

Explorer Assignment #3:

Part 1 – The Music Industry (MP3)

United States Patent
Grill et al.

5,579,430
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DIGITAL ENCODING PROCESS

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Date Filed: **Jan. 26, 1995**

International Class: **G01L 3/2; G01L 9/00**

U.S. Class: **395/2.12; 395/2.09; 395/2.1; 395/2.91**

Field of Search: **381/36-53; 381/29; 381/31; 395/2; 395/2.87; 348/412**

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Abstract

A digital encoding process for transmitting and/or storing acoustical signals and, in particular, music signals, in which scanned values of the acoustical signal are transformed by means of a transformation or a filter bank into a sequence of second scanned values, which reproduce the spectral composition of the acoustical signal, and the sequence of second scanned values is quantized in accordance with the requirements with varying precision and is partially or entirely encoded by an optimum encoder, and in which a corresponding decoding and inverse transformation takes place during the reproduction. An encoder is utilized in a manner in which the occurrence probability of the quantized spectral coefficient is correlated to the length of the code in such a way that the more frequently the spectral coefficient occurs, the shorter the code word. A code word and, if needed, a supplementary code is allocated to several elements of the sequence or to a value range in order to reduce the size of the table of the encoder. A portion of the code words of variable length are arranged in a raster, and the remaining code words are distributed in the gaps still left so that the beginning of a code word can be more easily found without completely decoding or in the event of faulty transmission.

Definition by [Paolo Corsini](#): The MPEG acronym stands for Motion Picture Experts Group and it refers to a group of researchers who study new formats for coding and playing audio and video. This acronym refers to audio/video compression formats created by this group. The term MP3 is the abbreviation of MPEG1 – Layer 3, that is the audio compression format used in the MPEG 1 algorithm. In other words, MPEG is a series of compression algorithms to reproduce audio and video; the Layers are compression algorithms used in MPEG playing only for audio. MPEG 1 – Layer 3, known as MP3, is one of the audio compression algorithms used by the MPEG 1 algorithm. (Hardware Upgrade, http://www.hwupgrade.com/audio/diamond_rio/index.html)

The following news clips were taken from [The Standard](#). of San Francisco, CA.

- *June 16, 1999*

Diamond Wins MP3 Court Victory

By Michael Drexler

BOSTON – Diamond Multimedia and its subsidiary, RioPort, scored a legal victory yesterday when a U.S. court ruled that the Rio music player did not violate a 1992 act governing digital recording devices.

The U.S. Court of Appeals for the Ninth Circuit decided that the Rio was not a "digital audio recording device" under the definition laid out in the Audio Home Recording Act (AHRA) because the device can not record music directly from the Internet or from digital media like CDs.

- *May 03, 1999*

For Now, MP3 Is the Real Thing

By Lessley Anderson

In the most powerful MP3 endorsement by a major industry player to date, [RealNetworks \(RNWK\)](#) launched an MP3 player called Real Jukebox to its 30 million customers today.

The free Real Jukebox, available initially in beta, enables users to "rip" – or record – their own CDs into the MP3 format, reorganize tracks and share them with friends. The product trumps the MP3-playing Media Player that [Microsoft \(MSFT\)](#) launched earlier this month, which plays MP3 but cannot encode tracks.

Real Jukebox's added functionality is sure to be a big hit with consumers but may strain the company's traditionally strong relationship with the major record labels.

- *May 03, 1999*

Thompson Unveils Portable MP3 Player

By Jeanette Borzo

PARIS – Thomson Multimedia today outlined plans for Lyra, a portable digital-music device that will let users record and play back music from the Internet and other sources.

With Lyra, users will be able to download and listen to music coded in the MP3 audio-compression format, as well as other formats, Thomson said in a statement. Users will be able to store several hours of music onto the 32M-byte and 64M-byte CompactFlash cards the device uses.

The device is bound to compete with other MP3 music players targeted at Internet users. Several weeks ago, Diamond Multimedia boosted the memory level on its similar Rio player, saying that the company needed to fend off new competition from rival vendors

- *April 14, 1999*

Microsoft Battles MP3 With Windows Media

By Rob Guth

TOKYO – [Microsoft \(MSFT\)](#) late Tuesday upped the ante in a growing battle over the distribution of media online with the release of software that offers ways to send and receive copyright-protected audio and video.

Microsoft's Windows Media Technologies 4.0 uses a compression format that the software giant says will enable Web surfers to download music files twice as fast as MP3 (Motion Picture Experts Group, Audio Layer 3), a popular compression technology for downloading music from the Web.

The Microsoft suite of software offers functions that the vendor said should make it easy for content providers such as online music distributors to sell media over the Internet. For instance, Windows Media offers payment mechanisms and a "rights manager," which embeds licensing and other information into media sent online. The media is then "piracy resistant," the company said in a statement issued late Tuesday.

- *April 13, 1999*

RealNetworks to Buy MP3 Maker

By Douglas F. Gray

LONDON – RealNetworks Tuesday announced that it will purchase Xing Technology, a developer and distributor of MP3 (Motion Picture Experts Group, Audio Layer 3) software, for about \$75 million.

RealNetworks will acquire Xing, based in San Luis Obispo, Calif., for not more than \$75 million in shares of RealNetworks common stock, which will represent approximately 1 percent of the total shares, according to a release issued Tuesday.

- *February 04, 1999*

Rykodisc Says MP3's a Hit

By Lessley Anderson

Rykodisc, the recording label that represents such major artists as Frank Zappa, Elvis Costello and Mickey Hart, has begun selling a significant portion of its catalog in the MP3 format, marking a milestone in the short history of digital music distribution. The independent label now offers over 200 songs from 65 artists on the site of MP3 distributor Good Noise (www.goodnoise.com), for 99 cents a piece.

Explorer Assignment #3:

Part 2 – Organic verses On-line shopping

Item	Manufacturer	Model	Description
PC Video Board	STB	V32416	Voodoo3 2000 3dfx, AGP, 16Gbyte

Vendor	Location	PC Video Board	Comments
Best Buys	Laurel, MD	Cost 99.99 5% sales tax 5.00 Total 104.99	A round trip totaling 14 miles from home to both stores and a stop at Dunkin Donutes took 1.5 hours.
Office Depot	Laurel, MD	Cost 99.99 5% sales tax 5.00 Total 104.99	"
Carrara Systems	Web	Cost 82.00 Fedex 2 day air 26.52 Total 108.52	Using www.pricewatch.com , it took a total of 30 minutes to run the search and find vendors with on-line ordering who could provide cost of shipping. http://store.yahoo.com/carrarasystems/info.html
Accubyte	Web	Cost 99.00 Fedex 2 day air 24.00 Total 123.00	Via www.pricewatch.com http://www.accubyte.com/VCard_special.htm

Date: 2/28/00

Item "Purchased" (Description): Voodoo3 2000 3dfx, AGP, 16Gbyte video board

Item "Purchased" Serial and/or catalog/ISBN number: V32416

Vendor Name (and URL where applicable): Best Buys

Vendor type (online or retail): retail

Payment type accepted(circle all that apply):

Cash Check Credit Card Other (please specify) _____

Base Price (no tax or shipping) (in dollars): \$99.99

Tax (in dollars): \$5.00

Shipping (in dollars): N/A

Total Price (tax and shipping included) (in dollars): \$104.99

Approximate Time Required for Transaction (in minutes, including searching and drive time): 2 hrs

Approximate Time for Delivery (in days, for online purchases):

How would you rate the overall level of customer service provided by this vendor (circle one):

Very Low Low Neither Low nor High High Very High

How would you rate your level of concern for the security of your credit card information when making this purchase (leave blank if not applicable):

Very Low Low Neither Low nor High High Very High

How would you rate your level of concern for the security of your personal information when making this purchase (circle one):

Very Low Low Neither Low nor High High Very High

How would you rate the amount and quality of the information provided about the purchased product by this vendor:

Very Low Low Neither Low nor High High Very High

How would you rate your overall level of satisfaction with this shopping experience:

Very Low Low Neither Low nor High High Very High