than the data rate of an uncompressed wideband audio signal (e.g. CD audio) which is approximately 0.7 Mbit/s, which suggests that the audio information Gremillet transmits has also been compressed in a manner that reduces the number of bits used to represent the music. Gremillet describes a "broadcasting means consisting of a transmitter 31, a transmitting antenna 32, a receiving antenna 33, or a cable or optical fibres 34,' connecting the distribution center with the subscriber equipment. [4:1-7] Tescher describes the compression, encoding, and buffering of time domain information signals "for subsequent utilization, e.g.[,] transmission from a transmitting station to a receiving station." [2:43-44]. The described transfer from transmitting to receiving station, "from an encoding site to a decoding site," discloses transmission of a compressed video stream to an external device. [1:8-13]
839-2. A method as in claim 1 nps of:	
editing the stored time compressed representation of said audio/video source information; and	
storing the edited time compressed representation of said audio/video source information.	

839-3. A method as in claim 2 further comprising the step of monitoring the stored, time compressed representation of said audio/video source information during editing.	
839-9. A method as in claim 1 wherein: said audio/video source information comprises digital audio/video source information;	
said step of compressing comprises compressing said digital audio/video source information into a digital time compressed representation thereof having an associated burst time period that is shorter than a time period associated with a real time representation of said digital audio/video source information; and	Gremillet refers to the music it transmits as "compressed" but does not expressly describe a reduction in the number of bits used to represent the music: "the compression of the sound information can be obtained by writing into a memory and then reading from the memory at the accelerated speed." [3:42-45] Gremillet describes the "information flow rate" of the musical works it transmits as "approximately 0.5 Mbit/s." This is less than the data rate of an uncompressed wideband audio signal (e.g. CD audio) which is approximately 0.7 Mbit/s, which suggests that the audio information Gremillet transmits has also been compressed in a manner that reduces the number of bits used to represent the music. It would also have been obvious to combine Gremillet with any one of several known compression technologies, including those disclosed in the U.S. Patent No. 4,541,012 ("the Tescher Patent"), which discloses a lower bitrate for compressed video than the rate disclosed for faster-than-real-time transmission of audio in Gremillet. The Tescher patent illustrates in Fig. 1 "a block diagram illustrating an encoder incorporating the invention." [5:7-8]. This encoder uses both intraframe and interframe compression. Tescher uses an interframe compression technique of

	"comparing corresponding blocks of time domain information signals from successive fields." [1:25-45] The Tescher patent also describes using a type of intraframe compression known as "transform domain encoding," in which "each field of information signals is divided into a number of rectangular or square arrays of individual picture elements," rather than storing individual pixels. [1:59-66] In addition, the Tescher patent employs a Huffman coding technique, which was a well-known method for data compression. [6:67-7:63] These various compression techniques yield a compressed full-motion video bit rate of "2.39 X 10^5 bits per second [or more simply, 0.239 Mbits per second] which is 0.25 percent of the standard uncompressed digital bit rate." [11:61-12:1] "The equivalent digital samples produced in analog processor unit 11 are coupled to the input of an input digital processor 12 in which incoming field samples are merged with the corresponding samples from the previous field." [5:39-44]
said step of storing comprises storing said digital time compressed representation of said digital audio/video source information.	The Gremillet patent discloses "recording support [which] can be a video disk or a video recorder." [3:40-42] This "information recording bank" can be formed from the audio source information "by writing into a memory and then reading from the memory at an accelerated speed." [3:42-44] The Tescher patent discloses the compression of an input video stream "for subsequent utilization, e.g.[,] . . . recording on video tape or other magnetic media, etc." [2:43-45] Tescher thus anticipates coupling the output of the compression means to a

	random access storage means such as a hard disk for the purpose of storing the compressed video.
839-15. A method as in claim 9 wherein said audio/video source information comprises information received from a computer.	
839-17. A method for handling audio/video source information, the method comprising:	Gremillet discloses a music on demand system for "the teledistribution of recorded information" that "offers[s], to requesting users, any piece of music of their choice . . . [transmitted] in a few seconds" from a distribution center using the "transmission channels used in television." [1:47-50; 1:64-68; 2:3-8; 3:5-10] The distribution center has a television transmitter, either a "transmitting antenna" or "a cable or optical fibres" that connect with the subscriber's equipment. [4:1-7]
[a] receiving audio/video source information as a time compressed representation thereof, said time compressed representation of said audio/video source information being received over an associated burst time period that is shorter than a real time period associated with real time playback of said audio/video source information;	It is inherent in the Gremillet patent that the distribution center receives the audio works for distribution. "[T]he distribution center 10 comprises a bank 11 of musical recordings recorded at a faster speed than normal." [3:37-40] This sound information is "obtained by writing [it] into a memory and then reading from the memory at the accelerated speed." [3:42-44]
[b] storing the time compressed representation of said received audio/video source information; and	The Gremillet patent discloses "recording support [which] can be a video disk or a video recorder." [3:40-42] This "information recording bank" can be formed from the audio source information "by writing into a memory and then reading from the memory at an accelerated speed." [3:42-44] Tescher discloses the compression of an input video stream "for subsequent utilization, e.g.[,] . . . recording on video tape or

	other magnetic media, etc." [2:43-45] Tescher thus anticipates coupling the output of the compression means to a random access storage means such as a hard disk for the purpose of storing the compressed video.
[c] transmitting, in said burst time period, the stored time compressed representation of said received audio/video source information to a selected destination.	Gremillet explains that "[t]he information flow rate linked with classical music is approximately 0.5 Mbits/s. However, the information flow rate of picture transmission channel used in television (either broadcast, or by optical fibres or cable) is well above this value." [2:1-8] This makes it possible to transmit "music comparessed [sic] in a factor of 200," meaning that "a musical work lasting one hour can be transmitted in 18 seconds." [2:8-12] Gremillet describes a "video recorder" which is "housed with the requesting subscriber" and records the transmitted information: "the writing phase continues until the work has been completely recorded. However, as stated hereinbefore, this phase is of a short duration, in view of the high compression level of the recorder information (greater than 100)." [4:16-40; *see also* Claim 1] Gremillet describes the "information flow rate" of the musical works it transmits as "approximately 0.5 Mbit/s." This is less than the data rate of an uncompressed wideband audio signal (e.g. CD audio) which is approximately 0.7 Mbit/s, which suggests that the audio information Gremillet transmits has also been compressed in a manner that reduces the number of bits used to represent the music. Gremillet describes a "broadcasting means consisting of a transmitter 31, a transmitting antenna 32, a receiving antenna 33, or a cable or optical fibres 34,' connecting the distribution center with the subscriber equipment. [4:1-7]

	Tescher describes the compression, encoding, and buffering of time domain information signals "for subsequent utilization, e.g.[,] transmission from a transmitting station to a receiving station." [2:43-44]. The described transfer from transmitting to receiving station, "from an encoding site to a decoding site," discloses transmission of a compressed video stream to an external device. [1:8-13]
839.19. A method as in claim 17 wherein said audio/video source information comprises information received over a communications link from a video library storing a multiplicity of programs of audio/video source information as time compressed representations thereof for selective retrieval by a user in an associated burst time period.	See citations above for claim 17. The Gremillet patent describes system that offers "to requesting users, any piece of music of their choice (or any of the information referred to hereinbefore) and in a few seconds." Gremillet was not limited to only songs, "[t]he scope of the application relates to the teledistribution of musical works, such as read literature works (novels, short stories, essays, plays, etc.). musical works with commentaries, literary works read with background effects, news, courses, conferences etc." [1:11-16] As such, it would have been obvious to combine the efficient video compression techniques disclosed in U.S. Patent Number 4,541,012 ("the Tescher patent") with the system for compression, storage, and faster-than-real-time transmission of media files disclosed in the Gremilet patent. The compression techniques disclosed in the Tescher patent produce video files that have one-half of the bitrate of the audio files already sent faster-than-real-time as described in the Gremillet patent. Specifically, the Gremillet patent discloses the storage and faster-than-real-time transmission of compressed sound recordings that have a bitrate of 0.5 Mbits per second. [2:3-4] But using the compression techniques described in Tescher,

	video programs can be compressed down to a bitrate of 0.239 Mbits per second. [Tescher Patent at 11:52-12:1] It would have been obvious to combine the media compression, storage, and transmission system disclosed in the Gremillet patent with the video compression described in the Tescher patent to allow the storage and distribution of video, because the signal bitrate in Tescher is lower than the signal bitrate disclosed in Gremillet.
839-20. A method as in claim 1 further comprising the steps of:	
selectively decompressing the stored time compressed representation of said audio/video source information;	Tescher discloses a decompression means, illustrated at Fig. 2, that applies "essentially the inverse of the encoding process": "For each frame of encoded information, the first and second control code signals are used to establish the initial minimum quantization interval to be employed for inverse quantizing the block replenishment code symbols. The received replenishment code symbols are decoded using a parallel set of inverse code tables, which are selected using the same predictive mean algorithm as that employed in the encoding process. The block address, quadrature chrominance and D.C. term codes are coupled directly to a diagonal memory unit, while the coefficient code terms are inverse quantized by multiplying each code term by D_k, using the transmitted initial value of D_K for the first block of data, and the resulting coefficients are stored in the diagonal memory unit. After the first block has been decoded, the distortion constant D_k is recalculated and the newly calculated value of D_k is used to inverse quantize the next block of data. The coefficients stored in the diagonal memory unit are then transformed to time domain digital samples using an inverse discrete cosine transform, and the resulting samples are stored in an output memory unit, replacing previous samples representing the same block. The merged field samples stored

	in the output memory unit, which replicate the merged field samples stored in a corresponding reference memory unit at the encoder stie [sic], are finally processed to provide video output signals." [4:24-52; *see also* 10:7-42]
editing the selectively decompressed time compressed representation of said audio/video source information; and	
storing the edited selectively decompressed time compressed representation of said audio/video source information.	
839-28. A method as in claim 9 further comprising the steps of:	
selectively decompressing the stored digital time compressed representation of said digital audio/video source information; and	Tescher discloses a decompression means, illustrated at Fig. 2, that applies "essentially the inverse of the encoding process": "For each frame of encoded information, the first and second control code signals are used to establish the initial minimum quantization interval to be employed for inverse quantizing the block replenishment code symbols. The received replenishment code symbols are decoded using a parallel set of inverse code tables, which are selected using the same predictive mean algorithm as that employed in the encoding process. The block address, quadrature chrominance and D.C. term codes are coupled directly to a diagonal memory unit, while the coefficient code terms are inverse quantized by multiplying each code term by D_k, using the transmitted initial value of D_K for the first block of data, and the resulting coefficients are stored in the diagonal memory unit. After the first block has been decoded, the distortion constant D_k is recalculated and the newly calculated value of D_k is used to inverse quantize the next block of data. The coefficients stored in the diagonal memory unit are then transformed to time domain digital samples using an inverse discrete cosine transform, and the resulting samples are stored in an output memory unit, replacing previous samples

	representing the same block. The merged field samples stored in the output memory unit, which replicate the merged field samples stored in a corresponding reference memory unit at the encoder stie [sic], are finally processed to provide video output signals." [4:24-52; *see also* 10:7-42]
visually displaying the selectively decompressed digital time compressed representation of said digital audio/video source information for selective viewing by a user.	
839-44. A method as in claim 1 further comprising the step of recording the stored time compressed representation of said audio/video source information onto a removable recording medium.	Tescher discloses compression of video "for subsequent utilization, e.g.[,] . . . recording on video tape or other magnetic media, etc." [2:43-45]
839-45. A method as in claim 2 further comprising the step of recording the edited time compressed representation of said audio/video source information onto a removable recording medium.	
839.47. A method as in claim 17 further comprising the step of recording the time compressed representation of said audio/video source information onto a removable recording medium.	Tescher discloses compression of video "for subsequent utilization, e.g.[,] . . . recording on video tape or other magnetic media, etc." [2:43-45]
839-51. A method as in claim 9 wherein said digital audio/video source information is received from a CD-ROM.	
839-76. A method for handling audio/video source information, the method comprising:	Gremillet discloses a music on demand system for "the teledistribution of recorded information" that "offers[s], to requesting users, any piece of music of their choice . . . [transmitted] in a few seconds" from a distribution center using the "transmission channels used in television." [1:47-50; 1:64-68; 2:3-8; 3:5-10]
[a] receiving audio/video source information comprising a	It is inherent in the Gremillet patent that the distribution center

multiplicity of video frames in the form of one or more full motion video programs;	receives the audio works for distribution. "[T]he distribution center 10 comprises a bank 11 of musical recordings recorded at a faster speed than normal." [3:37-40] This sound information is "obtained by writing [it] into a memory and then reading from the memory at the accelerated speed." [3:42-44] It would have been obvious to combine the efficient video compression techniques disclosed in U.S. Patent Number 4,541,012 ("the Tescher patent") with the system for compression, storage, and faster-than-real-time transmission of media files disclosed in the Gremilet patent. The compression techniques disclosed in the Tescher patent produce video files that have one-half of the bitrate of the audio files already sent faster-than-real-time as described in the Gremillet patent. Specifically, the Gremillet patent discloses the storage and faster-than-real-time transmission of compressed sound recordings that have a bitrate of 0.5 Mbits per second. [2:3-4] But using the compression techniques described in Tescher, video programs can be compressed down to a bitrate of 0.239 Mbits per second. [Tescher Patent at 11:52-12:1] It would have been obvious to combine the media compression, storage, and transmission system disclosed in the Gremillet patent with the video compression described in the Tescher patent to allow the storage and distribution of video, because the signal bitrate in Tescher is lower than the signal bitrate disclosed in Gremillet. As illustrated in Fig. 1, the system receives video source information through an analog processor: "analog video signals are coupled to the input of an analog processor unit 11 . . . and converted to multi-bit digital samples." [5:32-34]
[b] compressing said received audio/video source information	Gremillet refers to the music it transmits as "compressed" but

into a time compressed representation thereof having an associated burst time period that is shorter than a time period associated with a real time representation of said received audio/video source information;	does not expressly describe a reduction in the number of bits used to represent the music: "the compression of the sound information can be obtained by writing into a memory and then reading from the memory at the accelerated speed." [3:42-45] Gremillet describes the "information flow rate" of the musical works it transmits as "approximately 0.5 Mbit/s." This is less than the data rate of an uncompressed wideband audio signal (e.g. CD audio) which is approximately 0.7 Mbit/s, which suggests that the audio information Gremillet transmits has also been compressed in a manner that reduces the number of bits used to represent the music. It would also have been obvious to combine Gremillet with any one of several known compression technologies, including those disclosed in the U.S. Patent No. 4,541,012 ("the Tescher Patent"), which discloses a lower bitrate for compressed video than the rate disclosed for faster-than-real-time transmission of audio in Gremillet. The Tescher patent illustrates in Fig. 1 "a block diagram illustrating an encoder incorporating the invention." [5:7-8]. This encoder uses both intraframe and interframe compression. Tescher uses an interframe compression technique of "comparing corresponding blocks of time domain information signals from successive fields." [1:25-45] The Tescher patent also describes using a type of intraframe compression known as "transform domain encoding," in which "each field of information signals is divided into a number of rectangular or square arrays of individual picture elements," rather than storing individual pixels. [1:59-66]

	In addition, the Tescher patent employs a Huffman coding technique, which was a well-known method for data compression. [6:67-7:63] These various compression techniques yield a compressed full-motion video bit rate of "2.39 X 10^5 bits per second [or more simply, 0.239 Mbits per second] which is 0.25 percent of the standard uncompressed digital bit rate." [11:61-12:1] "The equivalent digital samples produced in analog processor unit 11 are coupled to the input of an input digital processor 12 in which incoming field samples are merged with the corresponding samples from the previous field." [5:39-44]
[c] storing the time compressed representation of said received audio/video source information on one or more magnetic disks; and	The Gremillet patent discloses "recording support [which] can be a video disk or a video recorder." [3:40-42] This "information recording bank" can be formed from the audio source information "by writing into a memory and then reading from the memory at an accelerated speed." [3:42-44] It would have been obvious to combine the Gremillet patent with references disclosing different storage mediums. For example, at Gremillet describes the video recorder at the user station recording transmitted works using a magnetoscope. [4:23-25] It would have been obvious to store the audio works on hard disk. [*See, e.g.*, "Peripheral Storage: Who's Got What" at APBU 714-725] Tescher discloses the compression of an input video stream "for subsequent utilization, e.g.[,] . . . recording on video tape or other magnetic media, etc." [2:43-45] Tescher thus anticipates coupling the output of the compression means to a

	random access storage means such as a hard disk for the purpose of storing the compressed video.
[d] transmitting, in said burst time period, the stored time compressed representation of said received audio/video source information to a selected destination.	Gremillet explains that "[t]he information flow rate linked with classical music is approximately 0.5 Mbits/s. However, the information flow rate of picture transmission channel used in television (either broadcast, or by optical fibres or cable) is well above this value." [2:1-8] This makes it possible to transmit "music comparessed [sic] in a factor of 200," meaning that "a musical work lasting one hour can be transmitted in 18 seconds." [2:8-12] Gremillet describes a "video recorder" which is "housed with the requesting subscriber" and records the transmitted information: "the writing phase continues until the work has been completely recorded. However, as stated hereinbefore, this phase is of a short duration, in view of the high compression level of the recorder information (greater than 100)." [4:16-40; *see also* Claim 1] Gremillet describes the "information flow rate" of the musical works it transmits as "approximately 0.5 Mbit/s." This is less than the data rate of an uncompressed wideband audio signal (e.g. CD audio) which is approximately 0.7 Mbit/s, which suggests that the audio information Gremillet transmits has also been compressed in a manner that reduces the number of bits used to represent the music. Gremillet describes a "broadcasting means consisting of a transmitter 31, a transmitting antenna 32, a receiving antenna 33, or a cable or optical fibres 34,' connecting the distribution center with the subscriber equipment. [4:1-7] Tescher describes the compression, encoding, and buffering of

	time domain information signals "for subsequent utilization, e.g.[,] transmission from a transmitting station to a receiving station." [2:43-44]. The described transfer from transmitting to receiving station, "from an encoding site to a decoding site," discloses transmission of a compressed video stream to an external device. [1:8-13]
839-77. A method for handling audio/video source information, the method comprising:	Gremillet discloses a music on demand system for "the teledistribution of recorded information" that "offers[s], to requesting users, any piece of music of their choice . . . [transmitted] in a few seconds" from a distribution center using the "transmission channels used in television." [1:47-50; 1:64-68; 2:3-8; 3:5-10] This makes it possible to transmit "music comparessed [sic] in a factor of 200," meaning that "a musical work lasting one hour can be transmitted in 18 seconds." [2:8-12]
receiving audio/video source information as a time compressed digital representation thereof, said audio/video source information comprising a multiplicity of video frames in the form of one or more full motion video programs selected from a video library storing a multiplicity of full motion video programs in a time compressed digital representation thereof for selective retrieval, said time compressed digital representation of the received audio/video source information being received in an associated burst time period that is shorter than a time period associated in an associated burst time period that is shorter than a time period associated with a real time representation of said received audio/video source information;	In the Gremillet patent that the distribution center receives the audio works for distribution. "[T]he distribution center 10 comprises a bank 11 of musical recordings recorded at a faster speed than normal." [3:37-40] These works may be in analog form and then converted by the transceiver. [5:7-9] This sound information is "obtained by writing [it] into a memory and then reading from the memory at the accelerated speed." [3:42-44] The Tescher patent describes the compression, encoding, and buffering of time domain information signals "for subsequent utilization, e.g.[,] transmission from a transmitting station to a receiving station." [2:43-44]. As illustrated in Fig. 1, the system receives video source information through an analog processor: "analog video signals are coupled to the input of an

	analog processor unit 11 . . . and converted to multi-bit digital samples." [5:32-37]
storing the time compressed digital representation of said received audio/video source information; and	The Gremillet patent discloses "recording support [which] can be a video disk or a video recorder." [3:40-42] This "information recording bank" can be formed from the audio source information "by writing into a memory and then reading from the memory at an accelerated speed." [3:42-44] The Tescher patent discloses the compression of an input video stream "for subsequent utilization, e.g.[,] . . . recording on video tape or other magnetic media, etc." [2:43-45] Tescher thus anticipates coupling the output of the compression means to a random access storage means such as a hard disk for the purpose of storing the compressed video.
transmitting, in said burst time period, the stored time compressed digital representation of said received audio/video source information to a selected destination.	Gremillet explains that "[t]he information flow rate linked with classical music is approximately 0.5 Mbits/s. However, the information flow rate of picture transmission channel used in television (either broadcast, or by optical fibres or cable) is well above this value." [2:1-8] This makes it possible to transmit "music comparessed [sic] in a factor of 200," meaning that "a musical work lasting one hour can be transmitted in 18 seconds." [2:8-12] Gremillet describes a "video recorder" which is "housed with the requesting subscriber" and records the transmitted information: "the writing phase continues until the work has been completely recorded. However, as stated hereinbefore, this phase is of a short duration, in view of the high compression level of the recorder information (greater than 100)." [4:16-40; *see also* Claim 1]

	Gremillet describes the "information flow rate" of the musical works it transmits as "approximately 0.5 Mbit/s." This is less than the data rate of an uncompressed wideband audio signal (e.g. CD audio) which is approximately 0.7 Mbit/s, which suggests that the audio information Gremillet transmits has also been compressed in a manner that reduces the number of bits used to represent the music. Gremillet describes a "broadcasting means consisting of a transmitter 31, a transmitting antenna 32, a receiving antenna 33, or a cable or optical fibres 34,' connecting the distribution center with the subscriber equipment. [4:1-7] Tescher describes the compression, encoding, and buffering of time domain information signals "for subsequent utilization, e.g.[,] transmission from a transmitting station to a receiving station." [2:43-44]. The described transfer from transmitting to receiving station, "from an encoding site to a decoding site," discloses transmission of a compressed video stream to an external device. [1:8-13]

C. Claim chart for Gremillet & Tescher for the ’932 Patent

Asserted U.S. Patent No. 5,057,932	Gremillet & Tescher
932-4. An audio/video transceiver apparatus comprising:	Gremillet discloses a music on demand system for “the teledistribution of recorded information” that “offers[s], to requesting users, any piece of music of their choice . . . [transmitted] in a few seconds” from a distribution center using the “transmission channels used in television.” [1:47-50; 1:64-68; 2:3-8; 3:5-10] This makes it possible to transmit “music comparessed [sic] in a factor of 200,” meaning that “a musical work lasting one hour can be transmitted in 18 seconds.” [2:8-12] The distribution center has a television transmitter, either a “transmitting antenna” or “a cable or optical fibres” that connect with the subscriber’s equipment. [4:1-7] Tescher discloses a video compression/decompression system that receives video input, achieves “signal compression of a magnitude substantially greater than that available with known systems,” and transmits that compressed data “for subsequent utilization, e.g.[,] transmission from a transmitting station to a receiving station, recording on video tape or other magnetic media, etc.” [2:29-39; 2:43-45] “This invention relates to information signal processing in general, and in particular to the field of processing time sequential information signals (such as video signals) for the purpose of compressing the amount of information to be transferred from an encoding site to a decoding site.” [1:8-13; see also Abstract; 2:25-26]
[a] input means for receiving audio/video source information,	It is inherent in the Gremillet patent that the distribution center

said audio/video source information comprising a multiplicity of video frames in the form of one or more full motion video programs;	receives the audio works for distribution. "[T]he distribution center 10 comprises a bank 11 of musical recordings recorded at a faster speed than normal." [3:37-40] This sound information is "obtained by writing [it] into a memory and then reading from the memory at the accelerated speed." [3:42-44] It would have been obvious to combine the efficient video compression techniques disclosed in U.S. Patent Number 4,541,012 ("the Tescher patent") with the system for compression, storage, and faster-than-real-time transmission of media files disclosed in the Gremilet patent. The compression techniques disclosed in the Tescher patent produce video files that have one-half of the bitrate of the audio files already sent faster-than-real-time as described in the Gremillet patent. Specifically, the Gremillet patent discloses the storage and faster-than-real-time transmission of compressed sound recordings that have a bitrate of 0.5 Mbits per second. [2:3-4] But using the compression techniques described in Tescher, video programs can be compressed down to a bitrate of 0.239 Mbits per second. [Tescher Patent at 11:52-12:1] It would have been obvious to combine the media compression, storage, and transmission system disclosed in the Gremillet patent with the video compression described in the Tescher patent to allow the storage and distribution of video, because the signal bitrate in Tescher is lower than the signal bitrate disclosed in Gremillet. Tescher discloses the process for comparing each video frame of the input video program against the previous frame: "The equivalent digital samples produced in analog processor unit 11 are coupled to the input of an input digital processor 12 in which incoming field samples are merged with the corresponding

	samples from the previous field in the manner described below." [5:39-44] As illustrated in Fig. 1 of Tescher, the system receives video source information through the input means of an analog processor: "analog video signals are coupled to the input of an analog processor unit 11 . . . and converted to multi-bit digital samples." [5:32-34]
[b] compression means, coupled to said input means, for compressing said audio/video source information into a time compressed representation thereof having an associated time period that is shorter than a time period associated with a real time representation of said audio/video source information;	Gremillet refers to the music it transmits as "compressed" but does not expressly describe a reduction in the number of bits used to represent the music: "the compression of the sound information can be obtained by writing into a memory and then reading from the memory at the accelerated speed." [3:42-45] Gremillet describes the "information flow rate" of the musical works it transmits as "approximately 0.5 Mbit/s." This is less than the data rate of an uncompressed wideband audio signal (e.g. CD audio) which is approximately 0.7 Mbit/s, which suggests that the audio information Gremillet transmits has also been compressed in a manner that reduces the number of bits used to represent the music. It would also have been obvious to combine Gremillet with any one of several known compression technologies, including those disclosed in the U.S. Patent No. 4,541,012 ("the Tescher Patent"), which discloses a lower bitrate for compressed video than the rate disclosed for faster-than-real-time transmission of audio in Gremillet. The Tescher patent illustrates in Fig. 1 "a block diagram illustrating an encoder incorporating the invention." [5:7-8]. This encoder uses both intraframe and interframe compression.

	Tescher uses an interframe compression technique of "comparing corresponding blocks of time domain information signals from successive fields." [1:25-45] The Tescher patent also describes using a type of intraframe compression known as "transform domain encoding," in which "each field of information signals is divided into a number of rectangular or square arrays of individual picture elements," rather than storing individual pixels. [1:59-66] In addition, the Tescher patent employs a Huffman coding technique, which was a well-known method for data compression. [6:67-7:63] These various compression techniques yield a compressed full-motion video bit rate of "2.39 X 10^5 bits per second [or more simply, 0.239 Mbits per second] which is 0.25 percent of the standard uncompressed digital bit rate." [11:61-12:1] "The equivalent digital samples produced in analog processor unit 11 are coupled to the input of an input digital processor 12 in which incoming field samples are merged with the corresponding samples from the previous field." [5:39-44]
[c] random access storage means, coupled to said compression means, for storing the time compressed representation of said audio/video source information, said random access storage means comprising one or [more] magnetic disks; and	The Gremillet patent discloses "recording support [which] can be a video disk or a video recorder." [3:40-42] This "information recording bank" can be formed from the audio source information "by writing into a memory and then reading from the memory at an accelerated speed." [3:42-44] It would have been obvious to combine the Gremillet patent with references disclosing different storage mediums. For example, at Gremillet describes the video recorder at the user station

	recording transmitted works using a magnetoscope. [4:23-25] It would have been obvious to store the audio works on hard disk. [*See, e.g.*, "Peripheral Storage: Who's Got What" at APBU 714-725] Tescher discloses the compression of an input video stream "for subsequent utilization, e.g.[,] . . . recording on video tape or other magnetic media, etc." [2:43-45] Tescher thus anticipates coupling the output of the compression means to a random access storage means such as a hard disk for the purpose of storing the compressed video.
[d] output means, coupled to said random access storage means, for receiving the time compressed audio/video source information stored in said random access storage means for transmission away from said audio/video transceiver apparatus.	Gremillet explains that "[t]he information flow rate linked with classical music is approximately 0.5 Mbits/s. However, the information flow rate of picture transmission channel used in television (either broadcast, or by optical fibres or cable) is well above this value." [2:1-8] This makes it possible to transmit "music comparessed [sic] in a factor of 200," meaning that "a musical work lasting one hour can be transmitted in 18 seconds." [2:8-12] Gremillet describes a "video recorder" which is "housed with the requesting subscriber" and records the transmitted information: "the writing phase continues until the work has been completely recorded. However, as stated hereinbefore, this phase is of a short duration, in view of the high compression level of the recorder information (greater than 100)." [4:16-40; *see also* Claim 1] Gremillet describes the "information flow rate" of the musical works it transmits as "approximately 0.5 Mbit/s." This is less than the data rate of an uncompressed wideband audio signal (e.g. CD audio) which is approximately 0.7 Mbit/s, which suggests that the audio information Gremillet transmits has also

	been compressed in a manner that reduces the number of bits used to represent the music. Gremillet describes a "broadcasting means consisting of a transmitter 31, a transmitting antenna 32, a receiving antenna 33, or a cable or optical fibres 34,' connecting the distribution center with the subscriber equipment. [4:1-7] Tescher describes the compression, encoding, and buffering of time domain information signals "for subsequent utilization, e.g.[,] transmission from a transmitting station to a receiving station." [2:43-44]. The described transfer from transmitting to receiving station, "from an encoding site to a decoding site," discloses transmission of a compressed video stream to an external device. [1:8-13]

D. Claim Chart for Gremillet & Tescher for the '705 Patent

Asserted U.S. Patent No. 5,995,705	Gremillet & Tescher
705-1. An audio/video transceiver apparatus comprising:	Gremillet discloses a music on demand system for "the teledistribution of recorded information" that "offers[s], to requesting users, any piece of music of their choice . . . [transmitted] in a few seconds" from a distribution center using the "transmission channels used in television." [1:47-50; 1:64-68; 2:3-8; 3:5-10] This makes it possible to transmit "music comparessed [sic] in a factor of 200," meaning that "a musical work lasting one hour can be transmitted in 18 seconds." [2:8-12] Tescher discloses a video compression/decompression system that receives video input, achieves "signal compression of a magnitude substantially greater than that available with known systems," and transmits that compressed data "for subsequent utilization, e.g.[,] transmission from a transmitting station to a receiving station, recording on video tape or other magnetic media, etc." [2:29-39; 2:43-45] "This invention relates to information signal processing in general, and in particular to the field of processing time sequential information signals (such as video signals) for the purpose of compressing the amount of information to be transferred from an encoding site to a decoding site." [1:8-13; see also Abstract; 2:25-26]
input means for receiving audio/video source information, said audio/video source information comprising a multiplicity of video frames collectively representing at least one full motion video program;	In the Gremillet patent that the distribution center receives the audio works for distribution. "[T]he distribution center 10 comprises a bank 11 of musical recordings recorded at a faster speed than normal." [3:37-40] These works may be in analog form and then converted by the transceiver. [5:7-9]

	This sound information is "obtained by writing [it] into a memory and then reading from the memory at the accelerated speed." [3:42-44] The Tescher patent describes the compression, encoding, and buffering of time domain information signals "for subsequent utilization, e.g.[,] transmission from a transmitting station to a receiving station." [2:43-44]. As illustrated in Fig. 1, the system receives video source information through an analog processor: "analog video signals are coupled to the input of an analog processor unit 11 . . . and converted to multi-bit digital samples." [5:32-37]
compression means, coupled to said input means, for compressing said audio/video source information into a digital time compressed representation thereof, wherein said digital time compressed representation of said audio/video source information is capable of being transmitted in a burst transmission time period that is substantially shorter than a time period associated with real time viewing by a receiver of said audio/video source information;	Gremillet refers to the music it transmits as "compressed" but does not expressly describe a reduction in the number of bits used to represent the music: "the compression of the sound information can be obtained by writing into a memory and then reading from the memory at the accelerated speed." [3:42-45] Gremillet describes the "information flow rate" of the musical works it transmits as "approximately 0.5 Mbit/s." This is less than the data rate of an uncompressed wideband audio signal (e.g. CD audio) which is approximately 0.7 Mbit/s, which suggests that the audio information Gremillet transmits has also been compressed in a manner that reduces the number of bits used to represent the music. It would also have been obvious to combine Gremillet with any one of several known compression technologies, including those disclosed in the U.S. Patent No. 4,541,012 ("the Tescher Patent"), which discloses a lower bitrate for compressed video than the rate disclosed for faster-than-real-time transmission of audio in Gremillet.

	The Tescher patent illustrates in Fig. 1 "a block diagram illustrating an encoder incorporating the invention." [5:7-8]. This encoder uses both intraframe and interframe compression. Tescher uses an interframe compression technique of "comparing corresponding blocks of time domain information signals from successive fields." [1:25-45] The Tescher patent also describes using a type of intraframe compression known as "transform domain encoding," in which "each field of information signals is divided into a number of rectangular or square arrays of individual picture elements," rather than storing individual pixels. [1:59-66] In addition, the Tescher patent employs a Huffman coding technique, which was a well-known method for data compression. [6:67-7:63] These various compression techniques yield a compressed full-motion video bit rate of "2.39 X 10^5 bits per second [or more simply, 0.239 Mbits per second] which is 0.25 percent of the standard uncompressed digital bit rate." [11:61-12:1] "The equivalent digital samples produced in analog processor unit 11 are coupled to the input of an input digital processor 12 in which incoming field samples are merged with the corresponding samples from the previous field." [5:39-44]
storage means, coupled to said compression means, for storing said digital time compressed representation of said audio/video source information; and	The Gremillet patent discloses "recording support [which] can be a video disk or a video recorder." [3:40-42] This "information recording bank" can be formed from the audio source information "by writing into a memory and then reading

	from the memory at an accelerated speed." [3:42-44] The Tescher patent discloses the compression of an input video stream "for subsequent utilization, e.g.[,] . . . recording on video tape or other magnetic media, etc." [2:43-45] Tescher thus anticipates coupling the output of the compression means to a random access storage means such as a hard disk for the purpose of storing the compressed video.
transmission means, coupled to said storage means, for transmitting said digital time compressed representation of said audio/video source information away from said audio/video transceiver apparatus in said burst transmission time period.	Gremillet explains that "[t]he information flow rate linked with classical music is approximately 0.5 Mbits/s. However, the information flow rate of picture transmission channel used in television (either broadcast, or by optical fibres or cable) is well above this value." [2:1-8] This makes it possible to transmit "music comparessed [sic] in a factor of 200," meaning that "a musical work lasting one hour can be transmitted in 18 seconds." [2:8-12] Gremillet describes a "video recorder" which is "housed with the requesting subscriber" and records the transmitted information: "the writing phase continues until the work has been completely recorded. However, as stated hereinbefore, this phase is of a short duration, in view of the high compression level of the recorder information (greater than 100)." [4:16-40; *see also* Claim 1] Gremillet describes the "information flow rate" of the musical works it transmits as "approximately 0.5 Mbit/s." This is less than the data rate of an uncompressed wideband audio signal (e.g. CD audio) which is approximately 0.7 Mbit/s, which suggests that the audio information Gremillet transmits has also been compressed in a manner that reduces the number of bits used to represent the music.

	Gremillet describes a "broadcasting means consisting of a transmitter 31, a transmitting antenna 32, a receiving antenna 33, or a cable or optical fibres 34,' connecting the distribution center with the subscriber equipment. [4:1-7] Tescher describes the compression, encoding, and buffering of time domain information signals "for subsequent utilization, e.g.[,] transmission from a transmitting station to a receiving station." [2:43-44]. The described transfer from transmitting to receiving station, "from an encoding site to a decoding site," discloses transmission of a compressed video stream to an external device. [1:8-13]
705-2. The audio/video transceiver apparatus of claim 1, further comprising editing means, coupled to said storage means, for editing the digital time compressed representation of said audio/video source information stored in said storage means and for storing the edited digital time compressed representation of said audio/video source information in said storage means.	
705-3. The audio/video transceiver apparatus of claim 2, wherein said transmission means is configured to receive the edited digital time compressed representation of said audio/video source information and to transmit the edited digital time compressed representation of said audio/video source information away from said audio/video transceiver apparatus in said burst transmission time period.	
705-12. A method for handling audio/video source information, the method comprising the steps of:	Gremillet discloses a music on demand system for "the teledistribution of recorded information" that "offers[s], to requesting users, any piece of music of their choice . . . [transmitted] in a few seconds" from a distribution center using the "transmission channels used in television." [1:47-50; 1:64-

	68; 2:3-8; 3:5-10] This makes it possible to transmit "music comparessed [sic] in a factor of 200," meaning that "a musical work lasting one hour can be transmitted in 18 seconds." [2:8-12]
receiving audio/video source information, said audio/video source information comprising a multiplicity of video frames collectively constituting at least one full motion video program;	In the Gremillet patent that the distribution center receives the audio works for distribution. "[T]he distribution center 10 comprises a bank 11 of musical recordings recorded at a faster speed than normal." [3:37-40] These works may be in analog form and then converted by the transceiver. [5:7-9] This sound information is "obtained by writing [it] into a memory and then reading from the memory at the accelerated speed." [3:42-44] The Tescher patent describes the compression, encoding, and buffering of time domain information signals "for subsequent utilization, e.g.[,] transmission from a transmitting station to a receiving station." [2:43-44]. As illustrated in Fig. 1, the system receives video source information through an analog processor: "analog video signals are coupled to the input of an analog processor unit 11 . . . and converted to multi-bit digital samples." [5:32-37]
compressing the received audio/video source information into a digital time compressed representation thereof, the digital time compressed representation of said audio/video source information having an associated burst transmission time period that is substantially shorter than a time period associated with real time viewing by a receiver of said audio/video source information;	Gremillet refers to the music it transmits as "compressed" but does not expressly describe a reduction in the number of bits used to represent the music: "the compression of the sound information can be obtained by writing into a memory and then reading from the memory at the accelerated speed." [3:42-45] Gremillet describes the "information flow rate" of the musical works it transmits as "approximately 0.5 Mbit/s." This is less than the data rate of an uncompressed wideband audio signal (e.g. CD audio) which is approximately 0.7 Mbit/s, which

	suggests that the audio information Gremillet transmits has also been compressed in a manner that reduces the number of bits used to represent the music. It would also have been obvious to combine Gremillet with any one of several known compression technologies, including those disclosed in the U.S. Patent No. 4,541,012 ("the Tescher Patent"), which discloses a lower bitrate for compressed video than the rate disclosed for faster-than-real-time transmission of audio in Gremillet. The Tescher patent illustrates in Fig. 1 "a block diagram illustrating an encoder incorporating the invention." [5:7-8]. This encoder uses both intraframe and interframe compression. Tescher uses an interframe compression technique of "comparing corresponding blocks of time domain information signals from successive fields." [1:25-45] The Tescher patent also describes using a type of intraframe compression known as "transform domain encoding," in which "each field of information signals is divided into a number of rectangular or square arrays of individual picture elements," rather than storing individual pixels. [1:59-66] In addition, the Tescher patent employs a Huffman coding technique, which was a well-known method for data compression. [6:67-7:63] These various compression techniques yield a compressed full-motion video bit rate of "2.39 X 10^5 bits per second [or more simply, 0.239 Mbits per second] which is 0.25 percent of the standard uncompressed digital bit rate." [11:61-12:1]

	"The equivalent digital samples produced in analog processor unit 11 are coupled to the input of an input digital processor 12 in which incoming field samples are merged with the corresponding samples from the previous field." [5:39-44]
storing the digital time compressed representation of said audio/video source information; and	The Gremillet patent discloses "recording support [which] can be a video disk or a video recorder." [3:40-42] This "information recording bank" can be formed from the audio source information "by writing into a memory and then reading from the memory at an accelerated speed." [3:42-44] The Tescher patent discloses the compression of an input video stream "for subsequent utilization, e.g.[,] . . . recording on video tape or other magnetic media, etc." [2:43-45] Tescher thus anticipates coupling the output of the compression means to a random access storage means such as a hard disk for the purpose of storing the compressed video.
transmitting, in said burst transmission time period, the stored digital time compressed representation of said audio/video source information to a selected destination.	Gremillet explains that "[t]he information flow rate linked with classical music is approximately 0.5 Mbits/s. However, the information flow rate of picture transmission channel used in television (either broadcast, or by optical fibres or cable) is well above this value." [2:1-8] This makes it possible to transmit "music comparessed [sic] in a factor of 200," meaning that "a musical work lasting one hour can be transmitted in 18 seconds." [2:8-12] Gremillet describes a "video recorder" which is "housed with the requesting subscriber" and records the transmitted information: "the writing phase continues until the work has been completely recorded. However, as stated hereinbefore, this phase is of a short duration, in view of the high compression level of the recorder information (greater than 100)." [4:16-40; *see also*

	Claim 1] Gremillet describes the "information flow rate" of the musical works it transmits as "approximately 0.5 Mbit/s." This is less than the data rate of an uncompressed wideband audio signal (e.g. CD audio) which is approximately 0.7 Mbit/s, which suggests that the audio information Gremillet transmits has also been compressed in a manner that reduces the number of bits used to represent the music. Gremillet describes a "broadcasting means consisting of a transmitter 31, a transmitting antenna 32, a receiving antenna 33, or a cable or optical fibres 34,' connecting the distribution center with the subscriber equipment. [4:1-7] Tescher describes the compression, encoding, and buffering of time domain information signals "for subsequent utilization, e.g.[,] transmission from a transmitting station to a receiving station." [2:43-44]. The described transfer from transmitting to receiving station, "from an encoding site to a decoding site," discloses transmission of a compressed video stream to an external device. [1:8-13]
705-13. The method of claim 12, further comprising the steps of:	
editing the stored time compressed representation of said audio/video source information; and	
storing the edited time compressed representation of said audio/video source information.	
705-21. A method for handling audio/video source information, the method comprising the steps of:	Gremillet discloses a music on demand system for "the teledistribution of recorded information" that "offers[s], to requesting users, any piece of music of their choice . . .

	[transmitted] in a few seconds" from a distribution center using the "transmission channels used in television." [1:47-50; 1:64-68; 2:3-8; 3:5-10] "in a more detailed manner, the distribution centre 10 comprises a bank 11 of musical recordings recorded at a faster speed than normal (100-200 times faster." [3:38-40] This makes it possible to transmit "music comparessed [sic] in a factor of 200," meaning that "a musical work lasting one hour can be transmitted in 18 seconds." [2:8-12]
[a] receiving audio/video source information as a digital time compressed representation thereof, said audio/video source information comprising a multiplicity of video frames collectively constituting at least one full motion video program selected from a video library storing a plurality of video programs in a digital time compressed representation thereof for selective retrieval;	It is inherent in the Gremillet patent that the distribution center receives the audio works for distribution. "[T]he distribution center 10 comprises a bank 11 of musical recordings recorded at a faster speed than normal." [3:37-40] This sound information is "obtained by writing [it] into a memory and then reading from the memory at the accelerated speed." [3:42-44] It would have been obvious to combine the efficient video compression techniques disclosed in U.S. Patent Number 4,541,012 ("the Tescher patent") with the system for compression, storage, and faster-than-real-time transmission of media files disclosed in the Gremilet patent. The compression techniques disclosed in the Tescher patent produce video files that have one-half of the bitrate of the audio files already sent faster-than-real-time as described in the Gremillet patent. Specifically, the Gremillet patent discloses the storage and faster-than-real-time transmission of compressed sound recordings that have a bitrate of 0.5 Mbits per second. [2:3-4] But using the compression techniques described in Tescher, video programs can be compressed down to a bitrate of 0.239

	Mbits per second. [Tescher Patent at 11:52-12:1] It would have been obvious to combine the media compression, storage, and transmission system disclosed in the Gremillet patent with the video compression described in the Tescher patent to allow the storage and distribution of video, because the signal bitrate in Tescher is lower than the signal bitrate disclosed in Gremillet. As illustrated in Fig. 1 of Tescher, the system receives video source information through an analog processor: "analog video signals are coupled to the input of an analog processor unit 11 . . ." [5:32-34]
[b] said at least one video program being received by a receiver in a burst transmission time period that is substantially shorter than a time period associated with real-time viewing by a receiver of said at least one video program;	It is inherent in the Gremillet patent that the distribution center receives the audio works for distribution. "[T]he distribution center 10 comprises a bank 11 of musical recordings recorded at a faster speed than normal." [3:37-40] This sound information is "obtained by writing [it] into a memory and then reading from the memory at the accelerated speed." [3:42-44] It would have been obvious to combine the efficient video compression techniques disclosed in U.S. Patent Number 4,541,012 ("the Tescher patent") with the system for compression, storage, and faster-than-real-time transmission of media files disclosed in the Gremilet patent. The compression techniques disclosed in the Tescher patent produce video files that have one-half of the bitrate of the audio files already sent faster-than-real-time as described in the Gremillet patent. Specifically, the Gremillet patent discloses the storage and faster-than-real-time transmission of compressed sound recordings that have a bitrate of 0.5 Mbits per second. [2:3-4] But using the compression techniques described in Tescher, video programs can be compressed down to a bitrate of 0.239

	Mbits per second. [Tescher Patent at 11:52-12:1] It would have been obvious to combine the media compression, storage, and transmission system disclosed in the Gremillet patent with the video compression described in the Tescher patent to allow the storage and distribution of video, because the signal bitrate in Tescher is lower than the signal bitrate disclosed in Gremillet. As illustrated in Fig. 1, the system receives video source information through an analog processor: "analog video signals are coupled to the input of an analog processor unit 11 . . ." [5:32-34]
[c] storing the digital time compressed representation of said audio/video source information; and	The Gremillet patent discloses "recording support [which] can be a video disk or a video recorder." [3:40-42] This "information recording bank" can be formed from the audio source information "by writing into a memory and then reading from the memory at an accelerated speed." [3:42-44] It would have been obvious to combine the Gremillet patent with references disclosing different storage mediums. For example, at Gremillet describes the video recorder at the user station recording transmitted works using a magnetoscope. [4:23-25] It would have been obvious to store the audio works on hard disk. [*See, e.g.*, "Peripheral Storage: Who's Got What" at APBU 714-725] Tescher discloses the compression of an input video stream "for subsequent utilization, e.g.[,] . . . recording on video tape or other magnetic media, etc." [2:43-45] Tescher thus anticipates coupling the output of the compression means to a random access storage means such as a hard disk for the purpose of storing the compressed video.
[d] transmitting, in said burst transmission time period, the	Gremillet explains that "[t]he information flow rate linked with

stored digital time compressed representation of said audio/video source information to a selected destination.	classical music is approximately 0.5 Mbits/s. However, the information flow rate of picture transmission channel used in television (either broadcast, or by optical fibres or cable) is well above this value." [2:1-8] This makes it possible to transmit "music comparessed [sic] in a factor of 200," meaning that "a musical work lasting one hour can be transmitted in 18 seconds." [2:8-12] Gremillet describes a "video recorder" which is "housed with the requesting subscriber" and records the transmitted information: "the writing phase continues until the work has been completely recorded. However, as stated hereinbefore, this phase is of a short duration, in view of the high compression level of the recorder information (greater than 100)." [4:16-40; *see also* Claim 1] Gremillet describes the "information flow rate" of the musical works it transmits as "approximately 0.5 Mbit/s." This is less than the data rate of an uncompressed wideband audio signal (e.g. CD audio) which is approximately 0.7 Mbit/s, which suggests that the audio information Gremillet transmits has also been compressed in a manner that reduces the number of bits used to represent the music. Gremillet describes a "broadcasting means consisting of a transmitter 31, a transmitting antenna 32, a receiving antenna 33, or a cable or optical fibres 34,' connecting the distribution center with the subscriber equipment. [4:1-7] This "recording can be kept on the video recorder for the purpose of listening to it later." [4:36-39] It would have been obvious to copy the compressed musical works onto other tapes in order to backup the information. *See, e.g.*, U.S. Patent No.

	4,768,110. Because these works are compressed, such copying would be at a faster-than-real-time rate. Tescher describes the compression, encoding, and buffering of time domain information signals "for subsequent utilization, e.g.[,] transmission from a transmitting station to a receiving station." [2:43-44]. The described transfer from transmitting to receiving station, "from an encoding site to a decoding site," discloses transmission of a compressed video stream to an external device. [1:8-13]