THE GOFIGURE PATENT PORTFOLIO

SMARTPHONES & DIGITAL MEDIA DOWNLOADING AND/OR STREAMING TECHNOLOGIES

A Patent Portfolio Acquisition Opportunity

GoFigure Media: A Patent Portfolio Acquisition Opportunity

Smartphones & Digital Media Downloading and/or Streaming Technologies

Executive Summary

IPinvestments Group LLC has been exclusively retained to broker the sale of a portfolio of U.S. patents ("the Portfolio") owned by **GoFigure Media, LLC**. This **pioneering Portfolio** teaches systems, devices, and methods, dating back to **1999** that are now widely used in leading **mobile devices, digital media services, and home media hubs** to enable the **downloading and/or streaming of audio and/or video using a personal account**.

The patented devices and technologies in this Portfolio are foundational to the relevant industries, as evidenced by the prosecution of patents in this Portfolio having been governed through the secretive **USPTO Sensitive Application Warning System (SAWS)** (See Appendix Tab 1 or LINK). The **Office of the Commissioner for Patents** indicated that this Portfolio was designated in SAWS because of its **potential for "strong impact on the patent community".**

The Portfolio is being offered for acquisition to select companies and organizations who participate in the relevant markets and related industries. The Portfolio consists of four (4) issued U.S. Patents and a pending U.S. patent application. The Portfolio is summarized in the table below (sorted by filing date).

Patent No.	Title	Serial No.	Filing Date	Issue Date	Priority Date
7,065,342	SYSTEM AND MOBILE CELLULAR TELEPHONE DEVICE FOR PLAYING RECORDED MUSIC	09/721,120	11/22/00	06/20/06	11/23/99
7,778,636	MOBILE ADVERTISING SYSTEMS AND METHODS	11/595,500	11/09/06	08/17/10	11/23/99
8,385,912	DIGITAL MEDIA DISTRIBUTION SYSTEM	11/437,121	05/18/06	02/26/13	11/23/99
8,843,947	DIGITAL MEDIA DISTRIBUTION SYSTEM AND METHOD	13/679,295	11/16/12	09/23/14	11/23/99
TBD	DIGITAL MEDIA DISTRIBUTION SYSTEM AND METHOD	14/456,648	08/11/14	TBD	11/23/99

Patented Technology Highlights

In summary, the Portfolio focuses on mobile devices and technologies that enable wireless downloading and/or Internet-streaming of digital media (e.g., recorded music or video) to smartphones and other consumer electronics devices from a central/cloud/virtual server using a personal account. The portfolio includes digital advertising and location aware technologies. The portfolio further includes a home media unit that receives digital media from a digital media store. The home media unit can have wireless server functionality to send digital media to other devices and can be a television.

This **Portfolio discloses many features that are found in today's leading mobile, digital media store, and home media hub offerings.** Examples include:

- a **smartphone** having **integrated functionality to access a user's personal account that identifies the user's music recordings**.

- a downloadable or pre-installed mobile **digital media player application** having **an input for initiating a wireless interface with a digital media store**. The user can purchase digital media or access the user's personal account having a library of the user's previously obtained media.

- using a **mobile device to purchase a digital media recording from a digital media store** and the purchased media is transmitted to a **home media unit**. The media may be **video** and the home media unit may be a **television**.

- **a home media hub that wirelessly transmits purchased digital media to other devices.**

- a digital media store that enables the user to **choose**, when purchasing a digital media recording with a mobile device, **to download the media recording to the mobile device at the time of purchase or to have it available for subsequent selection in a personal account**.

- identifying a media recording purchased with a mobile device in an account of the user, **not transmitting the media to the mobile device at the time of purchase**, and **subsequently receiving a selection to transmit the purchased digital media recording to the mobile device**.

- a **mobile application for playing radio stations** that have digitized their broadcasts. Includes the ability to purchase and download a digital music recording played by the radio station.

- **mobile music subscription services.**

- **creating a music playlist (i.e., a "mix") in a personal account that is accessible with a mobile device and other devices.**

- **a search program** that **associates a list of digital music recordings** of the user with corresponding digital music files.

- **digital advertising technology**, including the ability to **recall an ad stored in a mobile device**, **interact with the users related to goods and services while streaming digital music**, and **location based/aware digital advertising services** and technologies.

COMPETITION IN THE RELEVANT MARKETS

Many large industry players participate in the relevant markets. For example, ***Amazon, Apple, Google, iHeartMedia, Microsoft, Netflix, Pandora, Rhapsody, Roku, Samsung, Sonos, Sony, Spotify, and YouTube,*** among many others, provide smartphones, tablets, home media hubs, digital media stores and/or digital media and/or advertising services to their customers.

FORWARD REFERENCES

As of early February 2015, the Portfolio has been cited over 100 times on United States' patents and applications owned by many large multinational companies in the related industries. The table below illustrates a sampling of some companies that have patents or applications referencing the GoFigure Portfolio.

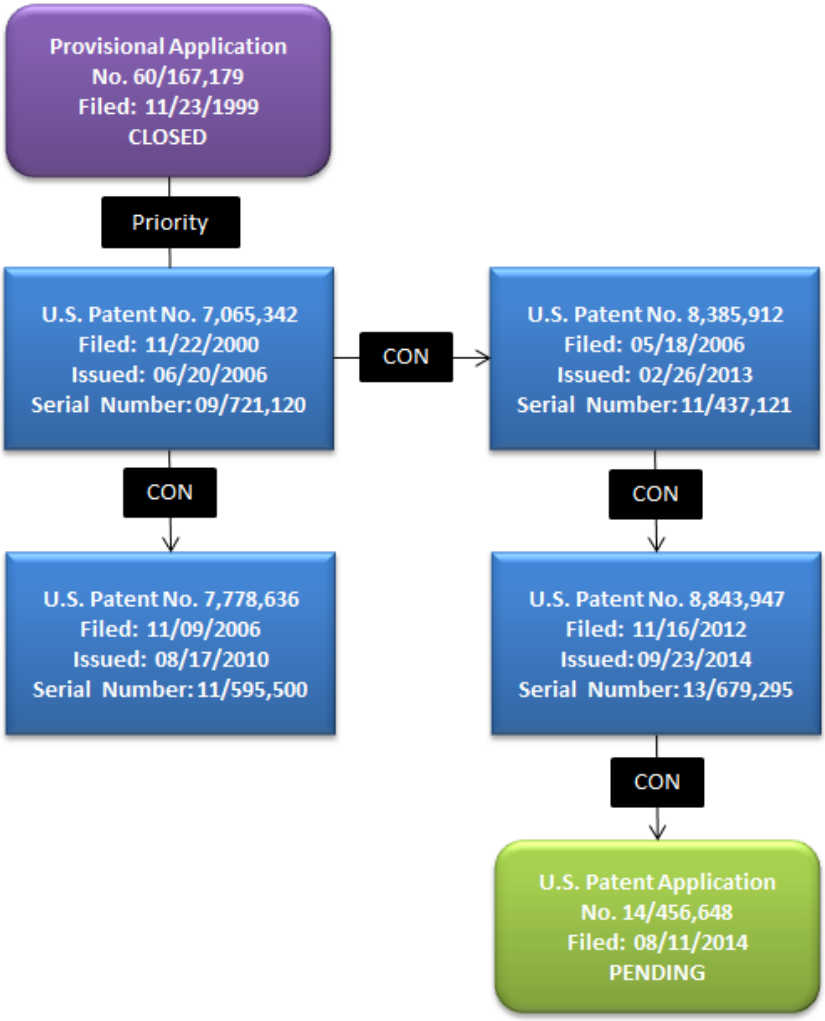
GoFigure Media

Summary of Forward References

Company Name	No. of Fwd. Ref.
Affinity Labs	12
Solocron Media	12
Apple Inc.	11
Syncronization Inc.	8
Google, Inc.	7
3D Radio LLC	6
mSpot, Inc. (a Division of Samsung)	4
Skky Inc.	4
Black Hills Media	3
IBM	3
LG	3
Qualcomm	3
Digimarc	2
Goldspot Media	2
Sony Ericsson	2
Toshiba	2
Intel	1
Delphi Tech	1
First Data Corporation	1
Hitachi	1
OTHERS	28
Total Forward References =	***116***

FAMILY RELATIONSHIPS

Relationships between the four patents are presented in the family tree graphics below.



Each patent in the Portfolio is briefly explained below followed by representative claims. Copies of the patents are provided in the Appendix and respective file histories are available upon request.

The Patented Technologies

In today's connected world, consumers increasingly download or stream music and videos from online stores as opposed to compiling hundreds of CDs, DVDs and Blu-ray discs. Popularized by the launch of **Apple iTunes Store** in **2003**, users now use online accounts to provide their digital media needs by downloading or streaming digital media from a central facility or personal cloud account directly to mobile consumer devices and home entertainment devices.

The foundational **GoFigure Patent Portfolio** presents patented devices and technologies dating back to **1999** that enable the downloading and streaming of music and/or video (i.e., media) using a personal account and a mobile device. The patented devices and technologies include solutions to download media directly to a smartphone, tablet, MP3 player (i.e., mobile devices) and/or to other computing devices such as a personal storage unit, home entertainment center, home media server, television, PC, etc.

The patented devices and technologies also include solutions that enable the media to be played as received (i.e., streamed) from a central server in a mobile communications device. Furthermore, digital media purchased from a digital media source can be stored or identified in a user's personal account or personal storage unit (such as a home media unit) and then downloaded or streamed from the personal account or personal storage unit to a playing device, such as the mobile communications device.

The below figures from the patents provide a good illustration of some preferred embodiments.

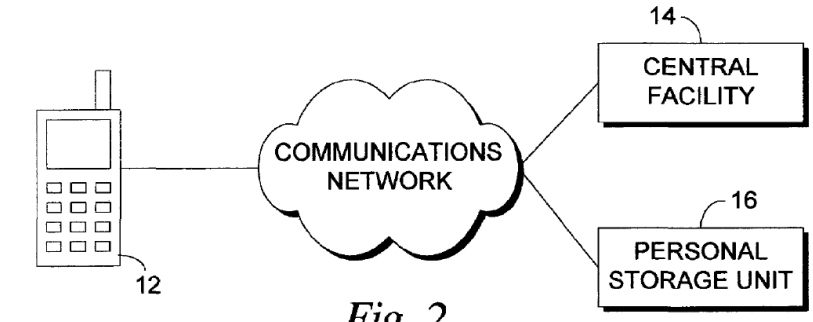


Fig. 2.

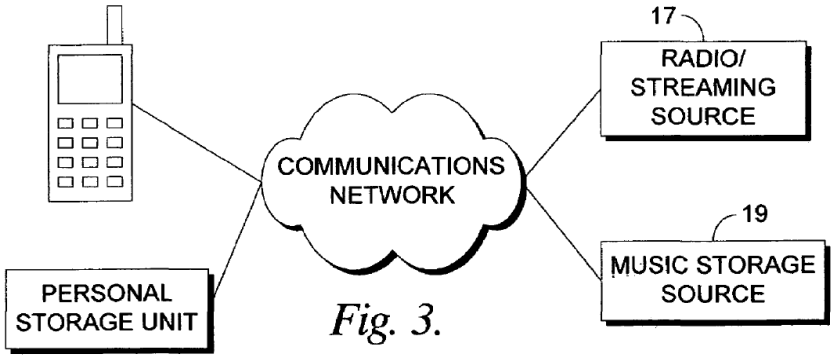


Fig. 3.

In summary, the Portfolio focuses on mobile devices and technologies that enable wireless downloading and/or Internet-streaming of digital media (e.g., recorded music or video) to smartphones and other consumer electronics devices from a central/cloud/virtual server using a personal account. The portfolio includes digital advertising and location aware technologies. The portfolio further includes a home media unit that receives digital media from a digital media store. The home media unit can have wireless server functionality to send digital media to other devices and can be a television.

U.S. Patent No. 7,065,342

The '342 Patent was filed on November 22, 2000 and claims priority to U.S. Provisional Application No. 60/167,179 filed on November 23, 1999.

The '342 Patent presents foundational technologies related to a ***mobile phone*** that ***downloads or streams digital music***. The patented mobile phone has integrated ***functionality to wirelessly access a personal account*** that stores information that identifies a music recording that has been selected by the user using the mobile device. Additionally, ***the device is part of a system that includes the personal account***, as set forth in the following representative claims of the '342 Patent.

REPRESENTATIVE CLAIMS OF THE '342 PATENT:

17. A device comprising:
a processor;
an input for selecting a music recording;
a receiver for wirelessly receiving the selected music recording after it is selected with said input and for wirelessly receiving in conjunction with said music recording at least one of the name of an artist corresponding to the selected music recording and a title of the selected music recording;
a memory for storing the received music recording;
a player for playing said music recording
a display for displaying, in conjunction with play of said music recording, at least one of said name of an artist corresponding to said music recording and said title of said music recording; and
a speaker for outputting said music recording as it is played, wherein said device is a mobile cellular telephone having voice communications capability and functionality to wirelessly access a personal account, wherein said personal account is associated with at least one of said mobile cellular telephone and a user thereof and is for storing at least information that identifies said music recording.

26. The device as set forth in claim **17**, wherein said music recording was downloaded to said device via a wireless cellular communications link.

27. The device as set forth in claim **26**, wherein said music recording was downloaded from a remote server to said device.

28. The device as set forth in claim **27**, wherein said device is part of a system including said personal account and wherein said music recording was downloaded via said personal account, located at said remote server, associated with said device or a user of said device.

U.S. Patent No. 7,778,636

The '636 Patent was filed on November 9, 2006 and claims priority to U.S. Provisional Application No. 60/167,179 filed on November 23, 1999. The '636 Patent presents ***pioneering digital advertising inventions*** that use a ***mobile device and a server*** and enable a user of a mobile device to ***recall a digital advertisement that has been sent to and stored in the mobile device and to send to the server an electronic response to the advertisement***.

Patented solutions include location aware digital advertising technologies that include receiving a GPS-determined **location with a response to an advertisement** for which information has been stored in a mobile device and recalled by the user. Based on the received location information, a connection is routed between the mobile device and a source associated with advertisement.

Patented solutions further include **digital advertising technologies to interact with end users via a digital advertisement that is included with streaming music**. Information indicative of the advertisement is stored in the mobile device and recalled by the user. A remote server, which is associated with a source of digital media recordings, receives the user's electronic response to the advertisement while the mobile device is being used to play streaming digital music. The streaming digital music either continues playing (or stops playing) upon initiation of the response to the advertisement.

REPRESENTATIVE CLAIMS OF THE '636 PATENT:

1. A method comprising:
receiving an electronic response indicative of a user's selection of an advertisement that has been digitally and wirelessly transmitted to a portable wireless communications device operated by the user;
receiving, with said electronic response to said advertisement and from the portable wireless communications device, information indicative of a GPS-determined location of said portable wireless communications device; and
based upon said received location information, routing a connection between said portable wireless communications device and a communications device associated with a source associated with said advertisement so as to allow the source an opportunity to provide a good or service to the user, wherein said receiving said electronic response indicative of the user's selection of said advertisement further comprises receiving from said portable wireless communications device a response to said advertisement for which information indicative of the advertisement has been stored in the portable wireless communications device and subsequently recalled by the user of the portable wireless communications device.

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19. A system comprising:
a portable wireless communications device comprising a display, an input, and a memory;
wherein said portable wireless communications device wirelessly receives an advertisement for display on said display;
a source of digital media recordings;
wherein said portable wireless communications device plays a streaming digital music recording that is wirelessly received from said source of digital media recordings;
a server, associated with said source of digital media recordings and located remotely from said portable wireless communications device,
wherein said server receives an electronic response indicative of a user's selection of said advertisement that has been digitally and wirelessly transmitted to the portable wireless communications device,
wherein said electronic response to said advertisement is initiated via said input of said portable wireless communications device while said portable wireless communications device is playing said streaming digital music recording,
wherein said electronic response includes information transmitted from said portable wireless communications device; and
wherein said streaming digital music recording continues streaming from said source of digital media recordings and playing in said portable wireless communications device upon initiation of said response to said advertisement, wherein said receiving said electronic response indicative of the user's selection of said advertisement further comprises receiving from said portable wireless communications device a response to said advertisement for which information indicative of the advertisement has been stored in the portable wireless communications device and subsequently recalled by the user of the portable wireless communications device.

U.S. Patent No. 8,385,912

The '912 Patent was filed on May 18, 2006 and claims priority to U.S. Provisional Application No. 60/167,179 filed on November 23, 1999.

The '912 patent presents a patented system having features found in today's leading mobile device/digital media services, such as a digital media store, a mobile communications device, and a personal storage account of the user that is accessible via a communications network. A digital media recording purchased from the digital media store is identified in the personal storage account and is subsequently requested by and sent to a user's computing device (a different device than the mobile communications device).

The **'912 patent** further includes ***a search program that associates a list of the user's digital music recordings*** with corresponding digital music files and ***makes the digital music files accessible via the user's personal storage account*.**

Additional features presented in the '912 patent include:

- voice input and voice response functionality;
- the personal storage account is accessible at the source of digital media recordings;
- a media player application that enables the user to initiate a wireless communications link with the source of digital media recordings; and
- the source of digital media recordings is also a source of concert tickets or passes and the user can electronically purchase concert tickets or passes using the mobile device.

REPRESENTATIVE CLAIMS OF THE '912 PATENT:

1. A system comprising:
a source of digital media recordings;
wherein said source of digital media recordings is accessible via a communications network and stores and makes available for purchase a plurality of digital music recordings;
wherein said source of digital media recordings provides a menu for use in selecting said digital media recordings;
a mobile communications device having an operating system, wherein said mobile communications device is for wireless communication and comprises -
a processor,
a display,
a memory, and
an input;
said system further comprising a personal storage account associated with the user of said mobile communications device, wherein said personal storage account is accessible via a communications network;
wherein said source of digital media recordings processes a request, received from said mobile communications device, to purchase a digital music recording, wherein said request to purchase said digital music recording is input via said mobile communications device by a user of said mobile communications device;
wherein said system causes said purchased digital music recording to be transmitted to said mobile communications device;
wherein said purchased digital music recording is wirelessly received by said mobile communications device;
wherein said system identifies said purchased digital music recording in said personal storage account of the user;
wherein said source of digital media recordings receives, via said personal storage account of the user, a request input by the user to transmit to a computing device accessible by the user said purchased digital music recording that is identified in said personal storage account of the user;
wherein, based on said request to transmit said purchased digital music recording to the computing device, said system causes said purchased digital music recording to be transmitted to the computing device, and
wherein said system comprises a program that searches for a digital music recording of the user that is not associated with an address of a corresponding digital music file at said source of digital media recordings, finds a digital music file that corresponds with said digital music recording for which said program searched, retrieves information indicative of said found digital music file, and makes said found digital music file accessible, to said mobile communications device of the user, via said personal storage account of said user.

9. The system as set forth in claim **1**, wherein said mobile communications device further comprises functionality to receive voice inputs, wherein said system receives a voice input that is input into the mobile communications device by the user, and wherein a facility corresponding to said source of digital media recordings comprises voice response functionality.

11. The system as set forth in claim **1**, wherein said personal storage account of the user is accessible at said source of digital media recordings.

13. The system as set forth in claim **1**, wherein said mobile communications device further comprises a player application for playing digital music recordings, wherein said player application enables the user to initiate a wireless communications link with said source of digital media recordings.

18. The system as set forth in claim **1**, wherein said source of digital media recordings further comprises a source of concert tickets or passes, wherein said concert tickets or passes permit access into concert events, wherein said system provides concert schedules of artists, and wherein said system provides the ability for the user of said mobile communications device to purchase a concert ticket or pass, from said mobile communications device, electronically via a data link between said mobile communications device and said source of concert tickets or passes.

U.S. Patent No. 8,843,947

The '947 Patent was filed on November 16, 2012 and claims priority to U.S. Provisional Application No. 60/167,179 filed on November 23, 1999. The technologies patented in the '947 patent include foundational methods and systems, for managing digital media purchases, that are **used in today's leading mobile device/digital media store offerings.**

A source of digital media, such as a digital music and/or video store, is accessible via a communication network using a mobile communication device. Users have an associated account that is accessible to the user using the mobile device and that includes a directory of digital media recordings that have been obtained by the user.

When a digital media recording (such as music, a **movie or TV show**) is purchased from the source of digital media (such as a digital media store) using a mobile device, the digital media source:

- **makes the digital media recording available for transmission to the mobile device;**
- **does not transmit the digital media recording at the time it is purchased to the mobile device;**
- **identifies the purchased digital media recording in the user's account;**
- receives, **from the mobile device via a communications interface initiated subsequent to the purchase of the digital media recording,** a selection to transmit the purchased digital media recording to the mobile device.

The implementation of not transmitting the digital media recording to the mobile device when the digital media recording is purchased may be based on (i) a selection, input by the user, using the mobile device when the digital media recording is purchased or (ii) a selection of the user entered in the account of the user.

The system may further include **a media unit, such as a media hub or media server, located in the residence of the user**. A purchased digital media recording may be selected from the user's account and transmitted to the home media unit.

In an additional system patented in the '947 patent, the purchased digital media recording, while not transmitted when purchased to the mobile device from which the purchase is made, **is transmitted to a media unit located in the residence of the user**. The home media unit may also be a **television**.

Some additional exemplary features of the technologies presented in the '947 Patent include:

- The mobile communication device ***is not limited to a device capable of making telephone calls.***

- The personal storage account identifies the media that has been purchased by the user. The user can initiate the downloading of media to another computing device or personal media storage unit such as a media server (PC, TV, Entertainment Center, etc.). The user can control the playback of the media on the media server.

- The media server can be utilized and located at the user's dwelling or on a cloud server.

- ***Explicitly enables a television to receive digital media recordings, such as video, from an online store.***

- The user can access the media store, personal account, and media server using the communication device.

- A downloadable music player/streaming application is provided, but is not a requirement, which is compatible with an OS of the communication device.

- Encoding and decoding capabilities are disclosed.

- A digital media player application, pre-installed in the mobile device, that enables the user to initiate a wireless communications link with the source of digital media recordings; and

- The system enables the user to select to access via the mobile device the directory of digital media recordings in the user's account and to select a new recording that is available for purchase from the source of digital media.

REPRESENTATIVE CLAIMS OF THE '947 PATENT: (NOTE: *Although the following independent claim appears lengthy, one will see that the recitations of this claim are easy to read and are implemented in major leading mobile device/digital media store offerings.)*

1. A system comprising:
a source of digital media recordings;
wherein said source of digital media recordings is accessible via a communications network and stores in a database memory and makes available for purchase a plurality of digital media recordings;
a mobile communications device associated with a user, wherein said mobile communications device has an operating system and is for wireless communication and comprises
a processor,
a display,
a digital media player application that is pre-installed in the mobile communications device before the mobile communications device is provided to the user;
a memory, and
an input;
an account associated with the user of said mobile communications device, wherein said account is accessible to the user using said mobile communications device, and wherein said account comprises a directory of a plurality of digital media recordings that have been obtained by the user;
wherein said source of digital media recordings processes a request, received from said mobile communications device, to purchase a digital media recording, wherein said request to purchase said digital media recording is input via said mobile communications device by the user of said mobile communications device;
wherein, when said digital media recording is purchased from said source, said source of digital media recordings makes said purchased digital media recording available for transmission to said mobile communications device;
wherein, said system does not transmit, at the time said digital media recording is purchased from said source, said purchased digital media recording to said mobile communications device for either (i) play; or (ii) complete storage and subsequent play of said purchased digital media recording in said mobile communications device;
wherein, when said digital media recording is purchased from said source, said system identifies said purchased digital media recording in said directory of obtained digital media recordings in said account of the user;
wherein, said source of digital media recordings receives from said mobile communications device, via a communications interface initiated subsequent to said purchase of said digital media recording and by the user using the mobile communications device, a selection to transmit to said mobile communications device said purchased digital media recording that was previously purchased by the user using said mobile communications device and was identified by said system in said account of the user in the directory of digital media recordings obtained by the user;
wherein, based on said selection to transmit said purchased digital media recording to the mobile communications device of the user, said source of digital media recordings accesses in said database memory said digital media recording that was purchased by the user and transmits said purchased digital media recording to said mobile communications device of the user;
wherein said mobile communications device wirelessly receives said purchased digital media recording and stores said purchased digital media recording in said memory of said mobile communications device; and
wherein said purchased digital media recording stored in said memory of said mobile communications device is available for play in said mobile communications device with said pre-installed digital media player application.

5. The system as set forth in claim **1**, wherein said purchased digital media recording comprises a video recording.

8. The system as set forth in claim **1**, wherein said account further comprises memory storage for storing digital music files that have been obtained by the user.

9. The system as set forth in claim **1**, wherein said system does not transmit said purchased digital media recording to said mobile communications device when said digital media recording is purchased based on a selection, input by the user, using said mobile communications device when said digital media recording is purchased.

10. The system as set forth in claim **1**, wherein said account of the user is established and provided to the user before said purchase by the user of said digital media recording, wherein said system does not transmit said purchased digital media recording to said mobile communications device when said digital media recording is purchased based on a selection of the user entered into said pre-established account of the user.

11. The system as set forth in claim **1**, said system further comprising: a media unit located in a residence of the user, wherein said media unit comprises a memory and a digital media decoder; wherein, when said digital media recording is purchased based on said request to purchase said digital media recording received from said mobile communications device, said source of digital media recordings transmits said purchased digital media recording to said media unit located in the residence of the user.

20. The system as set forth in claim **1**, wherein said input comprises an input that is accessible to the user via said pre-installed digital media player application and is for initiating an interface with said source of digital media recordings.

21. The system as set forth in claim **20**, said system enables the user to select to access via the mobile communications device said directory of said plurality of obtained digital media recordings in said account of the user and to select a new recording that is available for purchase at said source of digital media recordings.

Overview of Relevant Market – Facts, Figures, and Trends

MEDIA PLATFORMS TODAY

Digital media stores and services are highly important assets to major media and mobile providers. These media stores and media services are used to attract new customers and to keep customers from easily migrating to a competitor's platform.

There are an ever-growing number of digital media downloading services available via the Web and dedicated mobile and tablet apps. These services are available through **Google Android** apps and **Apple** devices such as iPhones and iPads, as well as PCs and e-readers. Furthermore, digital media purchases and downloads using mobile devices and multiple consumer computing devices (e.g., television, PCs, media servers, etc.) to receive downloads, as well as home media hubs for displaying content from digital media stores on TVs and wirelessly transmitting digital media to other devices, are rising rapidly.

The below market players offer their own platforms in delivering digital media to consumers using mobile devices and/or delivering media to a home media hub:

- **Amazon** offers **Instant Video** and **Amazon Music**, an MP3 music store, and provides users a **CloudPlayer**. Amazon lets you buy MP3s and access them via the CloudPlayer for playback across multiple consumer devices, especially suited for the **Kindle Fire** line of devices. Amazon also offers **Fire TV**, a home media hub.

- **Apple is** an enormous player in this market. Offering access from a range of devices, **iTunes** can be used on your **iPhone, iPad, iPod touch, Mac, PC or Apple TV** and allows seamless syncing and downloading of playlists between them. This service is useful for customers who own multiple devices who want to listen to music and now video purchased from the store using any device. Apple also provides radio listening via **iRadio** and a variety of **mobile digital advertising solutions**.

- **Google** has a significant and growing reach in digital media. **Google Play** allows users to stream or download video (i.e., movies and TV shows), music, and audio books from an enormous catalog. Google Play also offers radio-style listening, for users to create a station based on artist, album or song. Additionally, mobile users can access all of the music they have uploaded locally via the iOS or **Android** apps, as well as desktop. Google also offers Google **Chromecast**, a compact home media unit for enabling media to be streamed to a television from a mobile device and significant **mobile digital advertising solutions**.

- **Microsoft** offers **Xbox Video and Music (Formally Zune),** a streaming service that ties together its desktop, gaming, mobile, and tablet devices for multi-platform access.

- **Netflix** is a highly popular digital movie subscription service that enables access through TVS, PCs, and mobile devices to a large catalogue of movies and TV shows. Netflix is likely to see increasing competition as digital media providers begin to provide Over The Top (OTT) streaming media services and as major brands, such as HBO, begin to offer their premium content unbundled from major cable services.

- **Pandora** is the veritable granddaddy of online music streaming shops. Pandora users create a personal account and pick songs and a radio station of similar or related music is created. Pandora is for users who want to stream radio stations across a variety of platforms. Pandora runs a free application that includes advertisements within the media player application.

- **Roku** is a home media unit that enables customers to rent, buy, and stream movies and TV shows. Roku provides a large streaming channel lineup, a vast catalogue of movies and TV episodes on demand, and a large selection of channels.

- **Rovi** provides products and solutions, including a cloud-based platform that enable leading companies to provide digital media offerings.

- **Samsung**, in addition to providing Google Play on its Android-based devices, offers its **Milk platform**, which provides a streaming digital music service (powered by **Slacker**) with the ability to listen to content offline, and **Milk Video.** Samsung Milk is available on Samsung Galaxy mobile devices and Samsung's Smart TVs.

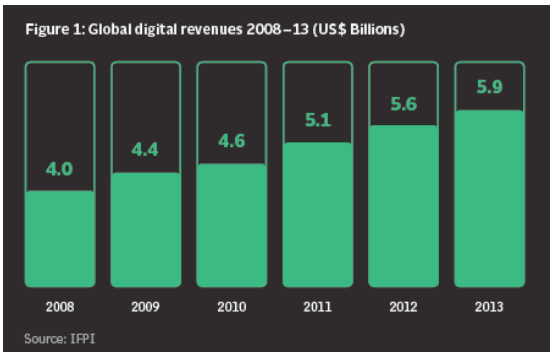
- **Sonos** is a wireless home audio system that enables the user to access and control the user's personal music library and Internet radio stations from a mobile app and to wirelessly send music to speakers throughout the home.

- **Sony** offers **Sony Music and Video Unlimited** as a streaming service that touts a catalog of more than 25 million tracks available to play on demand on many devices. Access is provided via Android smartphones or tablets, iPods, iPhone, Xperia phones and tablets, Sony Netbox, Sony Blue-ray players and TVs, and, importantly, the Sony PlayStation.

- **Spotify** is one of the best-known music services available. It has 20 million catalogued tracks available to listen to which also means there is a thriving hub of third-party apps, like BBC's Playlister service, among others, which extend the listening available to users. Most users use it to listen to individual artists or bands, create playlists, or listen to individual albums. There is also a 'radio' option that plays music it deems related to your original artist of choice.

DIGITAL MUSIC SNAPSHOT

It is now clear that digital music both streaming and downloading is a mainstream model for the music industry. The industry's digital revenue grew by 4.3 percent in 2013 to US $5.9 billion.



There was steep growth in both revenues and user numbers of subscription services, continued revenue growth from ad-supported services, and stable income from download sales. Globally, digital now accounts for 39 percent of total industry global revenues and in three of the top 10 markets, digital channels account for the majority of revenues.[1]

The media download ad streaming business continues to expand into new markets and create new business models, attracting more users to digital media services and bringing artists to a wider global audience. Brands such as **Deezer**, **Spotify**, and **Pandora**, are reaping the benefits of geographical expansion, while regional services such as **Rdio**, **KKBOX,** and **WiMP** continue to attract new users. New entrants, **Beats Music** (now owned by Apple) and **YouTube**, launched subscription services in 2014.

The subscription model is leading to more payment for music by consumers, many of whom appear to be shifting from pirate services to a licensed music environment that pays artists and rights holders. The number of paying subscribers to subscription services rose to 28 million in 2013, up 40 percent on 2012, and up from only eight million in 2010.

Revenues from advertising-supported streaming services, such as **YouTube** and **Vevo**, are also growing – up 17.6 percent in 2013.

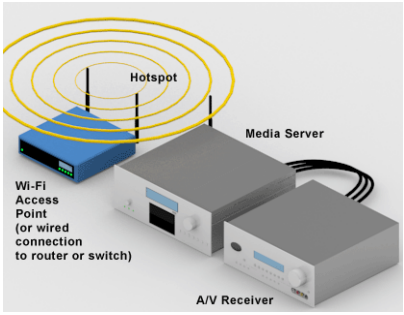
Record companies have adapted their business to a model increasingly based on access to music, and not only ownership of music. This reflects the growing share of subscription and streaming revenues as a percentage of digital revenues globally. The industry now derives 27 percent of its digital revenues from subscription and ad-supported streaming services, up from 14 percent in 2011. Additionally, new services with big global ambitions have launched, like **Beats** (acquired by Apple) and **iTunes Radio**. Meanwhile, the existing international services, such as **Deezer**, **Google Play**, **iTunes**, **Spotify,** and **YouTube** are generating income in many new markets following their

[1] IFPI Digital Music Report 2014 - http://www.ifpi.org/downloads/Digital-Music-Report-2014.pdf

global expansion. The competition is intense and consumer choice is widening. These are very positive dynamics in the development of the digital music landscape.

HOME ENTERTAINMENT AND MEDIA SERVERS

Major companies are competing for the "living room" with home entertainment/media products such as **Apple TV, Roku, Google Chromecast, and Amazon Fire TV.** Additionally, there is a growing selection of excellent wireless audio systems, such as home audio solutions from **Sonos** that utilize a mobile app running on a mobile device and transmit music from a personal media unit to multiple rooms and/or devices.



Media servers are designed to be an entertainment control center for purchasing, cataloging, organizing, and distributing the family's audio and video collection to other devices, such as mobile devices, televisions, etc. These products may be standalone units or PCs customized by vendors for this purpose. Additional products and services in this category include **EvoStream**, **Lumin Network Music Player**, and **Bluesound Pulse**.

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APPENDIX

APPENDIX
TAB 1

Secret Examination Procedures at the USPTO: My Experience with SAWS

By **Devon Rolf** on December 14, 2014

Recently, light has been shed on the USPTO's **Sensitive Application Warning System** (SAWS) policy. I have personal experience with this policy.

Shedding further light on this program is critical to the credibility of the patent process. This article is primarily focused on the experience that my company, Gofigure, L.L.C., and its patent counsel have had with SAWS (rather than concerns and opinions that we have about this policy based on that experience).

My experience with SAWS is not a one-time circumstance, but is a body of difficult-to-obtain information that developed over a nearly five year period (and, for all we know, is likely still developing). The USPTO believes that the public has no reason to know about this internal program, which is likely why its existence is unknown to most within the patent community.

Introduction

As a brief introduction, I am a registered patent attorney. I began practicing IP law in

the early 1990's with a law firm before becoming the first in-house IP counsel at a well-known consumer electronics company. I left my practice over nine years ago to become an entrepreneur. I have founded/co-founded a number of companies, including Gofigure, LLC.

As a brief introduction to Gofigure, Gofigure holds about twenty-five issued and pending patents on which I am either the sole inventor or a co-inventor. Many of Gofigure's patents relate to media-playing smartphones and mobile payments, some of which have a priority date in 1999. On a number of occasions, Gofigure has made amicable attempts to sell or license its intellectual property, but Gofigure has never brought or threatened patent litigation.

On different occasions (years ago), Gofigure considered whether it should develop a wireless digital music player or music-playing phone, launch an online music offering, or develop a middleware solution. In hindsight, there is no doubt that Gofigure made the right decision not to compete in the markets for digital music-players, mobile phones, or online digital music.

Gofigure has received funding and has aspirations for a mobile payments account financial product. However, Gofigure does not (and may never) have a product on the market and, therefore, would currently be considered a Non-Practicing Entity (NPE).

Sensitive Application Warning System (SAWS)

I first became aware of the USPTO's Sensitive Application Warning System (SAWS) policy in January 2008 when a patent examiner told me during a phone call that he had just been instructed not to allow patent applications that he was examining and that were related to Gofigure's U.S. Patent No. 7,065,342, entitled System and Mobile Cellular Telephone Device for Playing Recorded Music. The '342 patent, which has a priority date in 1999, relates generally to a smartphone for downloading and streaming music and storing the title of a purchased music recording in an account of the user. The examiner said that Gofigure's patent applications related to the '342 patent were in the Sensitive Application Warning System, or SAWS. Neither I (nor Gofigure's patent counsel) had heard of SAWS.

It was clear from the patent examiner's comments that this matter of the Sensitive Application Warning System (SAWS) had not been initiated by the patent examiner or his Supervisory Patent Examiner (SPE), but rather was an issue of USPTO policy that had been set and mandated to be applied to Gofigure's patent applications by USPTO personnel in higher USPTO positions. The examiner stated that this mandate came from "way up high" in the Patent Office. Additionally, the patent examiner said that he did not know of anything that could be done to learn more about SAWS or to overcome a designation in SAWS.

I found a memorandum online stating that the USPTO flags applications, under SAWS, for non-allowance and that these applications cannot be allowed until the flag is removed. The memorandum indicates that, under SAWS, the USPTO may consider during patent examination the companies and technology involved as well as potential publicity.

Consistent with that memo, the patent examiner forwarded to me an internal USPTO email with the phrase – "and the public says" – and a link to a blog criticizing the Patent Office for allowing a patent that had been immediately asserted against major companies in the tech industry.

Gofigure filed a FOIA request in an effort to learn more about SAWS and how and why Gofigure's patent applications were designated into the program, but obtained very little information (and nothing substantive) from the USPTO about the SAWS program. The USPTO denied Gofigure's requests on the grounds that providing this information would pose a serious risk that the USPTO's screening procedures under this policy would be circumvented, that the public's interest in the information is therefore irrelevant, and that the USPTO is not required to disclose internal deliberations by USPTO employees. Gofigure appealed at the agency level (the Appeal was denied by the USPTO).

I wrote USPTO leadership about SAWS. In response, the Office of the Commissioner for Patents wrote to assure me that SAWS is not meant to stop the allowance of any applications or target specific companies, but is merely a way for examiners to identify applications that would potentially have a strong impact on the patent community and ensures examiners receive help in applying the examination standards on these particular applications. When Gofigure's patent counsel conveyed to the patent

examiner that the Commissioner's Office had indicated that they were helping him, he replied that no one was helping him with the applications.

Subsequently, the patent examiner told our patent counsel that he would allow one of Gofigure's patent applications if certain claim amendments were made. We agreed to make the amendments. However, a week later, the patent examiner called Gofigure's patent counsel to explain that he was "sorry" to inform that the application was in SAWS and therefore "cannot be allowed – that is the rule." The examiner stated that he had to reject the application.

To avoid any uncertainty, Gofigure's patent counsel confirmed with the patent examiner that the application had indeed been approved by the examiner and his Primary Examiner and processed for allowance. The patent examiner stated that, when he had tried to allow the patent application, the USPTO system returned a thread – **"SAWS case – cannot be allowed."** The application was indeed rejected.

I communicated these additional developments to USPTO leadership. In response, the USPTO Director's Office reassured me that the SAWS program merely serves as a check on the quality of examination, that inclusion in the program does not result in automatic rejections, and that each application, whether or not in the SAWS program, receives an examination on the merits and the decision to reject or allow is based upon the patent laws and prior art.

Eventually, Gofigure's patent counsel was able to obtain some information through the USPTO's Ombudsman program. The USPTO explained that our counsel's law firm (a respected IP law firm) had never heard of the Sensitive Application Warning System (SAWS) because the firm, and indeed the public at large, is not supposed to know of this policy. The Office explained that the Sensitive Application Warning System is an internal USPTO policy, that the policy has nothing to do with the public, and that Gofigure was not supposed to have been informed about its designation in this internal USPTO program.

Additionally, through the USPTO's Ombudsman program, Gofigure's patent counsel was told by a USPTO employee with direct knowledge of Gofigure's patent applications that –

- GoFigure's pending patent application was in the SAWS program because it

"reads on iTunes" and that granting our patent could result in "a very, very public case", so the USPTO had to be careful.

- the GoFigure patent application, that was rejected shortly after the patent examiner had indicated that it would be allowed, was rejected because a Primary Examiner had been appointed who expressed concern that "this is like iTunes." To be clear, the patent application being examined had a priority filing date in 1999, several years prior to the introduction of Apple's iTunes Store, formerly known as iTunes Music Store.

- it should not be implied from the USPTO's actions and statements that the USPTO would *never* allow GoFigure's patent applications. The USPTO stated that the claims could be allowed if they get to a point that the USPTO "is not uncomfortable with them".

On March 1, 2012, Gofigure placed this information regarding SAWS in the public record of one of its patent applications. Gofigure received a Notice of Allowance in that application later that year (the application matured into U.S. Patent No. 8,385,912, entitled Digital Media Distribution System). Since that time, Gofigure has secured another patent in this patent family.

The USPTO has not placed any information concerning the Sensitive Application Warning System (SAWS), or even an indication of a SAWS designation, in the record of Gofigure's patent applications. Gofigure is prosecuting a continuation application in this patent family and has reason to believe that SAWS is still likely an issue (but there is no defined way to know).

Early this year, I discovered an article written by Professor Shobita Parthasarathy, a University of Michigan professor, which corroborates Gofigure's experience. The article is entitled *Whose knowledge? What values? The Comparative politics of patenting life forms in the United States and Europe,* Policy Sciences: Integrating Knowledge and Practice to Advance to Human Dignity, Vol. 37, No. 2 June 2004, *The Journal of the Society for the Policy Sciences* (copyrighted by Springer Science+Business Media 2011) (Policy Sci DOI 10.1007/s11077-011-9133-7; ISSN 0032-2687). The article references the SAWS policy (see page 13-14) and reads in part –

> *On occasion, however, the PTO's personnel worry that the potential for public backlash is too great to issue the patent. An official noted that in such cases, ". .*

> *.the PTO will try to find some way to continue to reject the application. The PTO has lots and lots of tools . . . . So, essentially it is a question of finding a way to continue to reject it." (PTO Employee a 2009). It is unclear, however, how often the PTO uses the SAWS to reject patents. In sum, the SAWS provides the PTO with a mechanism to identify potentially problematic applications and conduct additional internal review, as a means of preparing for, or perhaps even avoiding, negative publicity.*

Earlier this year, I wrote to the Honorable Patrick Leahy and the Honorable Charles Grassley, Chairman and Ranking Member, respectively, of the Senate Committee on the Judiciary and copied members of that Committee. I provided a detailed account of Gofigure's experience with SAWS and, in particular, explained why fee-shifting legislation cannot exist in light of such a policy (and raised questions).

There are many unanswered questions. I had hoped that our Senators would have taken the opportunity to ask USPTO Deputy Director Michelle Lee questions about the USPTO's SAWS policy during her confirmation hearing **as suggested by Gene Quinn**. In addition to the questions presented by Quinn, here are a just a few additional questions that I believe should be asked:

1. The Patent Trial and Appeal Board (PTAB) is notified when a patent application on appeal or a patent under post-grant review is in the SAWS program (I have confirmation of this from the USPTO). Why?

2. Are their scenarios (and, if so, what are they), under SAWS, in which the USPTO identifies prior art that is material to a patent or patent application under review but does not cite (or delays citing) that prior art?

3. How many patents and patent applications are currently designated in SAWS? Averages? Trends? etc.

4. How is a patent or patent application removed from SAWS? What facts are considered?

Hopefully these and many other questions will be answered and proper transparency will be brought to what is supposed to be a completely transparent interaction between applicant and the USPTO.

APPENDIX
TAB 2

US007065342B1

(12) **United States Patent**
Rolf

(10) **Patent No.: US 7,065,342 B1**
(45) **Date of Patent: Jun. 20, 2006**

(54) **SYSTEM AND MOBILE CELLULAR TELEPHONE DEVICE FOR PLAYING RECORDED MUSIC**

(75) Inventor: **Devon A. Rolf**, Kansas City, MO (US)

(73) Assignee: **GoFigure, L.L.C.**, Paola, KS (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 387 days.

(21) Appl. No.: **09/721,120**

(22) Filed: **Nov. 22, 2000**

Related U.S. Application Data

(60) Provisional application No. 60/167,179, filed on Nov. 23, 1999.

(51) **Int. Cl.**
H04L 12/58 (2006.01)

(52) **U.S. Cl.** **455/412.1**; 455/426.1; 455/185.1; 455/3.06

(58) **Field of Classification Search** 455/185.1, 455/418, 3.06, 426.1, 419, 405, 406, 412.1, 455/566, 569.2, 575.9; 704/270, 275, 219, 704/222
See application file for complete search history.

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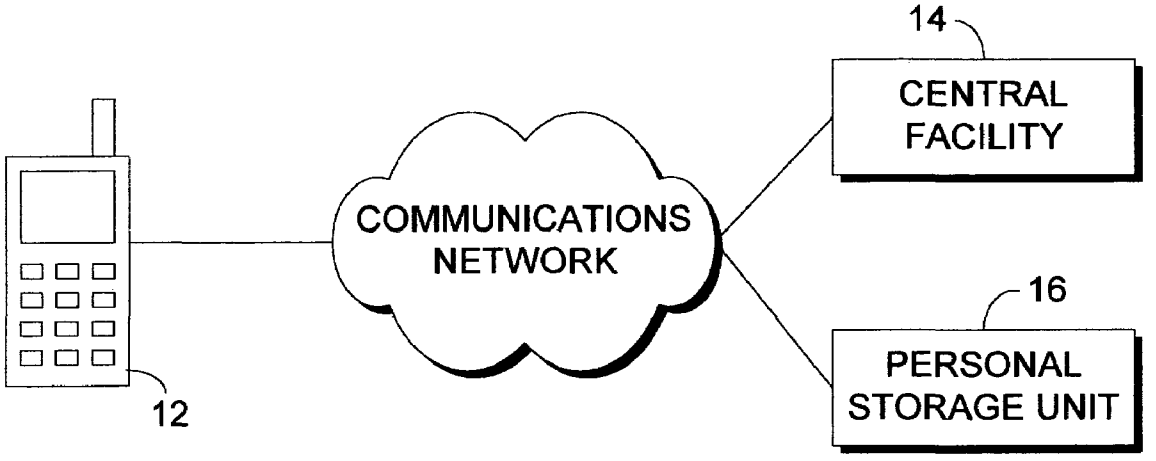
(Continued)

Primary Examiner—Joseph Feild
Assistant Examiner—Huy D. Nguyen

(57) **ABSTRACT**

A mobile cellular telephone is used to select a music recording from a remote source, such as online music recording storage facility, and wirelessly receive the selected music recording. The received music recording is stored in a memory of the cellular telephone where it is available for playback with an audio player in the cellular telephone. Additional information, such as a title and artist associated with the music recording, is transmitted from the remote source to the cellular telephone with the music data. During playback of the music recording, the information is presented on a display of the cellular telephone. A system includes the remote music source and the mobile cellular telephone and may include an online user account via which the music recording is selected and downloaded to the cellular telephone.

46 Claims, 4 Drawing Sheets



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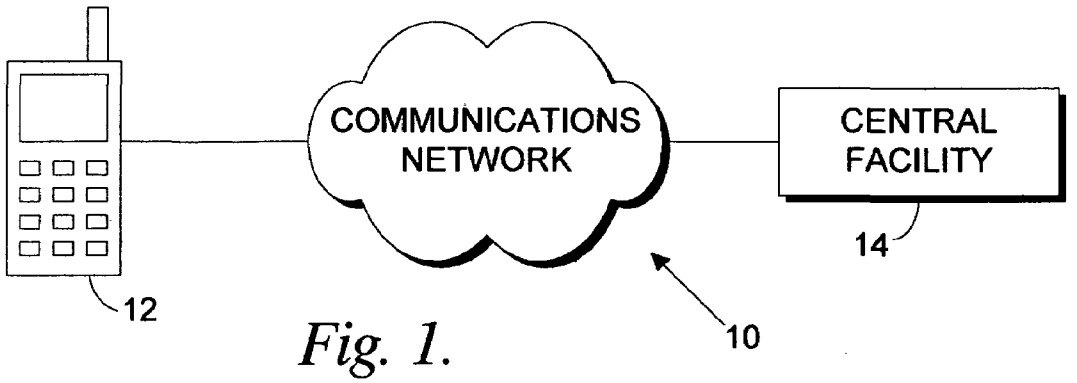

Fig. 1.

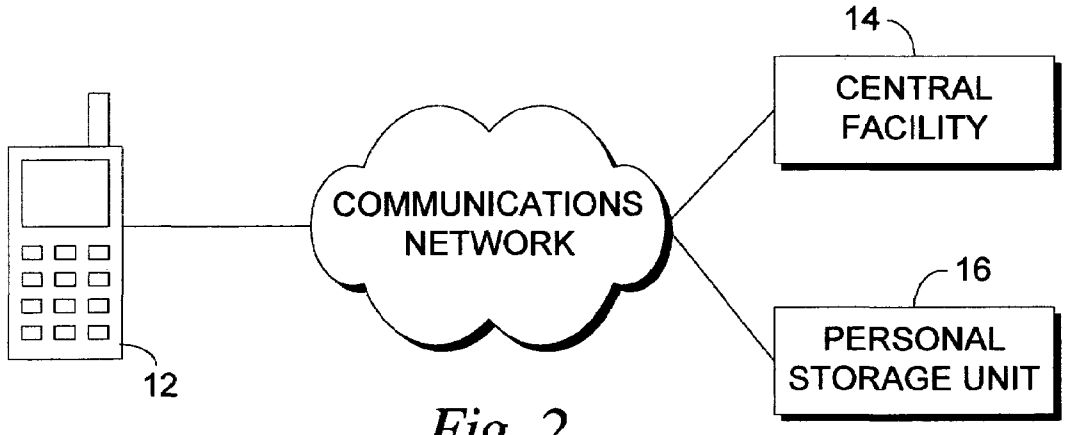

Fig. 2.

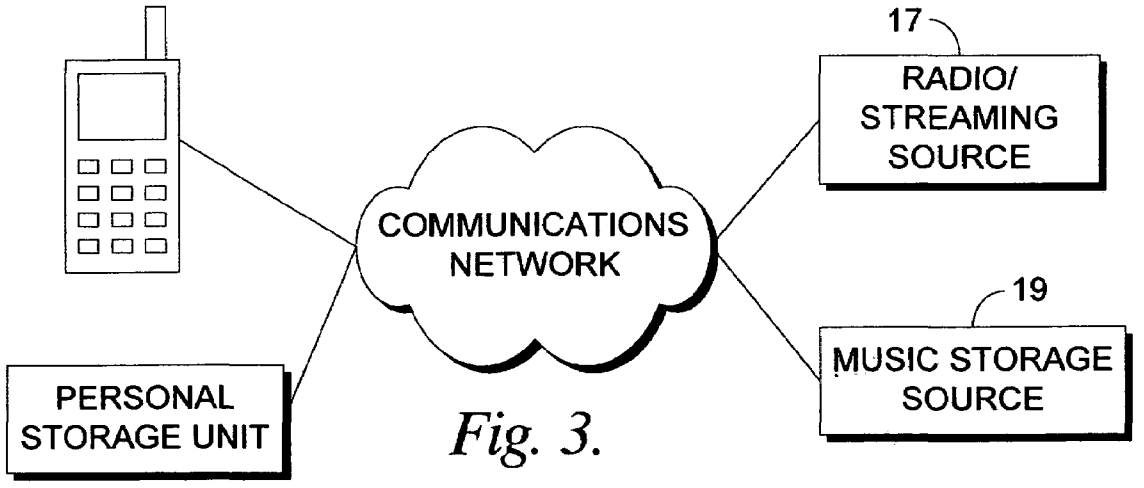

Fig. 3.

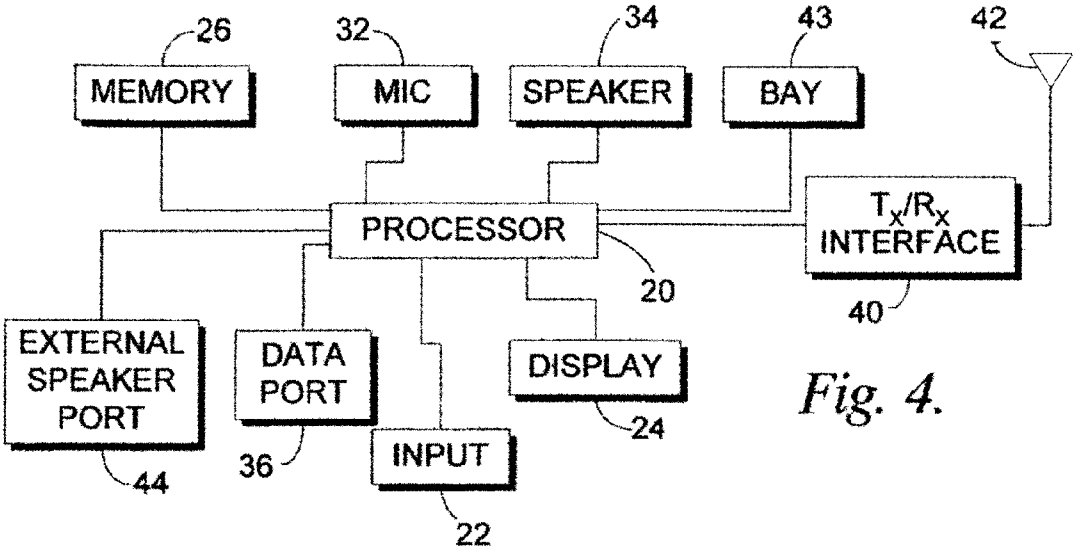

Fig. 4.

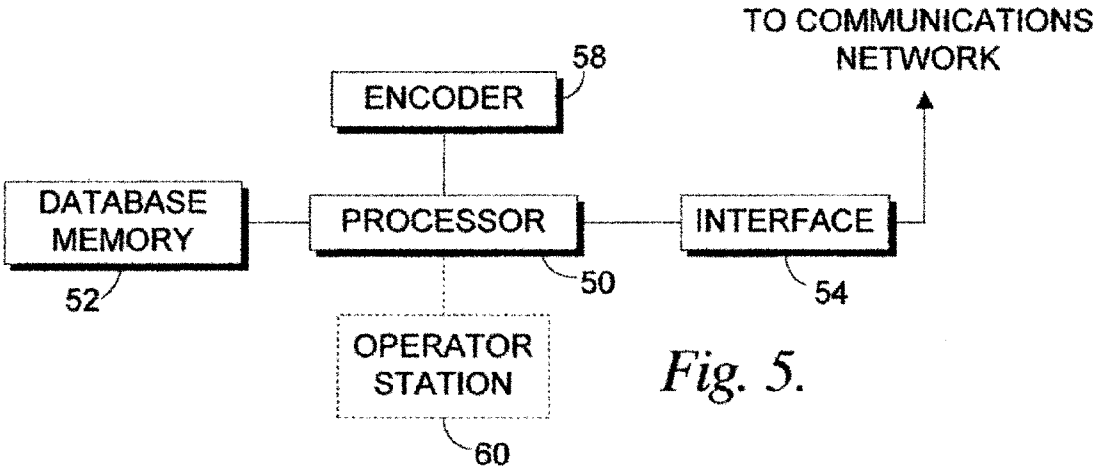

Fig. 5.

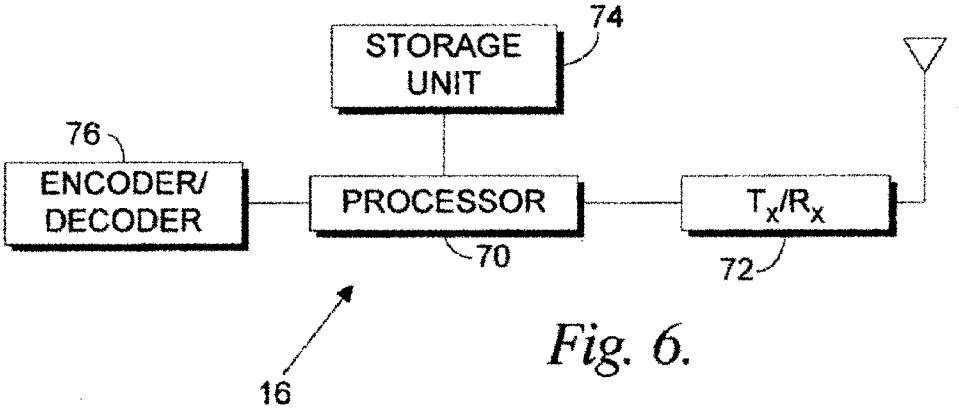

Fig. 6.

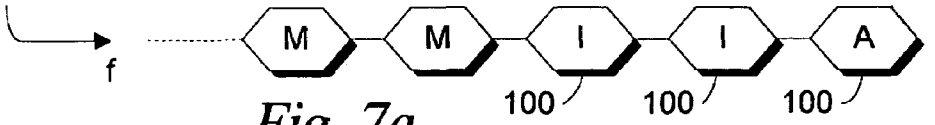

Fig. 7a.

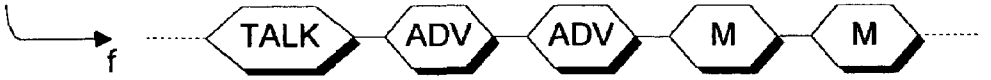

Fig. 7b.

Fig. 7c.

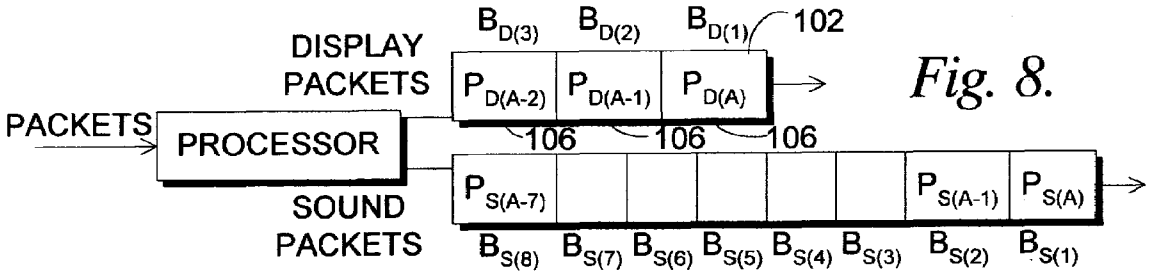

Fig. 8.

Fig. 9a.

Fig. 9b.

Fig. 9c.

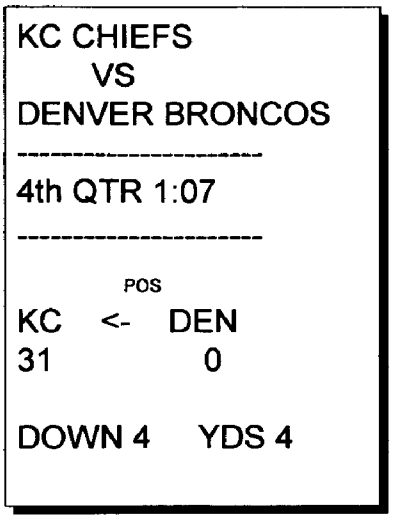

Fig. 9d.

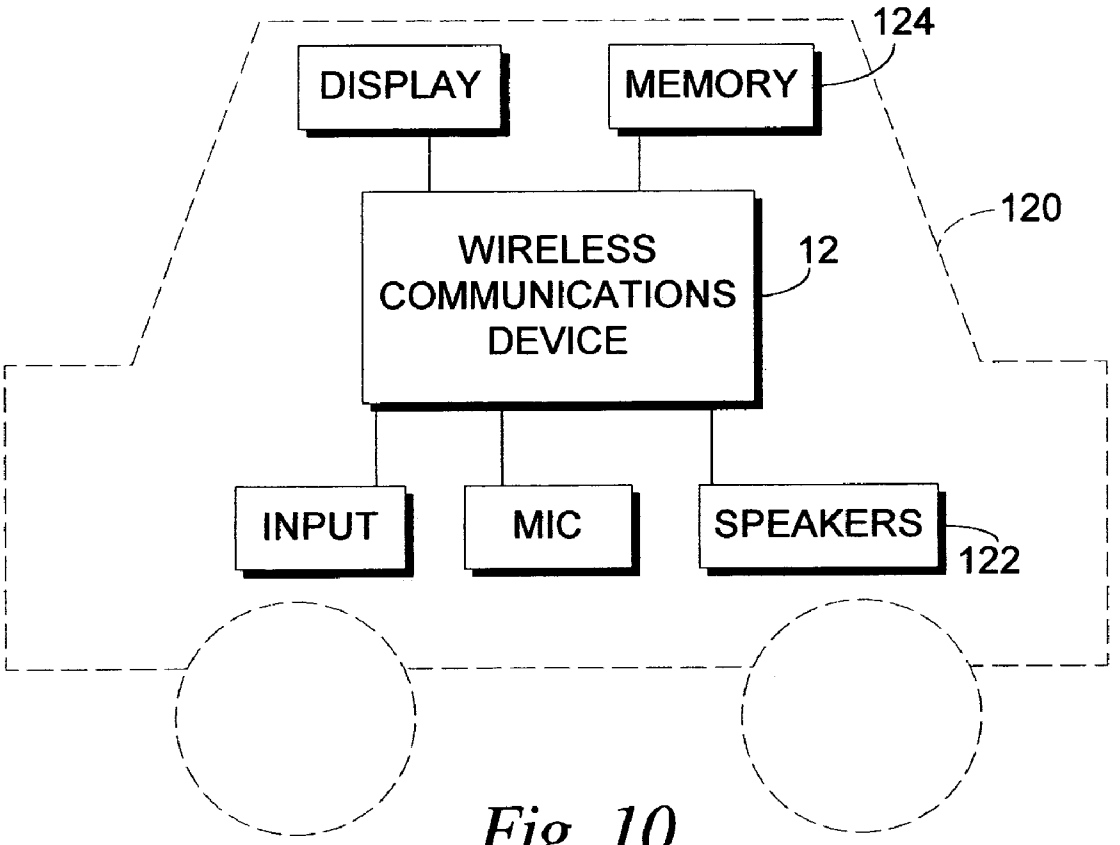

Fig. 10.

SYSTEM AND MOBILE CELLULAR TELEPHONE DEVICE FOR PLAYING RECORDED MUSIC

CROSS-REFERENCE TO RELATED APPLICATIONS

The present application claims priority from U.S. Provisional Application Ser. No. 60/167,179, filed Nov. 23, 1999, entitled "System, Method, and Device for Playing Recorded Music on a Wireless Communications Device".

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention is generally directed to a system and method for wirelessly transmitting encoded music, via a wireless communications link, to a portable or mobile communications device which includes a player for playing the music or audio.

SUMMARY OF THE INVENTION

In one embodiment, the present invention is a system for transmitting encoded music from a remote, central facility to a wireless communications device, such as a cellular telephone or personal digital assistant. In particular, a user of the cellular telephone (for example) may use the telephone to establish a wireless communications link with the remote, central facility, and then wirelessly download one or more selected music recordings for storage in a memory of the cellular telephone. In particular, the selected music recording(s) is/are transmitted via a wireless data communications link to the cellular telephone. Preferably, the music recordings are encoded and transmitted in packets, and may particularly be encoded by a compression algorithm into an encoded (such as MP3 or other) format.

Using an input of the cellular telephone, a user may select one or more recordings for transmission to the cellular telephone. The selected music recordings, upon receipt by the cellular telephone, are stored in a memory. In one embodiment, the memory is an internal memory. Alternatively, the memory may be a separate cartridge or memory stick (such as a flash memory cartridge) for movable installation in a bay on the telephone. A player within the cellular telephone may then be initiated to play the music recordings, for output on a speaker. In particular, the speaker may include earphones or earplugs connected to a port on the cellular telephone. Alternatively, the player may output the music through an internal speaker of the cellular telephone.

In an alternate embodiment, the wireless communications device is utilized in combination with a vehicle, and a player, a memory for storing the music, and at least one speaker, are located within the vehicle, such that selected recordings may be retrieved from the remote central facility, and played in the vehicle. In this embodiment, the memory may include one or more burnable CDs, and will typically have far more memory storage capacity than the memory of the cellular telephone, which is utilized in the previous embodiment.

In either embodiment, the wireless communications device preferably includes a buffer for streaming data indicative of the music. Additionally, the wireless communications device is preferably a cellular communications device and, in particular, is a cellular voice communications device, such as a cellular telephone.

In accordance with yet an additional aspect of the present invention, the wireless communications device of the present invention (whether it be handheld or installed within a vehicle) retrieves recorded music from a personal storage unit of the user. For example, a user may have a CD tower, flash memory unit, etc. in his or her home or apartment, or may have a personal storage account at a central facility. A plurality of recordings may be stored in the personal storage unit. The personal storage unit is accessible via a wireless communications link from the wireless communications device, to thereby enable the retrieval of selected music from the user's own storage facility. Additionally, such a system permits the user to easily mix recordings from a number of different recordings from his or her own storage unit.

Thus, the system of this embodiment of the present invention utilizes the central facility having music recordings stored therein, a personal storage facility located remotely from the central facility, such as in the residence of a user, and the wireless communications device. In this embodiment, when a user selects one or more recordings from the central facility, rather than the recordings being transmitted to the wireless communications unit directly via a wireless communications link, they are rather transmitted to the personal storage unit of the user. Once stored in the personal storage unit, the user can then access his or her personal storage facility via a wireless communications link for retrieving, via the wireless communications link, one or more selected recordings. In accordance with this embodiment of the present invention, the encoded music transmitted to the personal storage unit may be stored in a flash memory or, alternatively, may be stored on burnable CDs or any suitable storage medium. In this regard, the encoded music transmitted to the personal storage unit of the user may be decoded, for storage in a decoded manner such that it may be played by more traditional music players or, alternatively, may be stored directly in its encoded format. When stored in a decoded format, music recording is again encoded at the personal storage unit upon retrieval. The personal storage unit may be located at the central location or at a remote site or may comprise a personal computer or an entertainment center, including such components as a display screen (e.g., TV or information TV), stereo, speakers, etc, or as stated, an account at a storage location. It should be understood that wirelessly retrieving a recording from a personal storage unit that is located in physical proximity to the user (e.g., an entertainment center, TV, personal computer, etc.) may be accomplished either by connection with a wide area communications network, or alternatively, by a local area wireless connection or protocal, such as Bluetooth and other such technologies.

It should be understood that the transmittal of the recording to the personal storage account may embody transmitting only a portion of the recording, such as the title and memory (e.g., address) storage location of the recording, such that the personal storage account serves as a directory or index for retrieval of acquired or accumulated recordings. In this regard, the recordings may be stored in a contained database, or may be located at multiple storage sites dispersed within a network. In either case, each recording will have a programmed address to which the personal storage account will point for a corresponding recording. Upon access to the personal storage account by the account holder (via a communications device), and after entry of any required passwords, the user may select one or more recordings for streaming or download, whereupon the recording(s) will be retrieved. Temporary copying/cloning techniques

may be used to insure at least substantially simultaneous accessibility to the recording by a large number of users.

In accordance with an additional aspect of the present invention, information pertaining to the music recording, such as the artist, title of the recording, an album from which the recording came, the date of the recording, etc. is also transmitted with the recorded music, such that the informational data is displayed on a display of, or associated with, the wireless communications device when the particular recording is being played. Additionally, it is an aspect of the present invention that an identifier, such as a server address, associated with the remote central facility is encoded along with the transmitted data, such that a selected input on (or associated with) the wireless communications device may be pressed for automatically reconnecting with the central facility or personal storage unit.

In preferred embodiments of the present invention, the wireless communications link established between the wireless communications device and the central facility is a cellular communications link and, more particularly, is an Internet link. In other words, the encoded music and/or informational data is preferably transmitted via a packet switch network, and particularly is preferably transmitted at transmission speeds greater than 50 KHz, such as by a next- or third-generation wireless communications network.

In accordance with yet an additional object of the present invention, the music recordings transmitted to the wireless communications device from the central storage facility, or from the personal storage unit of the user, may be transmitted in a real, or substantially real, time basis. In other words, rather than downloading one or more recordings to a memory within the wireless communications device, encoded music may be streamed directly from its source, for input into a buffer within the communications device, and for play at the communications device, without being otherwise stored in the device. In other words, the music is played as it is streamed from the central storage facility or personal storage unit of the user.

In accordance with yet an additional aspect of the present invention, the wireless communications device receives a sound stream from a source, where the sound stream is in a real time broadcast. For example, a radio broadcast may be encoded and transmitted via a wireless communications link to the wireless communications device. The broadcast may, for example, be a broadcast of music or, preferably, is a traditional radio-type broadcast having transmission of recorded music, advertisements, and voice from one or more disc jockeys. Accordingly, the source (e.g., radio station) may have a plurality of inputs for inputting stored music, stored advertisements, or real time voice from a disc jockey. The input information is encoded (if not already encoded) and transmitted to the wireless communications device via an established communications link. In particular, the data stream is a stream of data packets which are streamed through a buffer of the wireless communications device for decoding and play.

In accordance with the particular aspect of this embodiment of the invention, informational data associated with music or advertising being transmitted is displayed on the display. More particularly, information transmitted to the wireless communications device may be associated with a particular input on the device, such that a communications link corresponding to the displayed information may be made. For example, when a music recording is being played at the wireless communications device, data indicative of that recording may be displayed on the display, and, additionally, a selected key on the wireless communications device may be pressed to transmit a signal to the source of the stream that the user of wireless communications device wishes to purchase the music recording. Alternatively, the signal may be transmitted to a remote music storage facility for effecting a purchase of the recording or its associated album. In this regard, the purchase can be conducted in an electronic input mode or, alternatively, a link may be established for transmitting voice communications to and from the source or music storage facility (as the case may be) at which the sound recording or its associated album is to be purchased. In making the purchase, the user may select whether to have the sound recording or its associated album downloaded to the wireless communications device (if memory space permits), or to a remote personal storage unit or account of the user, or to have the sound recording or album stored on a storage medium and transmitted to an address of the user by mail or courier. In accordance with an additional aspect of the invention, payment for the sound recording or album may be made at the time or, alternatively, a monetary amount corresponding to the purchase may be billed to a periodic invoice associated with the wireless communications device (such as a telephone bill).

As another example of utilization of the present invention, information corresponding to an advertiser may be displayed on a display screen during an advertisement, and an identifier (such as an electronic address or telephone number) may be associated with a particular key on the communications device, such that activation of the key establishes a voice and/or data communications link with the advertiser, such as for the purpose of making a purchase of goods or services advertised. Additionally, and preferably, an identifier (such as an address or telephone number) associated with the radio station or streaming source is allocated to a particular key, such that the user may contact the source and transmit information thereto, or have a voice conversation with the source. This is particular advantageous for responding to call-in shows, trivia contests, games, etc. sponsored by the source/radio station.

As another example of the transmission of sound and information, the broadcast from the source may be a real-time broadcast of an athletic event, broadcast by one or more announcers. The voice signals of the announcer is encoded and transmitted to the wireless communications device **12**. Additionally, information corresponding to the athletic event being broadcast may be transmitted and displayed on the display. For example, the contestants, the scorer of the contest, the time remaining, and other circumstances relating to the game may be transmitted and stored. Preferably, this informational data is periodically transmitted, so as to update the display.

BRIEF DESCRIPTION OF THE DRAWINGS

The objects and features of the invention noted above are explained in more detail with reference to the drawings, in which like reference numerals denote like elements, and in which:

FIG. **1** is an illustration of a system of a first embodiment the present invention;

FIG. **2** is an illustration of a system of a second embodiment of the present invention;

FIG. **3** is an illustration of a system of a third embodiment of the present invention;

FIG. **4** is a block diagram of a conventional wireless communications device utilized in accordance with the principles of the present invention;

FIG. **5** is a block diagram of a central facility of the present invention;

FIG. **6** is a block diagram of a personal music storage unit of the present invention;

FIGS. **7***a*–**7***c* are exemplary illustrations of how data is transmitted in packets;

FIG. **8** is an illustration of streaming data through one or more buses in accordance with the invention;

FIGS. **9***a*–**9***d* illustrate screen displays in accordance with the present invention; and

FIG. **10** is an illustration of a vehicular communications system for playing music in accordance with the principles of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

With reference initially to FIG. **1**, a system of the present invention for playing encoded music on a wireless communications device is denoted generally by reference numeral **10**. In particular, system **10** has a wireless communications device **12**, such as a cellular telephone. Preferably, wireless communications device **12** is a digital, cellular communications device, and is portable and handheld. In this regard, while one preferred communications device is a telephone, it should be understood that the wireless communications device may be types of devices, such as a palm or handheld computing device having wireless communications capabilities.

A communications link may be established between wireless communications device **12** and a remote storage facility, denoted by reference numeral **14**. The remote storage facility may, for example, be at an address on the world wide web, and includes a data base having a plurality of music recordings therein. Preferably, the music recordings are categorized by a plurality of selectable fields, such as "title", "artist", "album or CD type", "recording label", etc. Additionally, the music recordings are preferably encoded in an encoded format, such as MP3 (Mpeg-1 Audio layer 3). It will be understood that the music recordings may be encoded in other formats or, alternatively, may not be encoded at all. In this latter instance, remote storage facility **14** also includes an encoder (not shown in FIG. **1**) for encoding a recording when it is selected to enable it to be efficiently transmitted via a communications network **18**.

As will become apparent from the detailed discussion below, the wireless communications device **12** may be utilized to establish a communications link with the remote storage facility **14**. Then, using a keypad and input on the wireless communications device, or by voice commands, one or more selected music recordings may be retrieved from the storage facility **14**, for transmission, via wireless communications link, to the device **12**. As will become apparent from the detailed discussion below, the retrieved music recording or recordings may be stored in a memory within the communications device **12**, on a memory cartridge or stick insertable into the device **12** or, alternatively, may simply be strung through a buffer of the device **12** for playback, and not stored at the device **12**.

With additional reference now to FIG. **2**, an alternate embodiment of the present invention is illustrated and described.

In the embodiment of the present invention illustrated in FIG. **2**, a wireless communications device **12** communicates with a central facility **14** for retrieval of one or more stored music recordings. Also in this embodiment, in addition to the wireless communications device **12**, and central facility **14**, the system **10** of the present invention further includes a personal storage unit **16**. However, in this embodiment, the retrieved recordings (after being encoded if necessary) are not transmitted directly to the wireless communications device **12**, but are transmitted via a personal storage unit or account **16** of the user. It should be understood that the communications link between the central facility **14** and personal storage unit **16** may be either hard wired or wireless. In this regard, the personal storage unit **16** may be an account located at the facility **14**, or remotely therefrom. The storage unit for storing music recording may, for example, be in a home or residence of the user of wireless communications device **12**. As will be discussed in greater detail below, in this embodiment, one or more selected music recordings are transmitted to the selected, personal storage unit **16** of the user. Subsequently, the user of wireless communications device **12** establishes a wireless communications link with the personal storage unit for retrieving selected music stored therein.

In accordance with yet an additional aspect of the invention, a music recording desired to be played on wireless communications device **12** need not be fully stored within the device **12**. In this regard, for example, a music recording stored in central facility **14** or personal storage unit **16** may be streamed to the wireless device **12** via an established communications link. In such an instance, data packets are streamed through a buffer for play by a player each of which are in a memory **26** (see FIG. **4**), such that, as one data packet is played within the buffer, and then exits the buffer, an additional data packet is streamed into the buffer.

With reference to FIG. **3**, and in accordance with an alternate embodiment of the invention, a source of streaming audio **17**, such as radio station broadcasting signals, may transmit an audio stream to device **12**. Wireless communications device **12** may be utilized to establish a link with the radio station source **17**, for receiving an encoded stream of data indicative of the transmission of the radio station. In such an embodiment, the encoded stream of data packets are passed through a buffer for play by a player (see FIG. **4**), thereby making wireless communications device **12** a digital radio for receiving streams of encoded audio data.

Additionally, and in accordance with a particular aspect of the present invention, in addition to the audio data transmitted to the communications device **12**, informational data is also sent for display on display **24**. As will be appreciated, in view of the foregoing discussion, that informational data may be stored in packets and, preferably, is stored in packets that are transmitted at the beginning of a particular recording, or packets that are periodically spaced within a set of other packets. Thus, for example, when a particular music recording is played by the radio station, and output at the wireless communications device **12**, data indicative of the music recording is displayed on display **24**. In accordance with a particular aspect of the present invention, at least a portion of that informational data is associated with a selected input on communications device **12**, such that upon activation of the input, the user of communications device **12** may order (for purchase) an authorized copy of the recording, or the album upon which the recording is placed. In this regard, upon activation of the key associated with the informational data, in one embodiment, while pressing the key associated with the selected information, data indicating that the user desires to make a purchase is transmitted to the station/source **17** or other facility. It should also be understood that the informational data may be retained at the server which is sourcing the recording, such that activation of a selected input causes a signal to be transmitted to the

server, the receipt of which is matched with the information pertaining to the recording being transmitted. In any case, the purchase can be effected via the station/source **17** or other site, such as indicated by music storage source **19**, either through appropriate inputs on the communications device **12**, or by establishment of a voice communications link with the central facility **14**.

In addition to the user having a choice of whether to buy the single being played, or the entire album on which the single is located, the user also has the opportunity to select the manner in which the purchased recording or album will be distributed to the user. For example, the purchased recording or album may be downloaded to the wireless communications device **12** (if memory space suffices) or, alternatively, may be downloaded to the user's personal storage unit **16**. Alternatively, the user can select to have a storage medium upon which the music is recorded (such as a CD, for example) mailed to a selected address of the user.

Accordingly, the present invention provides a very unique feature for the distribution and purchasing of music recordings, by allowing an individual to make a purchase of a recording and/or its associated album upon hearing the recording.

In accordance with yet an additional aspect of the present invention, as the radio station transmits audio advertising content, informational data indicative of the advertiser is displayed on display screen **24**. In particular, data indicative of a URL or telephone number is preferably associated with a particular key on the communications device **12**, such that by pressing the associated key, a communications link (either data or voice) is established with the source of the advertising. Thus, for example, during an ad for "Pizza Hut", a particular button may be pressed to establish a communications link with a telephone number or address associated with Pizza Hut, for the purpose of ordering a pizza. In this embodiment, the communications device **12** preferably has an additional buffer for buffering the informational display data. Moreover, in a preferred embodiment, data indicative of a plurality of most recent advertisements is preferably stored in the buffer, and associated with a corresponding number of inputs or a menu driven system, such that, sources associated with the most recent advertisements may be readily contacted.

It is contemplated within the scope of the present invention that a server for accessing content transmitted by the radio station may be a satellite server as well. In other words, the communications link may or may not include a satellite communications link.

With additional reference to FIG. **4**, wireless communications device **12** has a processor **20**. Connected to processor **20** are an input (such as a keypad **22**), a display **24**, a memory **26**, a microphone **32**, a speaker **34**, and a port **36**. Additionally, a DTMF encoder/decoder (or just an encoder, if desired) **38**, and a transceiver **40**, and antenna **42** are connected as shown. Additionally, wireless communications device may have a bay **43** for receiving a memory cartridge or stick, such as a flash memory unit. Furthermore, device **12** has an external speaker port (e.g., for ear plugs or headphones) **44**. The construction of conventional wireless communications devices, such as cellular phones, is well known. However, in accordance with the present invention, a buffer and a player for playing encoded music through an internal speaker, or via headphones or earplugs connected to a speaker port, such as port **44** are provided. In accordance with the invention, the player is a set of encoded instructions, stored in a memory **26**, for decoding and playing recorded, encoded music as it is streamed through a buffer. Additionally, device **12** may have a bag or port for receiving a memory cartridge or stick, such that recordings may be stored on a removable memory device, and such that recordings played by the player are retrieved from the cartridge or stick.

In this regard, the wireless communications device **12** may be provided from a manufacturer with a player already installed in the device **12**. Alternatively, the player may be loaded into the communications device **12** by an end user of the device. In this regard, and in accordance with an aspect of the invention, a user of communications device **12** may establish a communications link with a central facility, such as storage facility **14**, and utilizing inputs on the device, such as a keypad, or a microphone (where the inputs are by voice), make appropriate selections for retrieving an encoded player for storage in the communications device **12**. In this regard, when such a selection is made, the set of instructions comprising the player are themselves preferably encoded (if they are not already encoded), and transmitted via the wireless communications link to communications device **12**, for storage in memory. Accordingly, it is a particular aspect of the invention to wirelessly load a set of instructions, and particularly a music player for decoding encoded, recorded music, into a wireless communications device, such as a cellular telephone or communications equipped palm computing device, such as a portable digital assistant. As part of the invention, data indicative of the type of operating system installed within communications device **10**, and/or memory storage limitations, may be transmitted to central facility **14** for use in selecting a player from a plurality of players.

In accordance with another aspect of the invention, any charges associated with downloading a player (which would preferably be free) and/or loading recordings may be charged directly to a periodic invoice associated with the wireless communications device, and particularly associated with other services (such as telephone services) associated with the wireless communications device **12**. Alternatively, and in accordance with an aspect of the invention, subscriptions may be established such that a user of communications device **12** may have unlimited or a selected amount of access to the music stored at remote facility **14** so long as a periodic subscription fee is paid. For example, for a selected periodic subscription fee, a selected number of recordings (or albums) may be retrieved. Beyond the selected number within the period, additional fees would be incurred. In this regard, and in accordance with the particular aspect of the invention, the subscription fee is invoiced together with other charges associated with services for usage of the wireless communications device **12**. Alternatively, purchases may be accounted for via electronic transmission of an account number of the user, or in more traditional manners.

With reference initially to FIG. **5**, a block diagram of the central facility **14** is illustrated and described.

In particular, a central facility **14** has a processor **50**. Connected to the processor **50** are a data base memory **52** and a interface **54** (such as a transceiver or modem) for transmitting and receiving communications signals. In addition, the central facility **14** may also have an encoder **58** and an operator station **60**. The encoder **58** is a set of processing instructions stored in a memory for encoding music recordings stored within data base memory **52**. In particular, when wireless communications device **12** accesses the central facility **14** via the communications network for purpose of retrieving one or more selected recordings, the encoder **58** may be utilized to encode the music, according to any

preferred encryption and/or compression algorithm (such as mp3, liquid audio, etc.), for transmission of the encoded recording(s) to the wireless communications device **12**. Alternatively, the music recording stored within data base memory **52** may be stored in an encoded/compressed manner, such that the encoder **58** is not necessary. While the operator station **60** is not necessary, it may be provided for allowing the user of wireless communications device **12** to have a voice conversation with an operator employed at the operator station **60**. As will be appreciated, in the absence of an operator, processor **50** invokes application software for providing a menu driven system to wireless communications device **12**, such that the wireless communications device **12** can be utilized to select recording via a menu or listing of recordings. Alternatively, the central facility **14** may be equipped with a voice response system, such that an individual at wireless communications device **12** makes necessary entries/selections via voice commands.

With additional reference to FIG. **6**, a personal storage unit **16** is illustrated and described.

Personal storage unit **16** has a processor **70**. Connected to the processor **70** is interface **72** (such as a transceiver or modem). The personal storage unit **16** also includes a storage unit **74**, such as a CD ROM tower, flash memory, or other storage medium, etc., for storing music recordings. Additionally, the personal storage unit **16** may include a decoder/encoder **76** which is a series of software instructions for decoding and encoding music recordings. In this regard, and in accordance with the embodiment (as set forth in FIG. **2**) in which the wireless communications device is utilized to retrieve selected recordings from central facility **14** for storage in the personal storage unit **16**, the encoded music received from central facility **14** at the personal storage unit **16** may first be decoded prior to storage in the storage unit **16**. In such an instance, upon retrieval of a selected recording from the personal storage unit **16** for play at the wireless communications device **12**, the encoder first encodes a retrieved recording for wireless transmission to the wireless communications device **12**. Alternatively, it should be understood and appreciated that the encoded music received by the personal storage unit **16** may be stored in an encoded fashion, such that the decoder/encoder is unnecessary.

In accordance with one aspect of the invention, personal storage unit **16** may also be a memory storage location at the central facility **14**, or other remote site. In this way, a user of device **12** may have a personal account for storing recordings, such that the account (e.g., personal storage unit **16**) is accessible via device **12** and other devices (such as a personal computer). As described above, a personal storage account may store only selected information pertaining to a recording, such as a title and an address or memory location of the recording, such that a recording may be retrieved through a corresponding account listing by accessing and/or retrieving the remote file containing the selected recording. It is also specifically contemplated that such a personal storage account system may employ a file sharing program such that the listings in the account do not include corresponding addresses, but that the file sharing program merely searches for an approved (based upon defined standards) copy of the recording, and then retrieves the recording once found. Alternatively, the personal storage account may include a last known address of a selected recording and, when that address no longer contains the recording, a search for an approved version of the recording is made and, when found, the last known address is updated. As will be appreciated, use of a common database or a network-oriented file sharing approach, accessible via a personal storage account, conserves storage space since it does not require a single copy of the recording for each user that acquires the recording.

With reference now to FIG. **7**, a representative example of how data packets are transmitted in accordance with a protocol of the present invention is illustrated. In particular, with reference to FIG. **7***a*, data is transmitted in a plurality of data packets **100**. In particular, for example, the first set of data packets, including one or more packets **100**, may include information pertaining to an identifier or address associated with a source of the streamed data. In the example of FIG. **7***a*, the packet is marked with a "A", and is an initially transmitted packet. Additional packets may contain information pertaining to a music recording being transmitted, and as illustrated in FIG. **7***a*, any such packets are designated by a "I". The remainder of the packets include data indicative of the music recording being transmitted, and are labeled "M". In the example of FIG. **7***a*, the address identifier and the information pertaining to the music recording are transmitted first, and thus serve as a header. It will be understood and appreciated that the address and/or information data may be transmitted to other locations within the data stream.

In the example of FIG. **7***b*, a real time data stream is illustrated. As illustrated, the data stream includes music, followed by data indicative of an advertisement (and labeled ADV), followed by data packets indicative of talk. Such a data stream would be representative of the real time radio broadcast, including music, advertising, and talk from a disc jockey or host.

In the example of FIG. **7***c*, data indicative of a voice broadcast, labeled "talk" is encoded in packets, and other "data", as labeled, is interspersed within the talk data packets in accordance with protocol. This illustration, for example, the broadcast may be a real time broadcast of an athletic event, wherein the data packets include data indicative of the circumstances of the athletic event, such as the score of the game, or other circumstances. It should be understood that any desired protocol may be employed. Additionally the data is preferably compressed and encrypted such that subsequent decoding involves both decompression and de-encryption.

With reference to FIG. **8**, one preferred example of how the data packets are processed is illustrated. For example, data packets received by wireless communications device **12** are processed by processor **20**, and passed through at least one buffer. In the simplest embodiment of the present invention, only a single buffer is needed, such that all data packets are transmitted through the same buffer. However, in a preferred embodiment, multiple buffers or stacked memory are/is utilized, for the purpose of separating data packets corresponding to different features. For example, as illustrated in FIG. **8**, the processor **20** (or a data parser) transmits those packets containing data for displaying on a display of the wireless communications device to buffer **102**, while data indicative of sound (e.g., audio such as talk, music, etc.) are streamed through a sound buffer **104**. As illustrated, each of the buffers **102**, **104** have corresponding buffer locations, indicated as B_{dn}, for streaming data packets such as P_{dn} (for display data), or P_{sn} (for sound data). Additionally, as illustrated in FIG. **8**, each of the buffer locations of display buffer **102** may have a correspondingly associated input, designated by inputs **106** such that information displayed on a display may be associated with a particular input on the wireless communications device. In this regard, for example, when information indicative of an identifier of a source of the music or of an advertiser is

displayed on the display, the corresponding input may be activated to establish a communications link with that source or advertiser. Alternatively, as will be appreciated, packets containing address or identification information, such as that packet labeled "A" in FIG. **7***a*, may be routed through yet an additional input buffer, wherein buffer storage locations within which the input buffer corresponding inputs on the wireless communications device **12**.

With reference to FIGS. **9***a*–**9***d*, display screens of wireless communications device **12**, in use, are illustrated. For example, in the illustration of FIG. **9***a*, data indicative of an artist, album, or recording data associated with a particular music recording being played by wireless communications device **12** is illustrated. Additionally, data indicative of a source of the music recording is illustrated and, preferably, positioned on the display in association with the corresponding keypad input, such that by pressing the keypad input **106** a communications link with the source will be initiated. It will be understood and appreciated that, in view of the foregoing discussion regarding data packets and buffer storage locations, that data indicative of an identifier of the source may be stored in a corresponding buffer location associated with the keypad input.

FIG. **9***b* is illustrative of a situation when an advertisement in a streaming audio signal is being output by the player, with corresponding data displayed on the display screen. In the example illustrated, the user is invited to order a large pizza from Pizza Hut. In accordance with the invention, the user may place an order during the advertisement by pressing a button corresponding with "order" display feature on the display. Again, this is accomplished through the positioning of data and corresponding memory location, where the data includes an identifier (such as an address or telephone number) for establishing a communications link with the advertiser. As is also illustrated, in the scenario in which a user of communications device **12** is receiving a real time streaming audio broadcast, data indicative of the real time streaming broadcast includes data indicative of the station or streaming source from which the broadcast is being received is transmitted, and stored in a particular memory or buffer storage location, and associated with a keypad input, such that the station may be contacted with a single entry. This is particularly useful for call-in shows, contests, making requests to the station, etc.

With additional reference to FIG. **9***c*, an example of real time streaming broadcast, in which music is being output along with corresponding data on the display, is illustrated. In accordance with an aspect of the present invention, data indicative of a site at which the particular music recording is being played (and/or it associated album or video) can be ordered is transmitted and associated with a particular input, as evidenced by "order" on the display at which location is associated with a particular keypad input on the wireless communications device. Accordingly, while listening to the music recording, an individual may activate the order key and be connected with a source for ordering that particular music recording. For example, the identifier or address associated with the "order" location may be the source of the streaming music, or alternatively, may be a remote music storage source, such as indicated by reference numeral **19** in FIG. **3**. Additionally, upon activation of the order key, either a data, a voice, or a combined voice/data link may be established with the source at which the music recording is to be purchased, and the purchase may be conducted in a purely electronic fashion, or by speaking with an operator. Preferably, such a link terminates the link with the streaming source, although terminating the initial link may not be necessary if there is sufficient bi-directional bandwidth available. Additionally, a selection of how the purchase is to be made could also be entered using wireless communications device **12**. For example, purchase may be made such that a complete copy of the sound recording (or its associated album) is downloaded to the memory **26** within wireless communications device **12**. Alternatively, the user can specify, either by input, or through a previously established account with the source at which the recording is being purchased, to have the music recording downloaded to a remote, personal storage unit, such as the personal storage unit **16** indicated in FIGS. **2** and **3**. Alternatively, the user may simply select to have the music recording located on a transferable medium, such as a CD or DVD, and courriered or mailed to a selected address of the user.

Additionally, as illustrated in FIGS. **9***b* and **9***c*, the contact information is preferably buffered or QUED in such a way that at least one additional, previous address or identifier is temporarily stored. For example, where the data first includes an advertisement from Pizza Hut (as in FIG. **9***b*), and then streams a recording by Jewel (as indicated in FIG. **9***c*), the data indicative of Pizza Hut is moved over one location on the display and associated with a different key, such that even after the Pizza Hut advertisement has concluded, a communications link with a Pizza Hut central source may still be made. It will be understood and appreciated that the QUE or buffer for retaining prior items associated with particular sets of data streams may also be retained in memory, although not displayed on the display, such that through utilization of a scroll feature previous items may be recalled.

FIG. **9***d* illustrates display of athletic contests, such as a football game. In accordance with the invention, and as described, as the user is listening to a broadcast of the athletic contest, data indicative of the contest may be transmitted, according to a protocol for display on the display. In the example of FIG. **9***b*, the data includes the contestants in the contest, the amount of time remaining in the contest, and in the instance of a football game, a possession arrow to indicate which team has possession of the football, a score, and down, yards to go, and location of the line of scrimmage. It will be appreciated that other circumstances associated with athletic events, depending upon the nature and type of the event, may be displayed. Additionally, the information is periodically updated as additional data packets including data indicative of the real time circumstances of the game are transmitted.

In use, a user of communications device **12** may establish a communications link via the communications network with the remote storage facility **14**. In a preferred embodiment, the facility **14** has a uniform resource locator (URL) on a global communications network (such as the world-wide web), and device **12** accesses the facility **14** via a server in the communications network. Alternatively, device **12** may be utilized to dial directly a telephone number associated with the storage facility **14**. Using keypad input **22**, or microphone **32**, when storage facility **14** includes voice recognition equipment, the user may select one or more music recordings for downloading to the wireless communications device. If the selected recordings are already encoded, they are transmitted to the wireless communications device **12** via the communications network, and stored in memory **32**. Alternatively, if the selected recordings are not already encoded by encoder **58**, they are first encoded at the storage facility and then transmitted via the communications network to the communications device **12**.

As will by now be appreciated in view of the foregoing, the communications device **12** may also be used for retrieving one or more music recordings from a remote storage facility **14** for storage in a personal storage unit **16** of the user. As described, the personal storage unit **16** may be a memory storage location at an address on the global communications network and, indeed, may be located at the remote storage facility **14**. In such an instance, when a communications link with a remote storage facility **14** is established with wireless communications device **12**, the user can select whether he or she wishes to select new recordings, or enter his or her personal storage unit account for retrieval of recordings that have already been purchased.

In accordance with a preferred aspect of the present invention, the music recordings are encoded in data packets for transmission via a packet switched network. In particular, it is preferred that the wireless communications network be a next or third generation network, such that data transmissions are at sufficiently high speeds, and preferably greater than 50 KHz.

Once an encoded music recording is stored in memory **26**, or on a memory cartridge, of the wireless communications device **12**, the input **22** may be utilized to control the player to play the recording. In this regard, when a music recording is retrieved from memory for play, the player decodes the encoded data packet according to conventional steaming techniques in the buffer. The player outputs the music via speaker **34** or, in the event earplugs or headphones are connected to port **44** of communications device **12**, then the music is outputted via the headphones or earplugs.

In accordance with an aspect of the invention, information relating to a music recording is preferably transmitted along with music recording data for storage in memory **26**. For example, data indicative of the artist, the title of the recording, the album or CD from which the recording came, the recording label, the date of the recording, or any other desired information may be stored along with the recording at storage facility **14**, and transmitted for storage in memory **26**. Preferably, the informational data is stored as a header (e.g., in one or more integrally transmitted data packets) (See FIG. **1**), such that processor **20** outputs the information to display **24**. Alternatively, informational packets may be disseminated between packets containing music data. Additionally, it is an aspect of the present invention that each music recording stored at facility **14** has associated therewith data indicative of an electronic address of the facility **14**, which address data is also transmitted to the communications device **12** upon retrieval of a music recording. Communications device **12** is programmed such that, upon retrieval and playback of the recording, the data indicative of the address of the storage facility **14** is associated with a particular key or input on communications device **12** and may remain stored in a memory location associated with that key even after playback is completed (or until replaced with other data). Thus, the user of communications device **12**, upon opening the "player application", will be able to immediately establish a communications link with storage facility **14** by pressing the program key. In this regard, informational data indicative of the address, or indicating to the user that a particular key may be pressed to establish a quick communications link with the storage facility **14**, is preferably displayed on the display.

Alternatively, the present invention may be utilized to stream audio which is music or broadcast, in real time, from a streaming source. In such an instance, the streamed data is not stored in an internal memory of wireless communications device **12** or in a memory cartridge, but simply streamed through the buffer and played. As described, information indicative of that which is being streamed may be simultaneously output on a display of the communications device. Particularly, contact information (e.g., a telephone number or electronic address) is preferably associated with an input such that an additional communications link may be established with a source or entity associated with the information. In the preferred embodiment described, for example, a user may establish a link with source of an advertisement for purpose of making a purchase. It should be understood and appreciated that the actual communications link made may be made through the streaming source (such as a radio station), or may be made through another remote site, such as a transaction clearing house. Additionally, it is contemplated that location information, such as may be obtained via an incorporated global positioning system unit, or by a network location determining feature, may be transmitted along with any signal such that the communications link may be routed, if desired, to a particular location. For example, in the instance of "Pizza Hut", which has a plurality of locations, the call may be routed to a nearest most Pizza Hut. Preferably, however, the call is initiated to a central location of Pizza Hut, or to a web site or answering service engaged by Pizza Hut and other entities for the purpose of taking orders. Additionally, it should be understood and appreciated that while the preferred input is a key on the telephone, or communications device **12** being employed, the input may be any other type of input, such as a voice activated input or a touch screen display, such as used on many conventional personal digital assistants.

From the foregoing description, it will be readily seen that a wide variety of other uses fall within the scope of the application. For example, in the preferred embodiment described, information indicative of the source at which a particular music recording being played is preferably associated with an input on the communications device **12**, such that activation of that input establishes a communications link with the source for the purpose of purchasing a music recording. However, in accordance with an additional aspect of the invention, a concert schedule of the artist or group that recorded the song being played may be accessed at the source, for the purpose of buying concert tickets. Accordingly, upon hearing a particular song, a user of communications device **12** can activate a single input and establish a communications link with a source for purchasing concert tickets. It should be understood that the communications link may be a voice communications link or, alternatively, may be a voice and/or data communications link, such that the tickets may be purchased electronically. In particular, while the concert information may be available at the described source, it should be understood and appreciate that additional data may be encoded in the data stream, and associated with a different input, such that activation of a first input establishes a communications link with a first source at which the music recording may be purchased, while activation of a second input establishes a communications link with a second source at which concert tickets may be purchased. It should be understood that the purchasing features of the present invention may be utilized on wired or wireless PCs and computing stations, as well as via wireless links. It should also be understood that, while the invention has been described with respect to music or sound recordings, various features of the invention are applicable to recordings of other types, such as video recordings.

With reference now to FIG. **10**, an alternative embodiment of the present invention, is illustrated and described. In particular, in the embodiment of FIG. **10**, the wireless communications device **12** is incorporated in a vehicle. Thus, in such an instance, each of the components of the wireless communications device, such as the processor, memory, buffer, input, display, microphone, speaker, etc. may not be encased within the same housing. In fact, it is preferred that a plurality of speakers **122** are utilized, and

spaced about the vehicle in a conventional fashion. Additionally, it is preferred that the memory **124** has much greater storage capacity than in a portable, handheld wireless communications device. In this regard, the memory may be one or more burnable CDs. The remaining aspect of this embodiment of the present invention is similar to those described above, and need not be reiterated here. In summary, the wireless communications device may be used to download selected, encoded music recordings and played via the vehicle speakers, or to stream a real time encoded broadcast. Preferably, the wireless communications device is also a voice communications device, such that voice connections may be made with the device, as well. It should be understood and appreciated that, in this vehicular embodiment, that a portable wireless communications device may be utilized in conjunction with in vehicle components, such that the wireless communications device communicates (such as by the cable connection) with one or more speakers, a storage unit, and/or an input.

From the foregoing it will be seen that this invention is one well adapted to attain all ends and objects hereinabove set forth together with the other advantages which are obvious and which are inherent to the structure.

It will be understood that certain features and subcombinations are of utility and may be employed without reference to other features and subcombinations. This is contemplated by and is within the scope of the claims.

Since many possible embodiments may be made of the invention without departing from the scope thereof, it is to be understood that all matter herein set forth or shown in the accompanying drawings is to be interpreted as illustrative, and not in a limiting sense.

What is claimed is:

1. A system for playing prerecorded music, said system comprising:

a portable, handheld wireless cellular telephone having a memory, a display a player, a microphone for voice communications, and a speaker; and

a remote storage facility, wherein said remote storage facility stores a plurality of music recordings, wherein said wireless cellular telephone is used to wirelessly select and retrieve from said remote storage facility at least one of said music recordings for complete storage of said music recording in said memory, and for playback through said speaker by said player, wherein at least one of a name of an artist who recorded said selected music recording and a title of said music recording is wirelessly transmitted from said storage facility in conjunction with said music recording and is displayed on said display of said cellular telephone in conjunction with playback of said music recording, and wherein said storage facility further comprises a personal account associated with at least one of said cellular telephone and a user of said cellular telephone, wherein at least a title of said selected and retrieved music recording is stored in said personal account.

2. The system as set forth in claim **1**, in combination with a vehicle, wherein said wireless cellular telephone is installed in said vehicle.

3. The system as set forth in claim **1**, wherein a selected music recording is wirelessly transmitted from said remote storage facility in data packets.

4. The system as set forth in claim **3**, wherein said data packets are transmitted via a third generation network.

5. The system as set forth in claim **1**, wherein said retrieved music recording is encoded in mp3 format.

6. The system as set forth in claim **1**, wherein said at least one music recording stored in said memory can be played without the need to establish and maintain a communications link with said remote storage facility.

7. The system as set forth in claim **1**, wherein said system further makes said selected and retrieved music recording available for download to a personal computer associated with a user of said cellular telephone.

8. The system as set forth in claim **1**, wherein said selected and retrieved music recording is purchased from said remote storage facility.

9. A device comprising:

a processor;

an input for selecting a music recording;

a receiver for wirelessly receiving the selected music recording after it is selected with said input and for wirelessly receiving in conjunction with said music recording at least one of a name of an artist corresponding to said music recording and a title corresponding to said music recording;

a memory for storing the received music recording in an encoded format;

a buffer through which said encoded music recording is streamed;

a player for playing said encoded music recording as it is streamed through said buffer; a display for displaying, in conjunction with play of said music recording, at least one of said name of the artist corresponding to said music recording and said title corresponding to said music recording; and

a speaker for outputting said encoded music recording as it is played, wherein said device is a wireless communications device comprising a mobile cellular telephone having voice communications capability, wherein at least one of said cellular telephone and a user thereof is associated with a personal account, wherein said personal account is for storing at least information that identifies said music recording.

10. The device as set forth in claim **9**, wherein said music recording is encoded in mp3 format.

11. The device as set forth in claim **9**, wherein said information that identifies said music recording comprises at least a title of said music recording.

12. The device as set forth in claim **9**, wherein said cellular telephone further comprises a microphone as part of said voice communications capability of said cellular telephone.

13. A device for playing encoded music, said device comprising:

a processor;

an input for selecting an encoded music recording;

a receiver for wirelessly receiving the selected music recording after it is selected with said input and for wirelessly receiving in conjunction with said encoded music recording at least one of a name of an artist corresponding to said encoded music recording and a title of said encoded music recording;

a memory unit for storing said received encoded music recording;

a buffer through which said encoded music recording is streamed;

a player for playing said encoded music recording, as it is streamed through said buffer; and

a display for displaying, in conjunction with play of said encoded music recording, at least one of said name of an artist corresponding to said encoded music recording and said title of said encoded music recording, wherein said device is a mobile wireless cellular telephone having voice communications capability and function-

ality to wirelessly access a personal account, wherein said personal account is associated with at least one of said mobile cellular telephone and a user thereof and is for storing at least information that identifies said music recording.

14. The device as set forth in claim **13**, wherein said encoded music recording is stored in mp3 format.

15. The device as set forth in claim **13**, wherein said information that identifies said music recording comprises at least a title of said music recording.

16. The device as set forth in claim **13**, wherein said cellular telephone further comprises a microphone as part of said voice communications capability of said cellular telephone.

17. A device comprising:

a processor;

an input for selecting a music recording;

a receiver for wirelessly receiving the selected music recording after it is selected with said input and for wirelessly receiving in conjunction with said music recording at least one of the name of an artist corresponding to the selected music recording and a title of the selected music recording;

a memory for storing the received music recording;

a player for playing said music recording a display for displaying, in conjunction with play of said music recording, at least one of said name of an artist corresponding to said music recording and said title of said music recording; and

a speaker for outputting said music recording as it is played, wherein said device is a mobile cellular telephone having voice communications capability and functionality to wirelessly access a personal account, wherein said personal account is associated with at least one of said mobile cellular telephone and a user thereof and is for storing at least information that identifies said music recording.

18. The device as set forth in claim **17**, wherein said music recording is a digital music recording.

19. The device as set forth in claim **18**, wherein said music recording is encoded in an mpeg format.

20. The device as set forth in claim **19**, wherein said music recording is encoded in mp3 format.

21. The device as set forth in claim **17**, wherein said information that identifies said music recording comprises at least a title of said music recording.

22. The device as set forth in claim **17**, wherein said memory has a plurality of music recordings stored therein.

23. The device as set forth in claim **22**, wherein said input is further used for selecting for playback a one of said plurality of music recordings stored in said memory.

24. The device as set forth in claim **17**, wherein said memory is internally located in said device.

25. The device as set forth in claim **17**, wherein said memory is a removable memory media that is removable from said device.

26. The device as set forth in claim **17**, wherein said music recording was downloaded to said device via a wireless cellular communications link.

27. The device as set forth in claim **26**, wherein said music recording was downloaded from a remote server to said device.

28. The device as set forth in claim **27**, wherein said device is part of a system including said personal account and wherein said music recording was downloaded via said personal account, located at said remote server, associated with said device or a user of said device.

29. The device as set forth in claim **17**, wherein said cellular telephone further comprises a microphone as part of said voice communications capability of said cellular telephone.

30. The device as set forth in claim **17**, wherein said speaker comprises a speaker that is internal to said cellular telephone.

31. The device as set forth in claim **17**, wherein said speaker comprises headphones or an earplug.

32. A device comprising:

a processor;

an input for selecting a music recording;

a receiver for wirelessly receiving a selected music recording after it is selected with said input and for wirelessly receiving in conjunction with said music recording at least one of a name of an artist corresponding to a selected music recording and a title of a selected music recording;

a memory for storing a selected and received music recording in an encoded format;

a decoder capable of decoding the encoded format a display for displaying, in conjunction with decoding of a music recording that is stored in the memory, at least one of the name of an artist corresponding to the music recording and the title of the music recording; and

a speaker capable of audibly outputting a received music recording decoded by the decoder, wherein said device is a mobile cellular telephone having voice communications capability and functionality to wirelessly access a personal account, wherein said personal account is associated with at least one of said mobile cellular telephone and a user thereof and is for storing at least information that identifies the music recording that is selected with said cellular telephone.

33. The device as set forth in claim **32**, wherein said cellular telephone further comprises a microphone as part of said voice communications capability of said cellular telephone.

34. The device as set forth in claim **32**, wherein said information that identifies the music recording comprises at least a title of said music recording.

35. A device comprising:

a processor;

a memory;

a receiver for receiving wireless communication signals;

a digitally encoded music recording stored in said memory, wherein said music recording was selected with said device and then wirelessly received by said receiver;

a player for playing said music recording a display, wherein at least one of a title of said music recording and the name of an artist corresponding with said music recording was wirelessly received in conjunction with said music recording and is displayed on said display in conjunction with playback of said music recording by said player; and

a speaker for outputting said music recording, wherein said device is a portable, cellular telephone sized for handheld use, wherein at least one of said cellular telephone and a user thereof is associated with a personal account in which is stored at least information that identifies said digitally encoded music recording.

36. The device as set forth in claim **35**, wherein said at least one music recording stored in said memory can be

played without the need to establish and maintain a communications link with a remote source from which said music recording was received.

37. The device as set forth in claim **35**, wherein said music recording is a complete music recording.

38. The device as set forth in claim **35**, wherein said information that identifies said digitally encoded music recording comprises at least a title of said music recording.

39. The device as set forth in claim **35**, wherein said memory has a plurality of music recordings stored therein.

40. The device as set forth in claim **39**, further comprising an input for selecting a one of said music recordings for playback.

41. The device as set forth in claim **35**, wherein said memory is internally located in said device.

42. The device as set forth in claim **35**, wherein said memory is a removable memory media that is removable from said device.

43. The device as set forth in claim **35**, wherein said music recording was received via said personal account associated with said device or a user of said device.

44. The device as set forth in claim **35**, wherein said speaker comprises a speaker that is internal to said device.

45. The device as set forth in claim **35**, wherein said speaker comprises headphones or an earplug.

46. The device as set forth in claim **35**, wherein said cellular telephone further comprises a microphone for voice communications.

* * * * *

APPENDIX
TAB 3

US007778636B2

(12) **United States Patent**
Rolf

(10) **Patent No.: US 7,778,636 B2**
(45) **Date of Patent: Aug. 17, 2010**

(54) **MOBILE ADVERTISING SYSTEMS AND METHODS**

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H04W 4/00 (2009.01)

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(58) **Field of Classification Search** 455/426.1, 455/456.1, 456.3, 456.6, 457, 566
See application file for complete search history.

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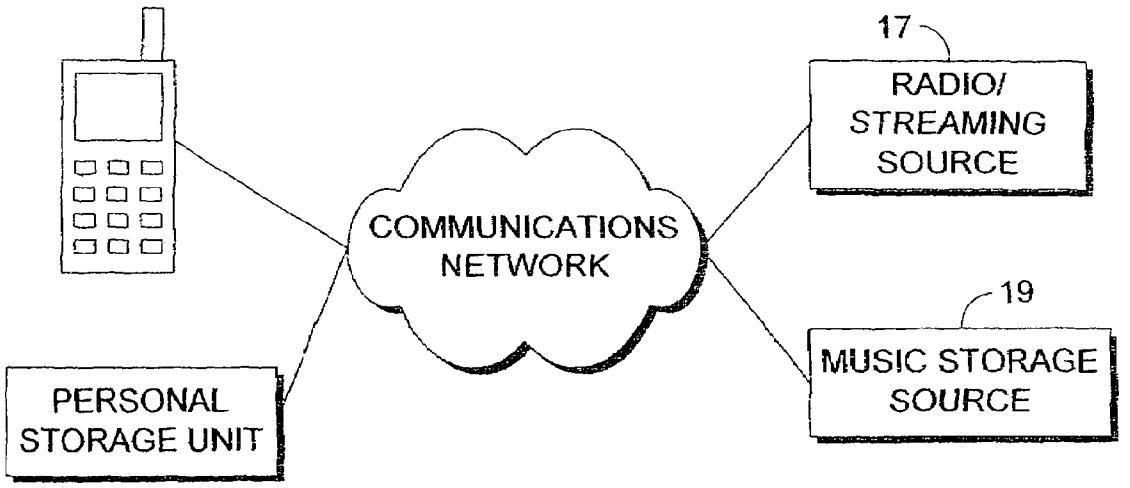
(57) **ABSTRACT**

A system and method for receiving an electronic response to an advertisement that is wirelessly transmitted to a mobile wireless communications device involve routing a connection from the wireless communications device to a source based at least in part on a location of the mobile wireless communications device. A wireless communications device has an input and a display and, in response to an input indicating interest in that which is advertised, transmits its location for use in routing a connection with a source associated with the advertisement.

23 Claims, 4 Drawing Sheets



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U.S. Appl. No. 11/437,130; Notice of Allowance; Dtd Nov. 28, 2007.
U.S. Appl. No. 11/437,128; Office Action; Dtd Dec. 31, 2007.
U.S. Appl. No. 11/437,140; Office Action; Dtd Aug. 24, 2007.
U.S. Appl. No. 11/437,137; Office Action; Dtd Jan. 10, 2007.
U.S. Appl. No. 11/437,137; Notice of Allowance; Dtd Aug. 10, 2007.
U.S. Appl. No. 11/437,129; Office Action; Dtd Jan. 9, 2008.
U.S. Appl. No. 11/437,137; Office Action; Dtd Jul. 26, 2006.
U.S. Appl. No. 11/437,134; Office Action; Dtd Feb. 6, 2008.
U.S. Appl. No. 11/437,133; Office Action; Dtd Jan. 28, 2008.
U.S. Appl. No. 11/437,132; Office Action; Dtd Feb. 6, 2008.
U.S. Appl. No. 11/437,131; Office Action; Dtd Jan. 28, 2008.
U.S. Appl. No. 11/437,121; Office Action; Dtd Jan. 28, 2008.
U.S. Appl. No. 11/437,122; Office Action; Dtd Jan. 28, 2008.
U.S. Appl. No. 11/437,127; Office Action; Dtd Feb. 22, 2008.

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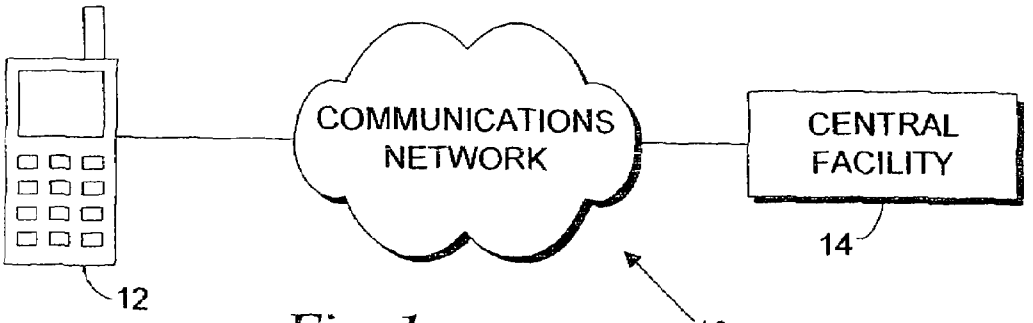

Fig. 1.

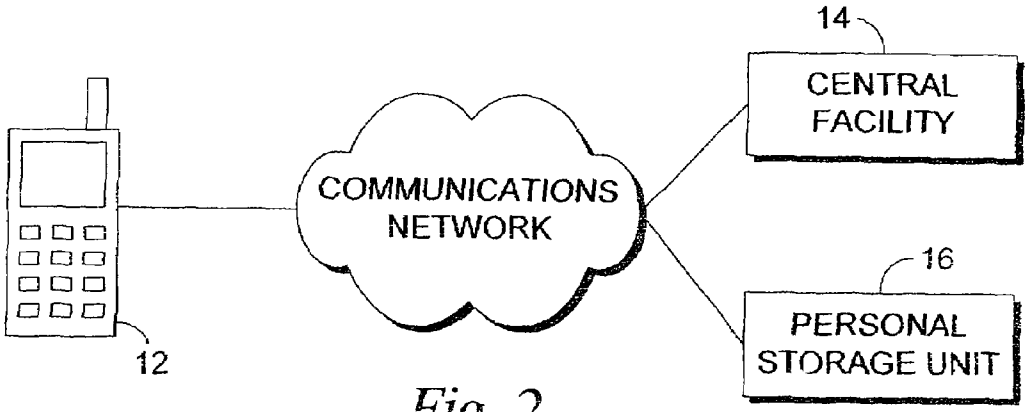

Fig. 2.

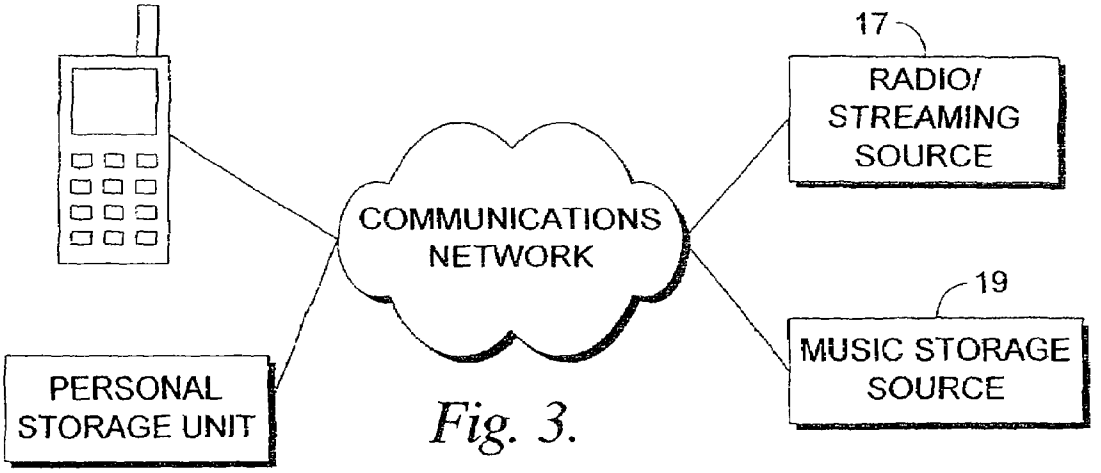

Fig. 3.

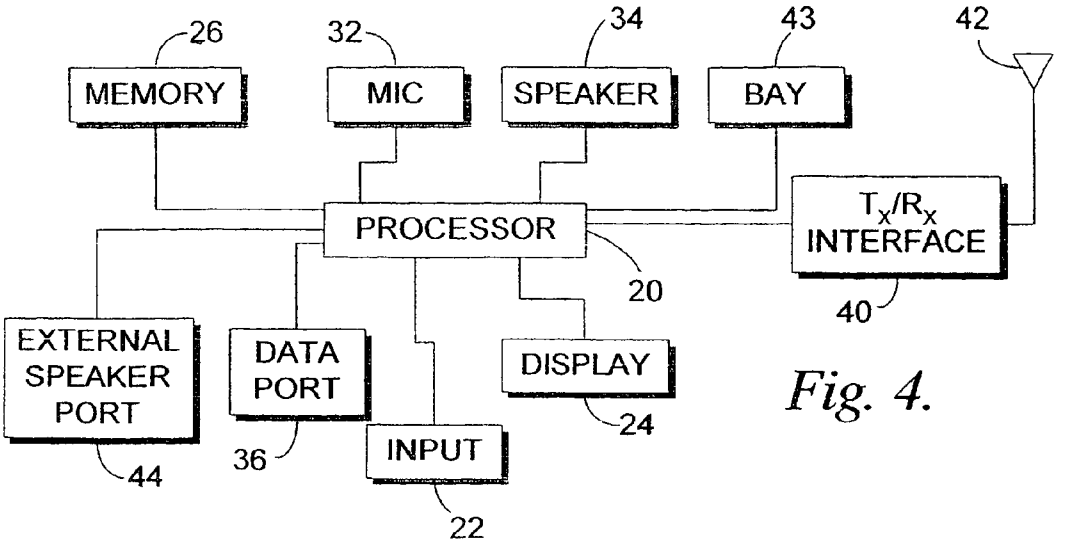

Fig. 4.

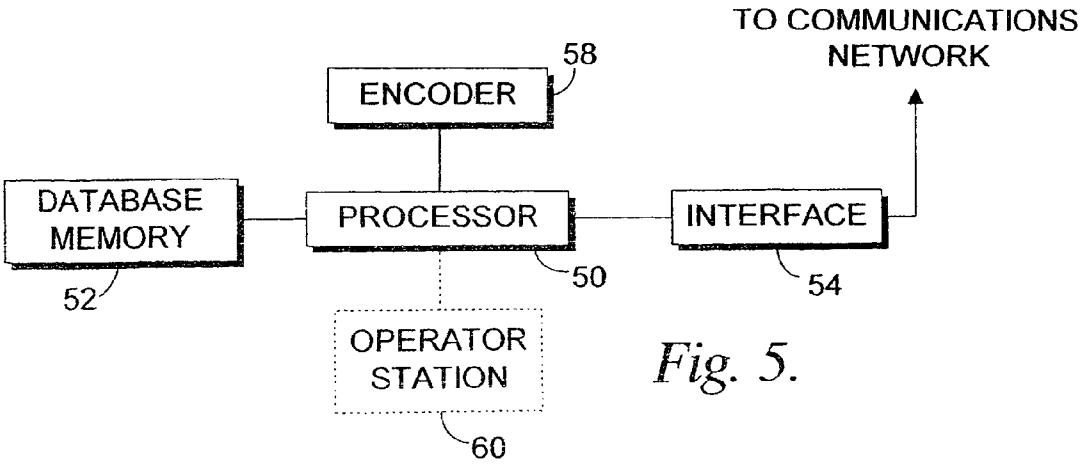

Fig. 5.

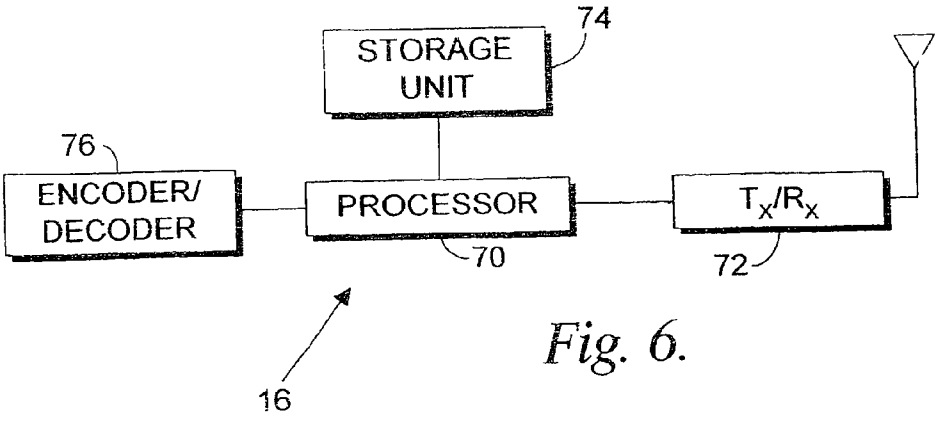

Fig. 6.

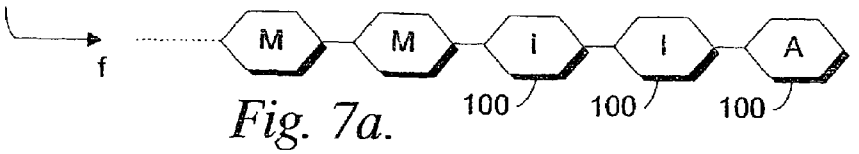

Fig. 7a.

Fig. 7b.

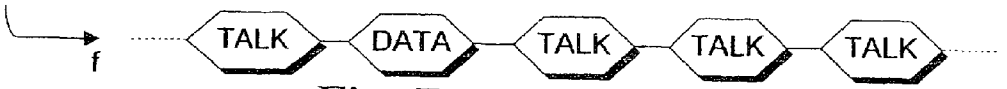

Fig. 7c.

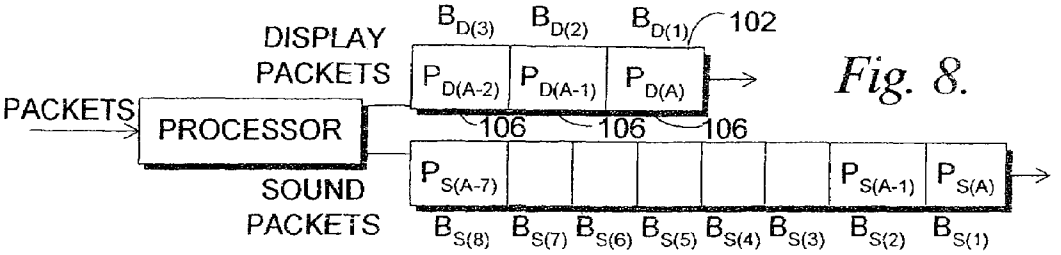

Fig. 8.

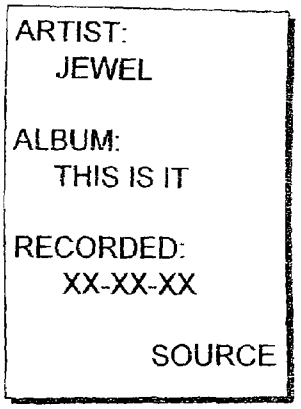

Fig. 9a.

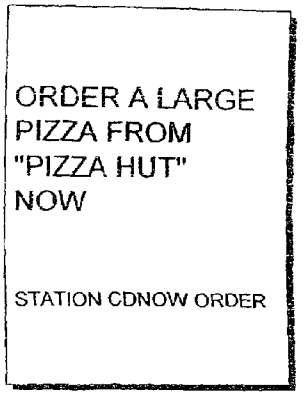

Fig. 9b.

Fig. 9c.

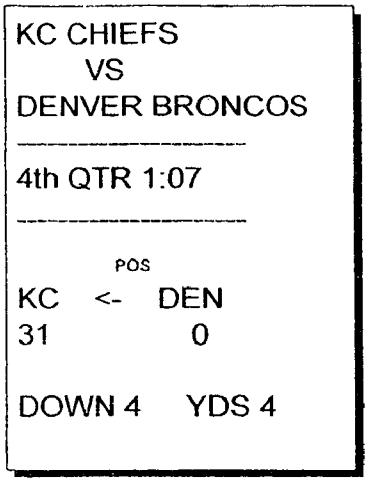

Fig. 9d.

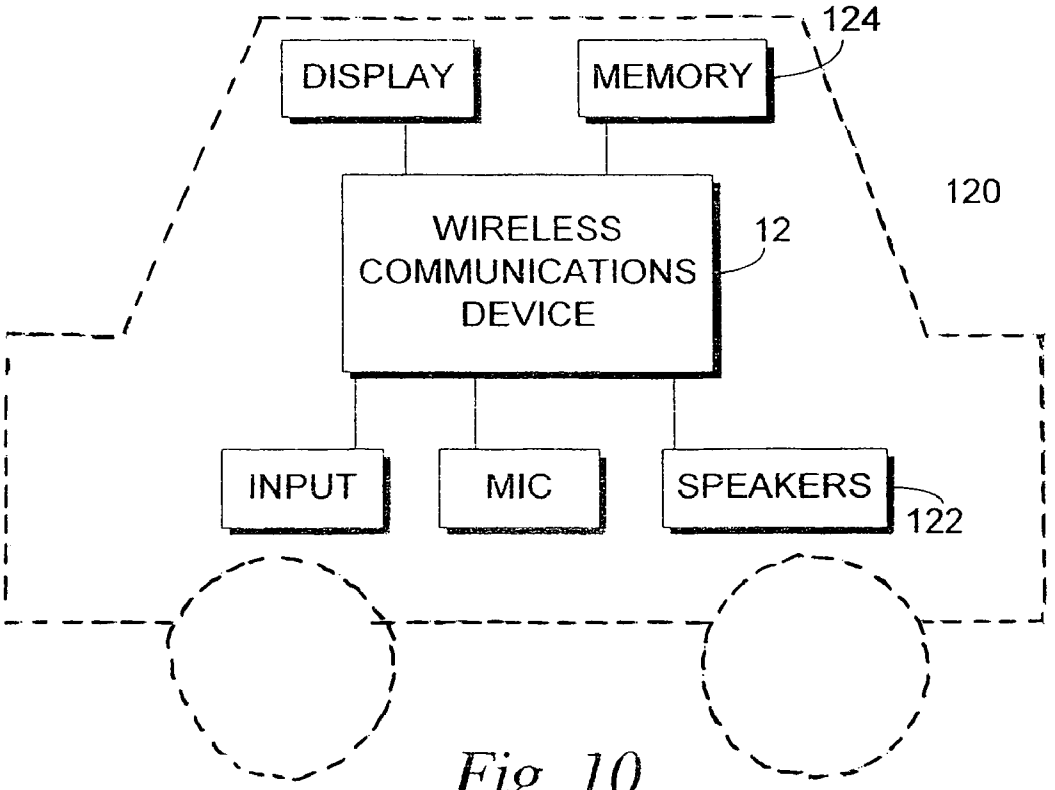

Fig. 10.

MOBILE ADVERTISING SYSTEMS AND METHODS

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a continuation of now abandoned U.S. patent application Ser. No. 11/437,123, filed May 18, 2006, entitled System and Method for Transmitting Digital Media and an Advertisement or Electronic Identifier, which is a continuation of Ser. No. 09/721,120 Nov. 22, 2000, now U.S. Pat. No. 7,065,342(B1), issued Jun. 20, 2006, entitled System and Mobile Cellular Telephone Device for Playing Recorded Music ("the '342 Patent"), which claims the benefit of priority from U.S. Provisional Application No. 60/167,179, filed Nov. 23, 1999, entitled System, Method and Device for Playing Recorded Music on a Wireless Communications Device. The following pending patent applications are related to the present application and claim priority, either directly or indirectly, to the '342 patent: U.S. patent application Ser. No. 11/437,131, filed May 18, 2006, and entitled System for Storing and Transmitting Digital Media; and U.S. patent application Ser. No. 11/437,121, filed May 18, 2006, and entitled System and Method for Providing Digital Video to a Wireless Communications Device. Additionally, the following abandoned applications, each of which names Devon A. Rolf as the sole inventor and was filed on May 18, 2006 (except for U.S. patent application Ser. No. 11/451,834, which was filed on. Jun. 13, 2006), are related to the present application and claim priority, either directly or indirectly, to the '342 patent:

App. No. Title

Ser. No. 11/437,122 System and Method for Selling a Streaming Digital Media Recording

Ser. No. 11/437,124 Wireless Communications Device for Receiving and Displaying a Sports Data

Ser. No. 11/437,127 System and Method for Searching for Digital Media

Ser. No. 11/437,128 System Method and Device for Downloading Digital Media

Ser. No. 11/437,129 Wireless Communications Device for Playing Digital Video Recordings

Ser. No. 11/437,130 Satellite Radio Receiver and Digital Media Player

Ser. No. 11/437,132 Method for Storing and Transmitting Digital Media

Ser. No. 11/437,133 Method of Playing Digital Media on a Wireless Communications Device

Ser. No. 11/437,134 Wireless Communications Device for Playing Digital Media

Ser. No. 11/437,135 Wireless Communications Device for Playing Digital Media and Displaying Information

Ser. No. 11/437,136 Wireless Communications Device for Purchasing Digital Media Played at the Device

Ser. No. 11/437,137 Entertainment Center for Receiving and Displaying Digital Media

Ser. No. 11/437,138 System and Method for Transmitting Sports Information to a Wireless Device

Ser. No. 11/437,139 Wireless Communications Device and Method for Downloading Software

Ser. No. 11/437,140 System and Method for Downloading Software to a Wireless Communications Device

Ser. No. 11/451,834 System and Method for Managing Digital Media Recordings

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention is generally directed to a system and method for wirelessly transmitting encoded music, via a wireless communications link, to a portable or mobile communications device which includes a player for playing the music or audio.

SUMMARY OF THE INVENTION

In one embodiment, the present invention is a system for transmitting encoded music from a remote, central facility to a wireless communications device, such as a cellular telephone or personal digital assistant. In particular, a user of the cellular telephone (for example) may use the telephone to establish a wireless communications link with the remote, central facility, and then wirelessly download one or more selected music recordings for storage in a memory of the cellular telephone. In particular, the selected music recording(s) is/are transmitted via a wireless data communications link to the cellular telephone. Preferably, the music recordings are encoded and transmitted in packets, and may particularly be encoded by a compression algorithm into an encoded (such as MP3 or other) format.

Using an input of the cellular telephone, a user may select one or more recordings for transmission to the cellular telephone. The selected music recordings, upon receipt by the cellular telephone, are stored in a memory. In one embodiment, the memory is an internal memory.

Alternatively, the memory may be a separate cartridge or memory stick (such as a flash memory cartridge) for movable installation in a bay on the telephone. A player within the cellular telephone may then be initiated to play the music recordings, for output on a speaker. In particular, the speaker may include earphones or earplugs connected to a port on the cellular telephone. Alternatively, the player may output the music through an internal speaker of the cellular telephone.

In an alternate embodiment, the wireless communications device is utilized in combination with a vehicle, and a player, a memory for storing the music, and at least one speaker, are located within the vehicle, such that selected recordings may be retrieved from the remote central facility, and played in the vehicle. In this embodiment, the memory may include one or more burnable CDs, and will typically have far more memory storage capacity than the memory of the cellular telephone, which is utilized in the previous embodiment.

In either embodiment, the wireless communications device preferably includes a buffer for streaming data indicative of the music. Additionally, the wireless communications device is preferably a cellular communications device and, in particular, is a cellular voice communications device, such as a cellular telephone.

In accordance with yet an additional aspect of the present invention, the wireless communications device of the present invention (whether it be handheld or installed within a vehicle) retrieves recorded music from a personal storage unit of the user. For example, a user may have a CD tower, flash memory unit, etc. in his or her home or apartment, or may have a personal storage account at a central facility. A plurality of recordings may be stored in the personal storage unit. The personal storage unit is accessible via a wireless communications link from the wireless communications device, to thereby enable the retrieval of selected music from the user's own storage facility. Additionally, such a system permits the

user to easily mix recordings from a number of different recordings from his or her own storage unit.

Thus, the system of this embodiment of the present invention utilizes the central facility having music recordings stored therein, a personal storage facility located remotely from the central facility, such as in the residence of a user, and the wireless communications device. In this embodiment, when a user selects one or more recordings from the central facility, rather than the recordings being transmitted to the wireless communications unit directly via a wireless communications link, they are rather transmitted to the personal storage unit of the user. Once stored in the personal storage unit, the user can then access his or her personal storage facility via a wireless communications link for retrieving, via the wireless communications link, one or more selected recordings. In accordance with this embodiment of the present invention, the encoded music transmitted to the personal storage unit may be stored in a flash memory or, alternatively, may be stored on burnable CDs or any suitable storage medium. In this regard, the encoded music transmitted to the personal storage unit of the user may be decoded, for storage in a decoded manner such that it may be played by more traditional music players or, alternatively, may be stored directly in its encoded format. When stored in a decoded format, music recording is again encoded at the personal storage unit upon retrieval. The personal storage unit may be located at the central location or at a remote site or may comprise a personal computer or an entertainment center, including such components as a display screen (e.g., TV or information TV), stereo, speakers, etc, or as stated, an account at a storage location. It should be understood that wirelessly retrieving a recording from a personal storage unit that is located in physical proximity to the user (e.g., an entertainment center, TV, personal computer, etc.) may be accomplished either by connection with a wide area communications network, or alternatively, by a local area wireless connection or protocol, such as Bluetooth and other such technologies.

It should be understood that the transmittal of the recording to the personal storage account may embody transmitting only a portion of the recording, such as the title and memory (e.g., address) storage location of the recording, such that the personal storage account serves as a directory or index for retrieval of acquired or accumulated recordings. In this regard, the recordings may be stored in a contained database, or may be located at multiple storage sites dispersed within a network. In either case, each recording will have a programmed address to which the personal storage account will point for a corresponding recording. Upon access to the personal storage account by the account holder (via a communications device), and after entry of any required passwords, the user may select one or more recordings for streaming or download, whereupon the recording(s) will be retrieved. Temporary copying/cloning techniques may be used to insure at least substantially simultaneous accessibility to the recording by a large number of users.

In accordance with an additional aspect of the present invention, information pertaining to the music recording, such as the artist, title of the recording, an album from which the recording came, the date of the recording, etc. is also transmitted with the recorded music, such that the informational data is displayed on a display of, or associated with, the wireless communications device when the particular recording is being played. Additionally, it is an aspect of the present invention that an identifier, such as a server address, associated with the remote central facility is encoded along with the transmitted data, such that a selected input on (or associated with) the wireless communications device may be pressed for automatically reconnecting with the central facility or personal storage unit.

In preferred embodiments of the present invention, the wireless communications link established between the wireless communications device and the central facility is a cellular communications link and, more particularly, is an Internet link. In other words, the encoded music and/or informational data is preferably transmitted via a packet switch network, and particularly is preferably transmitted at transmission speeds greater than 50 KHz, such as by a next- or third-generation wireless communications network.

In accordance with yet an additional object of the present invention, the music recordings transmitted to the wireless communications device from the central storage facility, or from the personal storage unit of the user, may be transmitted in a real, or substantially real, time basis. In other words, rather than downloading one or more recordings to a memory within the wireless communications device, encoded music may be streamed directly from its source, for input into a buffer within the communications device, and for play at the communications device, without being otherwise stored in the device. In other words, the music is played as it is streamed from the central storage facility or personal storage unit of the user.

In accordance with yet an additional aspect of the present invention, the wireless communications device receives a sound stream from a source, where the sound stream is in a real time broadcast. For example, a radio broadcast may be encoded and transmitted via a wireless communications link to the wireless communications device. The broadcast may, for example, be a broadcast of music or, preferably, is a traditional radio-type broadcast having transmission of recorded music, advertisements, and voice from one or more disc jockeys. Accordingly, the source (e.g., radio station) may have a plurality of inputs for inputting stored music, stored advertisements, or real time voice from a disc jockey. The input information is encoded (if not already encoded) and transmitted to the wireless communications device via an established communications link. In particular, the data stream is a stream of data packets which are streamed through a buffer of the wireless communications device for decoding and play.

In accordance with the particular aspect of this embodiment of the invention, informational data associated with music or advertising being transmitted is displayed on the display. More particularly, information transmitted to the wireless communications device may be associated with a particular input on the device, such that a communications link corresponding to the displayed information may be made. For example, when a music recording is being played at the wireless communications device, data indicative of that recording may be displayed on the display, and, additionally, a selected key on the wireless communications device may be pressed to transmit a signal to the source of the stream that the user of wireless communications device wishes to purchase the music recording. Alternatively, the signal may be transmitted to a remote music storage facility for effecting a purchase of the recording or its associated album. In this regard, the purchase can be conducted in an electronic input mode or, alternatively, a link may be established for transmitting voice communications to and from the source or music storage facility (as the case may be) at which the sound recording or its associated album is to be purchased. In making the purchase, the user may select whether to have the sound recording or its associated album downloaded to the wireless communications device (if memory space permits), or to a remote

personal storage unit or account of the user, or to have the sound recording or album stored on a storage medium and transmitted to an address of the user by mail or courier. In accordance with an additional aspect of the invention, payment for the sound recording or album may be made at the time or, alternatively, a monetary amount corresponding to the purchase may be billed to a periodic invoice associated with the wireless communications device (such as a telephone bill).

As another example of utilization of the present invention, information corresponding to an advertiser may be displayed on a display screen during an advertisement, and an identifier (such as an electronic address or telephone number) may be associated with a particular key on the communications device, such that activation of the key establishes a voice and/or data communications link with the advertiser, such as for the purpose of making a purchase of goods or services advertised. Additionally, and preferably, an identifier (such as an address or telephone number) associated with the radio station or streaming source is allocated to a particular key, such that the user may contact the source and transmit information thereto, or have a voice conversation with the source. This is particular advantageous for responding to call-in shows, trivia contests, games, etc. sponsored by the source/radio station.

As another example of the transmission of sound and information, the broadcast from the source may be a real-time broadcast of an athletic event, broadcast by one or more announcers The voice signals of the announcer is encoded and transmitted to the wireless communications device **12**. Additionally, information corresponding to the athletic event being broadcast may be transmitted and displayed on the display. For example, the contestants, the scorer of the contest, the time remaining, and other circumstances relating to the game may be transmitted and stored. Preferably, this informational data is periodically transmitted, so as to update the display.

BRIEF DESCRIPTION OF THE DRAWINGS

The objects and features of the invention noted above are explained in more detail with reference to the drawings, in which like reference numerals denote like elements, and in which:

FIG. **1** is an illustration of a system of a first embodiment the present invention;

FIG. **2** is an illustration of a system of a second embodiment of the present invention;

FIG. **3** is an illustration of a system of a third embodiment of the present invention;

FIG. **4** is a block diagram of a conventional wireless communications device utilized in accordance with the principles of the present invention;

FIG. **5** is a block diagram of a central facility of the present invention;

FIG. **6** is a block diagram of a personal music storage unit of the present invention;

FIGS. **7***a*-**7***c* are exemplary illustrations of how data is transmitted in packets;

FIG. **8** is an illustration of streaming data through one or more buses in accordance with the invention;

FIGS. **9***a*-**9***d* illustrate screen displays in accordance with the present invention; and

FIG. **10** is an illustration of a vehicular communications system for playing music in accordance with the principles of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

With reference initially to FIG. **1**, a system of the present invention for playing encoded music on a wireless communications device is denoted generally by reference numeral **10**. In particular, system **10** has a wireless communications device **12**, such as a cellular telephone. Preferably, wireless communications device **12** is a digital, cellular communications device, and is portable and handheld. In this regard, while one preferred communications device is a telephone, it should be understood that the wireless communications device may be types of devices, such as a palm or handheld computing device having wireless communications capabilities.

A communications link may be established between wireless communications device **12** and a remote storage facility, denoted by reference numeral **14**. The remote storage facility may, for example, be at an address on the world wide web, and includes a data base having a plurality of music recordings therein. Preferably, the music recordings are categorized by a plurality of selectable fields, such as "title", "artist", "album or CD type", "recording label", etc. Additionally, the music recordings are preferably encoded in an encoded format, such as MP3 (Mpeg-1 Audio layer 3). It will be understood that the music recordings may be encoded in other formats or, alternatively, may not be encoded at all. In this latter instance, remote storage facility **14** also includes an encoder (not shown in FIG. **1**) for encoding a recording when it is selected to enable it to be efficiently transmitted via a communications network **18**.

As will become apparent from the detailed discussion below, the wireless communications device **12** may be utilized to establish a communications link with the remote storage facility **14**. Then, using a keypad and input on the wireless communications device, or by voice commands, one or more selected music recordings may be retrieved from the storage facility **14**, for transmission, via wireless communications link, to the device **12**. As will become apparent from the detailed discussion below, the retrieved music recording or recordings may be stored in a memory within the communications device **12**, on a memory cartridge or stick insertable into the device **12** or, alternatively, may simply be strung through a buffer of the device **12** for playback, and no stored at the device **12**.

With additional reference now to FIG. **2**, an alternate embodiment of the present invention is illustrated and described.

In the embodiment of the present invention illustrated in FIG. **2**, a wireless communications device **12** communicates with a central facility **14** for retrieval of one or more stored music recordings. Also in this embodiment, in addition to the wireless communications device **12**, and central facility **14**, the system **10** of the present invention further includes a personal storage unit **16**. However, in this embodiment, the retrieved recordings (after being encoded if necessary) are not transmitted directly to the wireless communications device **12**, but are transmitted via a personal storage unit or account **16** of the user. It should be understood that the communications link between the central facility **14** and personal storage unit **16** may be either hard wired or wireless. In this regard, the personal storage unit **16** may be an account located at the facility **14**, or remotely therefrom. The storage unit for storing music recording may, for example, be in a home or residence of the user of wireless communications device **12** As will be discussed in greater detail below, in this embodiment, one or more selected music recordings are transmitted to the selected, personal storage unit **16** of the user. Subsequently,

the user of wireless communications device **12** establishes a wireless communications link with the personal storage unit **16** for retrieving selected music stored therein.

In accordance with yet an additional aspect of the invention, a music recording desired to be played on wireless communications device **12** need not be fully stored within the device **12**. In this regard, for example, a music recording stored in central facility **14** or personal storage unit **16** may be streamed to the wireless device **12** via an established communications link. In such an instance, data packets are streamed through a buffer for play by a player each of which are in a memory **26** (see FIG. **4**), such that, as one data packet is played within the buffer, and then exits the buffer, an additional data packet is streamed into the buffer.

With reference to FIG. **3**, and in accordance with an alternate embodiment of the invention, a source of streaming audio **17**, such as radio station broadcasting signals, may transmit an audio stream to device **12**. Wireless communications device **12** may be utilized to establish a link with the radio station source **17**, for receiving an encoded stream of data indicative of the transmission of the radio station. In such an embodiment, the encoded stream of data packets are passed through a buffer for play by a player (see FIG. **4**), thereby making wireless communications device **12** a digital radio for receiving streams of encoded audio data.

Additionally, and in accordance with a particular aspect of the present invention, in addition to the audio data transmitted to the communications device **12**, informational data is also sent for display on display **24**. As will be appreciated, in view of the foregoing discussion, that informational data may be stored in packets and, preferably, is stored in packets that are transmitted at the beginning of a particular recording, or packets that are periodically spaced within a set of other packets. Thus, for example, when a particular music recording is played by the radio station, and output at the wireless communications device **12**, data indicative of the music recording is displayed on display **24**. In accordance with a particular aspect of the present invention, at least a portion of that informational data is associated with a selected input on communications device **12**, such that upon activation of the input, the user of communications device **12** may order (for purchase) an authorized copy of the recording, or the album upon which the recording is placed. In this regard, upon activation of the key associated with the informational data, in one embodiment, while pressing the key associated with the selected information, data indicating that the user desires to make a purchase is transmitted to the station/source **17** or other facility. It should also be understood that the informational data may be retained at the server which is sourcing the recording, such that activation of a selected input causes a signal to be transmitted to the server, the receipt of which is matched with the information pertaining to the recording being transmitted. In any case, the purchase can be effected via the station/source **17** or other site, such as indicated by music storage source **19**, either through appropriate inputs on the communications device **12**, or by establishment of a voice communications link with the central facility **14**.

In addition to the user having a choice of whether to buy the single being played, or the entire album on which the single is located, the user also has the opportunity to select the manner in which the purchased recording or album will be distributed to the user. For example, the purchased recording or album may be downloaded to the wireless communications device **12** (if memory space suffices) or, alternatively, may be downloaded to the user's personal storage unit **16**.

Alternatively, the user can select to have a storage medium upon which the music is recorded (such as a CD, for example) mailed to a selected address of the user.

Accordingly, the present invention provides a very unique feature for the distribution and purchasing of music recordings, by allowing an individual to make a purchase of a recording and/or its associated album upon hearing the recording.

In accordance with yet an additional aspect of the present invention, as the radio station transmits audio advertising content, informational data indicative of the advertiser is displayed on display screen **24**. In particular, data indicative of a URL or telephone number is preferably associated with a particular key on the communications device **12**, such that by pressing the associated key, a communications link (either data or voice) is established with the source of the advertising. Thus, for example, during an ad for "Pizza Hut", a particular button may be pressed to establish a communications link with a telephone number or address associated with Pizza Hut, for the purpose of ordering a pizza. In this embodiment, the communications device **12** preferably has an additional buffer for buffering the informational display data. Moreover, in a preferred embodiment, data indicative of a plurality of most recent advertisements is preferably stored in the buffer, and associated with a corresponding number of inputs or a menu driven system, such that, sources associated with the most recent advertisements may be readily contacted.

It is contemplated within the scope of the present invention that a server for accessing content transmitted by the radio station may be a satellite server as well. In other words, the communications link may or may not include a satellite communications link.

With additional reference to FIG. **4**, wireless communications device **12** has a processor **20**. Connected to processor **20** are an input (such as a keypad **22**), a display **24**, a memory **26**, a microphone **32**, a speaker **34**, and a port **36**. Additionally, a DTMF encoder/decoder (or just an encoder, if desired) **38**, and a transceiver **40**, and antenna **42** are connected as shown. Additionally, wireless communications device may have a bay **43** for receiving a memory cartridge or stick, such as a flash memory unit. Furthermore, device **12** has an external speaker port (e.g., for ear plugs or headphones) **44**. The construction of conventional wireless communications devices, such as cellular phones, is well known. However, in accordance with the present invention, a buffer and a player for playing encoded music through an internal speaker, or via headphones or earplugs connected to a speaker port, such as port **44** arc provided. In accordance with the invention, the player is a set of encoded instructions, stored in a memory **26**, for decoding and playing recorded, encoded music as it is streamed through a buffer. Additionally, device **12** may have a bag or port for receiving a memory cartridge or stick, such that recordings may be stored on a removable memory device, and such that recordings played by the player are retrieved from the cartridge or stick.

In this regard, the wireless communications device **12** may be provided from a manufacturer with a player already installed in the device **12**. Alternatively, the player may be loaded into the communications device **12** by an end user of the device. In this regard, and in accordance with an aspect of the invention, a user of communications device **12** may establish a communications link with a central facility, such as storage facility **14**, and utilizing inputs on the device, such as a keypad, or a microphone (where the inputs are by voice), make appropriate selections for retrieving an encoded player for storage in the communications device **12** in this regard, when such a selection is made, the set of instructions com-

prising the player are themselves preferably encoded (if they are not already encoded), and transmitted via the wireless communications link to communications device **12**, for storage in memory Accordingly, it is a particular aspect of the invention to wirelessly load a set of instructions, and particularly a music player for decoding encoded, recorded music, into a wireless communications device, such as a cellular telephone or communications equipped palm computing device, such as a portable digital assistant. As part of the invention, data indicative of the type of operating system installed within communications device **10**, and/or memory storage limitations, may be transmitted to central facility **14** for use in selecting a player from a plurality of players.

In accordance with another aspect of the invention, any charges associated with downloading a player (which would preferably be free) and/or loading recordings may be charged directly to a periodic invoice associated with the wireless communications device, and particularly associated with other services (such as telephone services) associated with the wireless communications device **12**. Alternatively, and in accordance with an aspect of the invention, subscriptions may be established such that a user of communications device **12** may have unlimited or a selected amount of access to the music stored at remote facility **14** so long as a periodic subscription fee is paid. For example, for a selected periodic subscription fee, a selected number of recordings (or albums) may be retrieved Beyond the selected number within the period, additional fees would be incurred. In this regard, and in accordance with the particular aspect of the invention, the subscription fee is invoiced together with other charges associated with services for usage of the wireless communications device **12**. Alternatively, purchases may be accounted for via electronic transmission of an account number of the user, or in more traditional manners.

With reference initially to FIG. **5**, a block diagram of the central facility **14** is illustrated and described.

In particular, a central facility **14** has a processor **50** Connected to the processor **50** are a data base memory **52** and a interface **54** (such as a transceiver or modem) for transmitting and receiving communications signals. In addition, the central facility **14** may also have an encoder **58** and an operator station **60**. The encoder **58** is a set of processing instructions stored in a memory for encoding music recordings stored within data base memory **52**. In particular, when wireless communications device **12** accesses the central facility **14** via the communications network for purpose of retrieving one or more selected recordings, the encoder **58** may be utilized to encode the music, according to any preferred encryption and/or compression algorithm (such as mp3, liquid audio, etc.), for transmission of the encoded recordings) to the wireless communications device **12** Alternatively, the music recording stored within data base memory **52** may be stored in an encoded/compressed manner, such that the encoder **58** is not necessary. While the operator station **60** is not necessary, it may be provided for allowing the user of wireless communications device **12** to have a voice conversation with an operator employed at the operator station **60**. As will be appreciated, in the absence of an operator, processor **50** invokes application software for providing a menu driven system to wireless communications device **12**, such that the wireless communications device **12** can be utilized to select recording via a menu or listing of recordings. Alternatively, the central facility **14** may be equipped with a voice response system, such that an individual at wireless communications device **12** makes necessary entries/selections via voice commands.

With additional reference to FIG. **6**, a personal storage unit **16** is illustrated and described.

Personal storage unit **16** has a processor **70**. Connected to the processor **70** is interface **72** (such as a transceiver or modem). The personal storage unit **16** also includes a storage unit **74**, such as a CD ROM tower, flash memory, or other storage medium, etc., for storing music recordings. Additionally, the personal storage unit **16** may include a decoder/encoder **76** which is a series of software instructions for decoding and encoding music recordings. In this regard, and in accordance with the embodiment (as set forth in FIG. **2**) in which the wireless communications device is utilized to retrieve selected recordings from central facility **14** for storage in the personal storage unit **16**, the encoded music received from central facility **14** at the personal storage unit **16** may first be decoded prior to storage in the storage unit **16**. In such an instance, upon retrieval of a selected recording from the personal storage unit **16** for play at the wireless communications device **12**, the encoder first encodes a retrieved recording for wireless transmission to the wireless communications device **12**. Alternatively, it should be understood and appreciated that the encoded music received by the personal storage unit **16** may be stored in an encoded fashion, such that the decoder/encoder is unnecessary.

In accordance with one aspect of the invention, personal storage unit **16** may also be a memory storage location at the central facility **14**, or other remote site. In this way, a user of device **12** may have a personal account for storing recordings, such that the account (e.g., personal storage unit **16**) is accessible via device **12** and other devices (such as a personal computer). As described above, a personal storage account may store only selected information pertaining to a recording, such as a title and an address or memory location of the recording, such that a recording may be retrieved through a corresponding account listing by accessing and/or retrieving the remote file containing the selected recording. It is also specifically contemplated that such a personal storage account system may employ a file sharing program such that the listings in the account do not include corresponding addresses, but that the file sharing program merely searches for an approved (based upon defined standards) copy of the recording, and then retrieves the recording once found. Alternatively, the personal storage account may include a last known address of a selected recording and, when that address no longer contains the recording, a search for an approved version of the recording is made and, when found, the last known address is updated. As will be appreciated, use of a common database or a network-oriented file sharing approach, accessible via a personal storage account, conserves storage space since it does not require a single copy of the recording for each user that acquires the recording

With reference now to FIG. **7**, a representative example of how data packets are transmitted in accordance with a protocol of the present invention is illustrated. In particular, with reference to FIG. **7***a*, data is transmitted in a plurality of data packets **100**. In particular, for example, the first set of data packets, including one or more packets **100**, may include information pertaining to an identifier or address associated with a source of the streamed data. In the example of FIG. **7***a*, the packet is marked with a "A", and is an initially transmitted packet. Additional packets may contain information pertaining to a music recording being transmitted, and as illustrated in FIG. **7***a*, any such packets are designated by a "I". The remainder of the packets include data indicative of the music recording being transmitted, and are labeled "M" in the example of FIG. **7***a*, the address identifier and the information pertaining to the music recording are transmitted first, and thus serve as a header. It will be understood and appreciated

that the address and/or information data may be transmitted to other locations within the data stream.

In the example of FIG. **7***b*, a real time data stream is illustrated. As illustrated, the data stream includes music, followed by data indicative of an advertisement (and labeled ADV), followed by data packets indicative of talk. Such a data stream would be representative of the real time radio broadcast, including music, advertising, and talk from a disc jockey or host.

In the example of FIG. **7***c*, data indicative of a voice broadcast, labeled "talk" is encoded in packets, and other "data", as labeled, is interspersed within the talk data packets in accordance with protocol. This illustration, for example, the broadcast may be a real time broadcast of an athletic event, wherein the data packets include data indicative of the circumstances of the athletic event, such as the score of the game, or other circumstances. It should be understood that any desired protocol may be employed. Additionally the data is preferably compressed and encrypted such that subsequent decoding involves both decompression and de-encryption.

With reference to FIG. **8**, one preferred example of how the data packets are processed is illustrated. For example, data packets received by wireless communications device **12** are processed by processor **20**, and passed through at least one buffer. In the simplest embodiment of the present invention, only a single buffer is needed, such that all data packets are transmitted through the same buffer. However, in a preferred embodiment, multiple buffers or stacked memory are/is utilized, for the purpose of separating data packets corresponding to different features. For example, as illustrated in FIG. **8**, the processor **20** (or a data parser) transmits those packets containing data for displaying on a display of the wireless communications device to buffer **102**, while data indicative of sound (e.g., audio such as talk, music, etc.) are streamed through a sound buffer **104**. As illustrated, each of the buffers **102**, **104** have corresponding buffer locations, indicated as B_{dn}, for streaming data packets such as P_{dn} (for display data), or P_{sn} (for sound data) Additionally, as illustrated in FIG. **8**, each of the buffer locations of display buffer **102** may have a correspondingly associated input, designated by inputs **106** such that information displayed on a display may be associated with a particular input on the wireless communications device. In this regard, for example, when information indicative of an identifier of a source of the music or of an advertiser is displayed on the display, the corresponding input may be activated to establish a communications link with that source or advertiser. Alternatively, as will be appreciated, packets containing address or identification information, such as that packet labeled "A" in FIG. **7***a*, may be routed through yet an additional input buffer, wherein buffer storage locations within which the input buffer corresponding inputs on the wireless communications device **12**.

With reference to FIGS. **9***a*-**9***d*, display screens of wireless communications device **12**, in use, are illustrated. For example, in the illustration of FIG. **9***a*, data indicative of an artist, album, or recording data associated with a particular music recording being played by wireless communications device **12** is illustrated. Additionally, data indicative of a source of the music recording is illustrated and, preferably, positioned on the display in association with the corresponding keypad input, such that by pressing the keypad input **106** a communications link with the source will be initiated. It will be understood and appreciated that, in view of the foregoing discussion regarding data packets and buffer storage locations, that data indicative of an identifier of the source may be stored in a corresponding buffer location associated with the keypad input.

FIG. **9***b* is illustrative of a situation when an advertisement in a streaming audio signal is being output by the player, with corresponding data displayed on the display screen. In the example illustrated, the user is invited to order a large pizza from Pizza Hut. In accordance with the invention, the user may place an order during the advertisement by pressing a button corresponding with "order" display feature on the display. Again, this is accomplished through the positioning of data and corresponding memory location, where the data includes an identifier (such as an address or telephone number) for establishing a communications link with the advertiser. As is also illustrated, in the scenario in which a user of communications device **12** is receiving a real time streaming audio broadcast, data indicative of the real time streaming broadcast includes data indicative of the station or streaming source from which the broadcast is being received is transmitted, and stored in a particular memory or buffer storage location, and associated with a keypad input, such that the station may be contacted with a single entry. This is particularly useful for call-in shows, contests, making requests to the station, etc.

With additional reference to FIG. **9***c*, an example of real time streaming broadcast, in which music is being output along with corresponding data on the display, is illustrated. In accordance with an aspect of the present invention, data indicative of a site at which the particular music recording is being played (and/or it associated album or video) can be ordered is transmitted and associated with a particular input, as evidenced by "order" on the display at which location is associated with a particular keypad input on the wireless communications device. Accordingly, while listening to the music recording, an individual may activate the order key and be connected with a source for ordering that particular music recording. For example, the identifier or address associated with the "order" location may be the source of the streaming music, or alternatively, may be a remote music storage source, such as indicated by reference numeral **19** in FIG. **3**. Additionally, upon activation of the order key, either a data, a voice, or a combined voice/data link may be established with the source at which the music recording is to be purchased, and the purchase may be conducted in a purely electronic fashion, or by speaking with an operator. Preferably, such a link terminates the link with the streaming source, although terminating the initial link may not be necessary if there is sufficient bidirectional bandwidth available. Additionally, a selection of how the purchase is to be made could also be entered using wireless communications device **12**. For example, purchase may be made such that a complete copy of the sound recording (or its associated album) is downloaded to the memory **26** within wireless communications device **12**. Alternatively, the user can specify, either by input, or through a previously established account with the source at **20** which the recording is being purchased, to have the music recording downloaded to a remote, personal storage unit, such as the personal storage unit **16** indicated in FIGS. **2** and **3**. Alternatively, the user may simply select to have the music recording located on a transferable medium, such as a CD or DVD, and courriered or mailed to a selected address of the user.

Additionally, as illustrated in FIGS. **9***b* and **9***c*, the contact information is preferably buffered or QUED in such a way that at least one additional, previous address or identifier is temporarily stored. For example, where the data first includes an advertisement from Pizza Hut (as in FIG. **9***b*), and then streams a recording by Jewel (as indicated in FIG. **9***c*), the data indicative of Pizza Hut is moved over one location on the display and associated with a different key, such that even after the Pizza Hut advertisement has concluded, a commu-

nications link with a Pizza Hut central source may still be made. It will be understood and appreciated that the QUE or buffer for retaining prior items associated with particular sets of data streams may also be retained in memory, although not displayed on the display, such that through utilization of a scroll feature previous items may be recalled.

FIG. **9***d* illustrates display of athletic contests, such as a football game. In accordance with the invention, and as described, as the user is listening to a broadcast of the athletic contest, data indicative of the contest may be transmitted, according to a protocol for display on the display. In the example of FIG. **9***b*, the data includes the contestants in the contest, the amount of time remaining in the contest, and in the instance of a football game, a possession arrow to indicate which team has possession of the football, a score, and down, yards to go, and location of the line of scrimmage. It will be appreciated that other circumstances associated with athletic events, depending upon the nature and type of the event, may be displayed. Additionally, the information is periodically updated as additional data packets including data indicative of the real time circumstances of the game are transmitted.

In use, a user of communications device **12** may establish a communications link via the communications network with the remote storage facility **14**. In a preferred embodiment, the facility **14** has a uniform resource locator (URL) on a global communications network (such as the world-wide web), and device **12** accesses the facility **14** via a server in the communications network. Alternatively, device **12** may be utilized to dial directly a telephone number associated with the storage facility **14**. Using keypad input **22**, or microphone **32**, when storage facility **14** includes voice recognition equipment, the user may select one or more music recordings for downloading to the wireless communications device. If the selected recordings are already encoded, they are transmitted to the wireless communications device **12** via the communications network, and stored in memory **32**. Alternatively, if the selected recordings are not already encoded by encoder **5 8**, they are first encoded at the storage facility and then transmitted via the communications network to the communications device **12**.

As will by now be appreciated in view of the foregoing, the communications device **12** may also be used for retrieving one or more music recordings from a remote storage facility **14** for storage in a personal storage unit **16** of the user. As described, the personal storage unit **16** may be a memory storage location at an address on the global communications network and, indeed, may be located at the remote storage facility **14**. In such an instance, when a communications link with a remote storage facility **14** is established with wireless communications device **12**, the user can select whether he or she wishes to select new recordings, or enter his or her personal storage unit account for retrieval of recordings that have already been purchased.

In accordance with a preferred aspect of the present invention, the music recordings are encoded in data packets for transmission via a packet switched network. In particular, it is preferred that the wireless communications network be a next or third generation network, such that data transmissions are at sufficiently high speeds, and preferably greater than 50 KHz.

Once an encoded music recording is stored in memory **26**, or on a memory cartridge, of the wireless communications device **12**, the input **22** may be utilized to control the player to play the recording. In this regard, when a music recording is retrieved from memory for play, the player decodes the encoded data packet according to conventional steaming techniques in the buffer. The player outputs the music via speaker **34** or, in the event earplugs or headphones are connected to port **44** of communications device **12**, then the music is outputted via the headphones or earplugs.

In accordance with an aspect of the invention, information relating to a music recording is preferably transmitted along with music recording data for storage in memory **26**. For example, data indicative of the artist, the title of the recording, the album or CD from which the recording came, the recording label, the date of the recording, or any other desired information may be stored along with the recording at storage facility **14**, and transmitted for storage in memory **26**. Preferably, the informational data is stored as a header (e.g., in one or more integrally transmitted data packets) (See FIG. **1**), such that processor **20** outputs the information to display **24**. Alternatively, informational packets may be disseminated between packets containing music data. Additionally, it is an aspect of the present invention that each music recording stored at facility **14** has associated therewith data indicative of an electronic address of the facility **14**, which address data is also transmitted to the communications device **12** upon retrieval of a music recording. Communications device **12** is programmed such that, upon retrieval and playback of the recording, the data indicative of the address of the storage facility **14** is associated with a particular key or input on communications device **12** and may remain stored in a memory location associated with that key even after playback is completed (or until replaced with other data). Thus, the user of communications device **12**, upon opening the "player application", will be able to immediately establish a communications link with storage facility **14** by pressing the program key. In this regard, informational data indicative of the address, or indicating to the user that a particular key may be pressed to establish a quick communications link with the storage facility **14**, is preferably displayed on the display.

Alternatively, the present invention may be utilized to stream audio which is music or broadcast, in real time, from a streaming source. In such an instance, the streamed data is not stored in an internal memory of wireless communications device **12** or in a memory cartridge, but simply streamed through the buffer and played. As described, information indicative of that which is being streamed may be simultaneously output on a display of the communications device. Particularly, contact information (e.g., a telephone number or electronic address) is preferably associated with an input such that an additional communications link may be established with a source or entity associated with the information In the preferred embodiment described, for example, a user may establish a link with source of an advertisement for purpose of making a purchase. It should be understood and appreciated that the actual communications link made may be made through the streaming source (such as a radio station), or may be made through another remote site, such as a transaction clearing house. Additionally, it is contemplated that location information, such as may be obtained via an incorporated global positioning system unit, or by a network location determining feature, may be transmitted along with any signal such that the communications link may be routed, if desired, to a particular location. For example, in the instance of "Pizza Hut", which has a plurality of locations, the call may be routed to a nearest most Pizza Hut. Preferably, however, the call is initiated to a central location of Pizza Hut, or to a web site or answering service engaged by Pizza Hut and other entities for the purpose of taking orders. Additionally, it should be understood and appreciated that while the preferred input is a key on the telephone, or communications device **12** being employed, the input may be any other type of input,

such as a voice activated input or a touch screen display, such as used on many conventional personal digital assistants.

From the foregoing description, it will be readily seen that a wide variety of other uses fall within the scope of the application. For example, in the preferred embodiment described, information indicative of the source at which a particular music recording being played is preferably associated with an input on the communications device **12**, such that activation of that input establishes a communications link with the source for the purpose of purchasing a music recording.

However, in accordance with an additional aspect of the invention, a concert schedule of the artist or group that recorded the song being played may be accessed at the source, for the purpose of buying concert tickets. Accordingly, upon hearing a particular song, a user of communications device **12** can activate a single input and establish a communications link with a source for purchasing concert tickets. It should be understood that the communications link may be a voice communications link or, alternatively, may be a voice and/or data communications link, such that the tickets may be purchased electronically. In particular, while the concert information may be available at the described source, it should be understood and appreciate that additional data may be encoded in the data stream, and associated with a different input, such that activation of a first input establishes a communications link with a first source at which the music recording may be purchased, while activation of a second input establishes a communications link with a second source at which concert tickets may be purchased. It should be understood that the purchasing features of the present invention may be utilized on wired or wireless PCs and computing stations, as well as via wireless links. It should also be understood that, while the invention has been described with respect to music or sound recordings, various features of the invention are applicable to recordings of other types, such as video recordings.

With reference now to FIG. **10**, an alternative embodiment of the present invention, is illustrated and described. In particular, in the embodiment of FIG. **10**, the wireless communications device **12** is incorporated in a vehicle. Thus, in such an instance, each of the components of the wireless communications device, such as the processor, memory, buffer, input, display, microphone, speaker, etc. may not be encased within the same housing. In fact, it is preferred that a plurality of speakers **122** are utilized, and spaced about the vehicle in a conventional fashion. Additionally, it is preferred that the memory **124** has much greater storage capacity than in a portable, handheld wireless communications device. In this regard, the memory may be one or more burnable CDs. The remaining aspect of this embodiment of the present invention is similar to those described above, and need not be reiterated here. In summary, the wireless communications device may be used to download selected, encoded music recordings and played via the vehicle speakers., or to stream a real time encoded broadcast. Preferably, the wireless communications device is also a voice communications device, such that voice connections may be made with the device, as well. It should be understood and appreciated that, in this vehicular embodiment, that a portable wireless communications device may be utilized in conjunction with in vehicle components, such that the wireless communications device communicates (such as by the cable connection) with one or more speakers, a storage unit, and/or an input.

From the foregoing it will be seen that this invention is one well adapted to attain all ends and objects hereinabove set forth together with the other advantages which are obvious and which are inherent to the structure.

It will be understood that certain features and subcombinations are of utility and may be employed without reference to other features and subcombinations. This is contemplated by and is within the scope of the claims.

Since many possible embodiments may be made of the invention without departing from the scope thereof, it is to be understood that all matter herein set forth or shown in the accompanying drawings is to be interpreted as illustrative, and not in a limiting sense.

What is claimed is:

1. A method comprising:

receiving an electronic response indicative of a user's selection of an advertisement that has been digitally and wirelessly transmitted to a portable wireless communications device operated by the user;

receiving, with said electronic response to said advertisement and from the portable wireless communications device, information indicative of a GPS-determined location of said portable wireless communications device; and

based upon said received location information, routing a connection between said portable wireless communications device and a communications device associated with a source associated with said advertisement so as to allow the source an opportunity to provide a good or service to the user, wherein said receiving said electronic response indicative of the user's selection of said advertisement further comprises receiving from said portable wireless communications device a response to said advertisement for which information indicative of the advertisement has been stored in the portable wireless communications device and subsequently recalled by the user of the portable wireless communications device.

2. The method as set forth in claim **1**, wherein said advertisement comprises contact information for use in contacting a source associated with said advertisement.

3. The method as set forth in claim **2**, wherein said contact information comprises a telephone number.

4. The method as set forth in claim **2**, wherein said contact information comprises an electronic address of a website.

5. The method as set forth in claim **1**, wherein said receiving an electronic response indicative of a user's selection of an advertisement, said receiving information indicative of a location of said portable wireless communications device, and said routing a connection between said portable wireless communications device and a communications device associated with a source associated with said advertisement are performed by at least one electronic processor.

6. A system comprising:

a portable wireless communications device comprising a display, an input, and a memory;

wherein said portable wireless communications device wirelessly receives an advertisement for display on said display;

wherein information corresponding to said advertisement is stored in said memory of said portable wireless communications device to enable said information to be subsequently recalled via said input of said portable wireless communications device for display on said display of said portable wireless communications device;

a server, located remotely from said portable wireless communications device, wherein said server receives an electronic response indicative of a user's selection of

said advertisement that has been digitally and wirelessly transmitted to the portable wireless communications device, and

wherein said receiving said electronic response indicative of the user's selection of said advertisement further comprises receiving from said portable wireless communications device a response to said advertisement for which information indicative of the advertisement has been stored in the portable wireless communications device and subsequently recalled by the user of the portable wireless communications device.

7. The system as set forth in claim **6** further comprising:

wherein said system receives, with said electronic response to said advertisement and from the portable wireless communications device, information indicative of a GPS-determined location of said portable wireless communications device; and

wherein said system routes a connection between said portable wireless communications device and a communications device associated with a source associated with said advertisement.

8. The system as set forth in claim **7** wherein said portable wireless communications device further comprises a handheld device comprising a GPS receiver and wherein said input of said portable wireless communications device is a touch screen input,

wherein said advertisement comprises a first advertisement,

wherein a second advertisement is wirelessly received in said portable wireless communications device,

wherein information corresponding to said second advertisement is also stored in said memory of said portable wireless communications device,

wherein said information corresponding to said second advertisement is subsequently retrievable on said display to enable initiation of a communications link with an advertiser associated with said second advertisement, and

wherein said portable wireless communications device enables use of said touch screen input to scroll through said stored advertisement information relating to said first and said second advertisement.

9. The system as set forth in claim **6** wherein said advertisement comprises an identifier for communicating with the source associated with said advertisement.

10. The system as set forth in claim **9** wherein said identifier comprises a uniform resource locator.

11. The system as set forth in claim **9** wherein said identifier comprises a telephone number.

12. The system as set forth in claim **6** wherein said information corresponding to said advertiser that is stored in said memory is stored temporarily.

13. The system as set forth in claim **6** further comprising:

wherein said advertisement is a first advertisement,

wherein said information corresponding to said first advertisement that is stored in said memory is initially stored at a first location in said memory,

wherein said portable wireless communications device wirelessly receives a second advertisement,

wherein said information corresponding to said first advertisement is moved to a second location in said memory, and

wherein said information corresponding to said second advertisement is stored at said first location in said memory of said portable wireless communications device.

14. The system as set forth in claim **13** wherein said information corresponding to said first advertisement and said information corresponding to said second advertisement may be recalled for display on said display of said portable wireless communications device.

15. The system as set forth in claim **13** further comprising:

wherein said portable wireless communications device enables said information corresponding to said first advertisement and said information corresponding to said second advertisement to be retrieved from said memory of said portable wireless communications device for display on said display of said portable wireless communications device, and

wherein said portable wireless communications device enables use of said touch screen input to scroll through said stored advertisement information relating to said first and said second advertisement.

16. A system comprising:

a portable wireless communications device comprising a display, an input, and a memory;

wherein said portable wireless communications device wirelessly receives an advertisement for display on said display;

a source of digital media recordings;

wherein said portable wireless communications device plays a streaming digital music recording that is wirelessly received from said source of digital media recordings;

a server, associated with said source of digital media recordings and located remotely from said portable wireless communications device,

wherein said server receives an electronic response indicative of a user's selection of said advertisement that has been digitally and wirelessly transmitted to the portable wireless communications device,

wherein said electronic response to said advertisement is initiated via said input of said portable wireless communications device while said portable wireless communications device is playing said streaming digital music recording,

wherein said electronic response includes information transmitted from said portable wireless communications device; and

wherein said initiation of said response to said advertisement while said streaming digital music recording is playing in said portable wireless communications device stops said streaming play of said music recording, wherein said receiving said electronic response indicative of the user's selection of said advertisement further comprises receiving from said portable wireless communications device a response to said advertisement for which information indicative of the advertisement has been stored in the portable wireless communications device and subsequently recalled by the user of the portable wireless communications device.

17. The system as set forth in claim **16**, wherein said system receives, with said electronic response to said advertisement and from the portable wireless communications device, information indicative of a GPS-determined location of said portable wireless communications device.

18. The system as set forth in claim **16** further comprising simultaneously displaying, on the display of the portable wireless communications device, said advertisement and information about said music recording that is playing in said device.

19. A system comprising:

a portable wireless communications device comprising a display, an input, and a memory;

wherein said portable wireless communications device wirelessly receives an advertisement for display on said display;

a source of digital media recordings;

wherein said portable wireless communications device plays a streaming digital music recording that is wirelessly received from said source of digital media recordings;

a server, associated with said source of digital media recordings and located remotely from said portable wireless communications device,

wherein said server receives an electronic response indicative of a user's selection of said advertisement that has been digitally and wirelessly transmitted to the portable wireless communications device,

wherein said electronic response to said advertisement is initiated via said input of said portable wireless communications device while said portable wireless communications device is playing said streaming digital music recording,

wherein said electronic response includes information transmitted from said portable wireless communications device; and

wherein said streaming digital music recording continues streaming from said source of digital media recordings and playing in said portable wireless communications device upon initiation of said response to said advertisement, wherein said receiving said electronic response indicative of the user's selection of said advertisement further comprises receiving from said portable wireless communications device a response to said advertisement for which information indicative of the advertisement has been stored in the portable wireless communications device and subsequently recalled by the user of the portable wireless communications device.

20. The system as set forth in claim 19, wherein said streaming music recording and said electronic response to said advertisement are each transmitted via a common bidirectional data communications link between said source and said portable wireless communications device.

21. The system as set forth in claim 20, wherein said streaming digital music recording is streaming from an online account of a user at said source of digital media recordings.

22. The system as set forth in claim 21, wherein said system receives, with said electronic response to said advertisement and from the portable wireless communications device, information indicative of a GPS-determined location of said portable wireless communications device.

23. The system as set forth in claim 19 further comprising simultaneously displaying, on the display of the portable wireless communications device, said advertisement and information about said music recording that is playing in said device.

* * * * *

APPENDIX
TAB 4

US008385912B2

(12) **United States Patent**
Rolf

(10) **Patent No.: US 8,385,912 B2**
(45) **Date of Patent: Feb. 26, 2013**

(54) **DIGITAL MEDIA DISTRIBUTION SYSTEM**

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See application file for complete search history.

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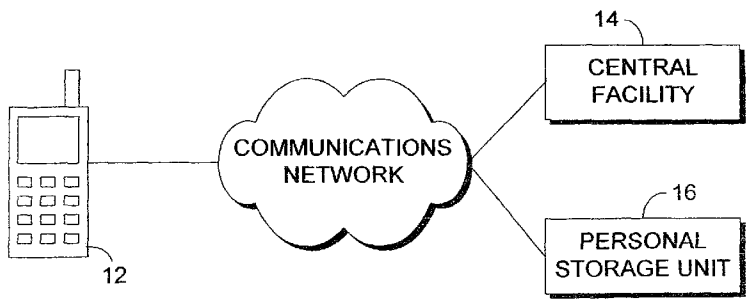
(57) **ABSTRACT**

A system and method employs an online site for making stored digital video recordings available for selection and download to a wireless communications device. Upon receipt of a selection for a digital video recording, the system and method causes the selected digital video recording to be wirelessly transmitted to the wireless communications device. The selected digital video recording is also made available to a personal computer associated with the user who made the selection. At least a title of the selected digital video recording is stored in a personal storage account of the user.

18 Claims, 4 Drawing Sheets



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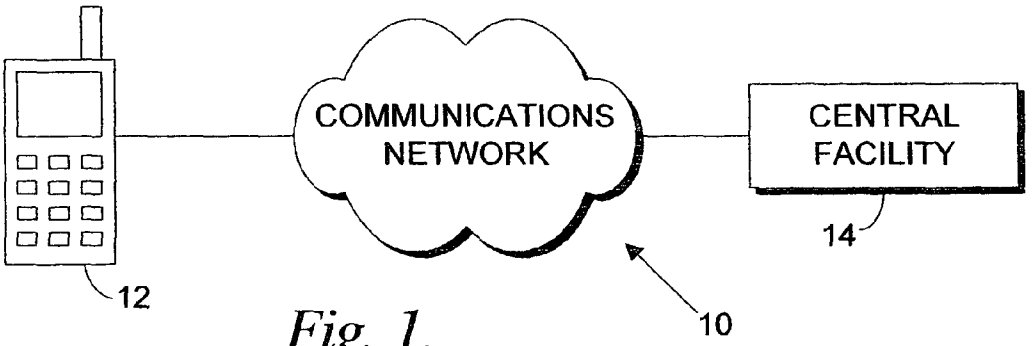

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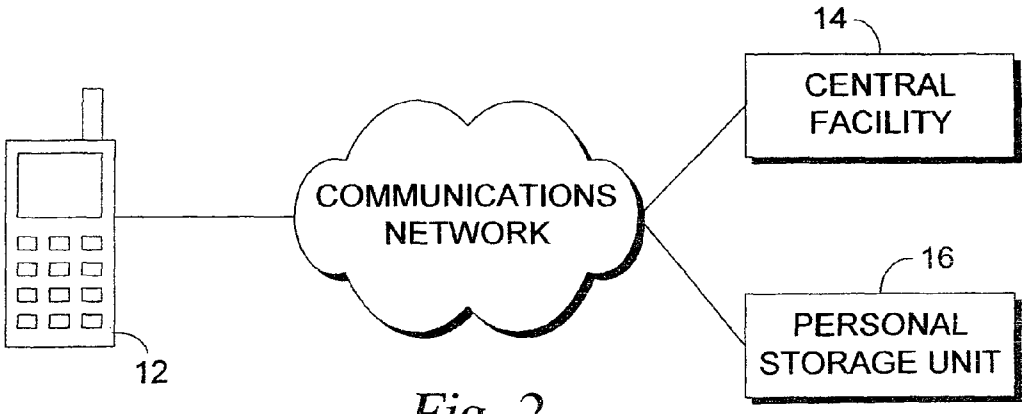

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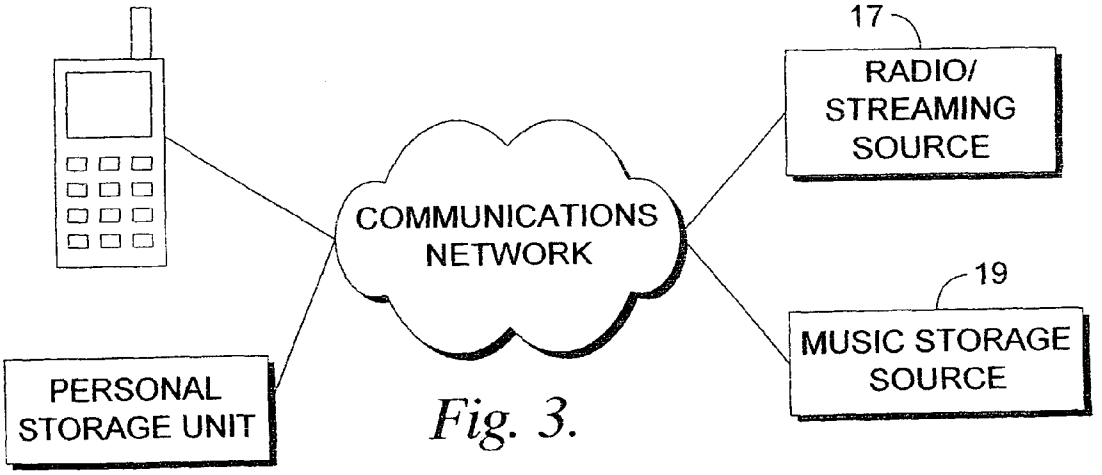

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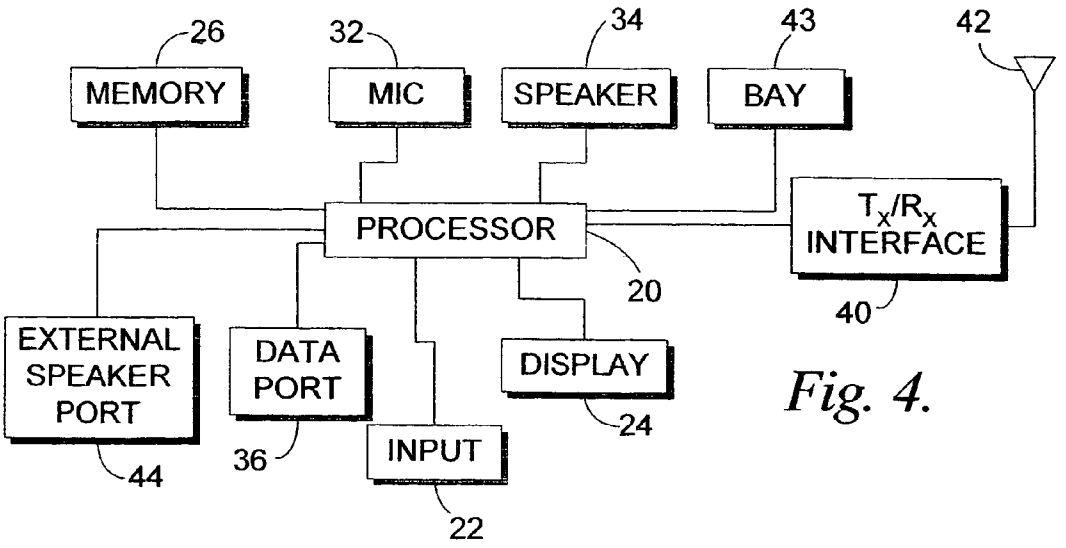
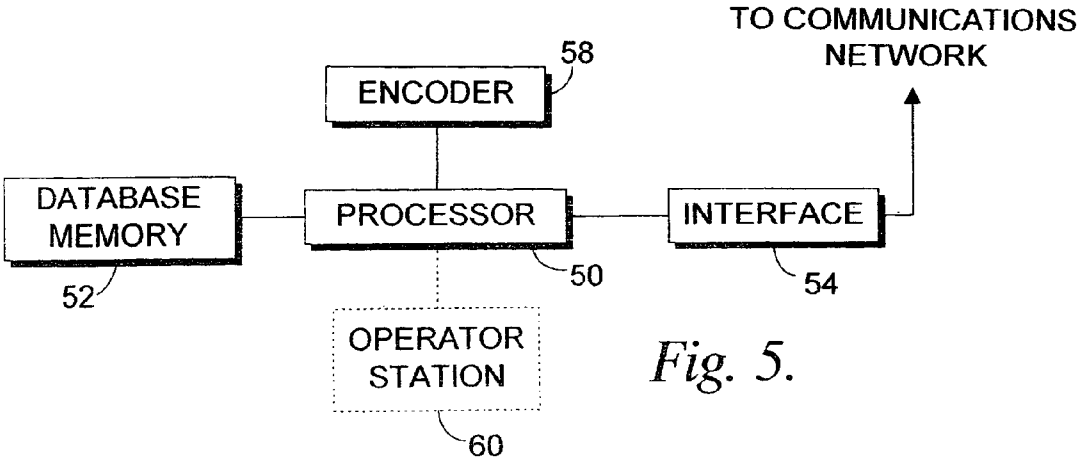


Fig. 4.



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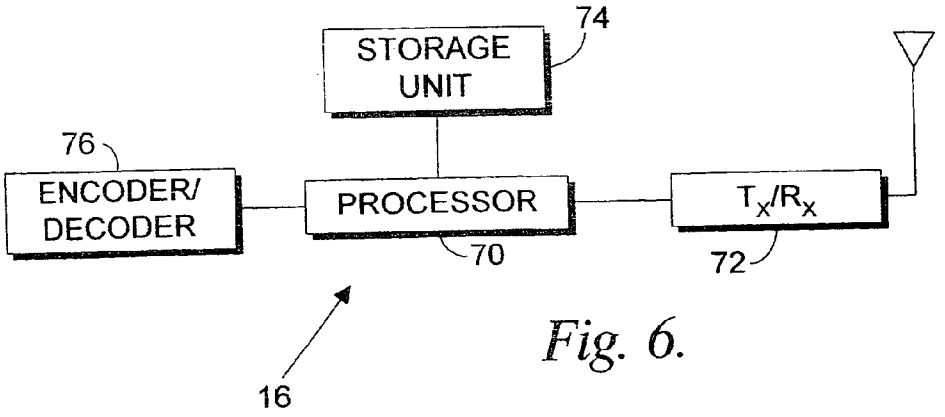

Fig. 6.

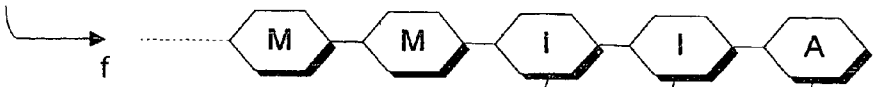

Fig. 7a.

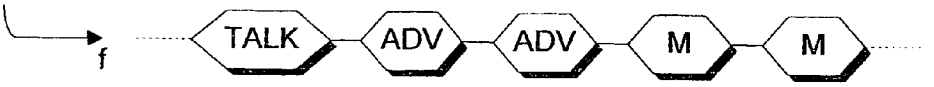

Fig. 7b.

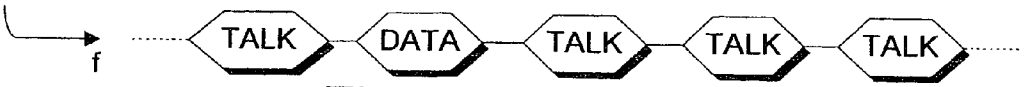

Fig. 7c.

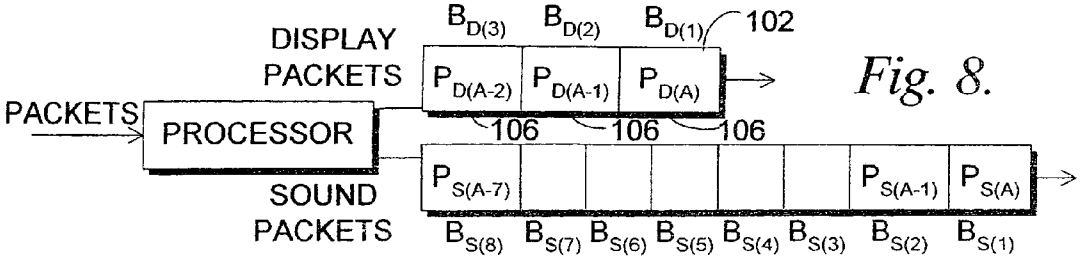

Fig. 8.

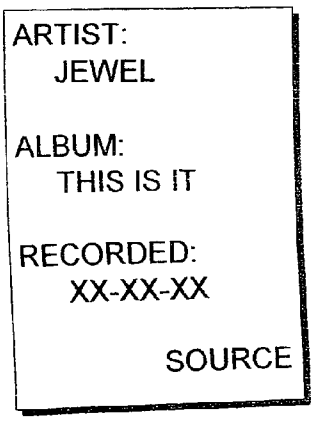

Fig. 9a.

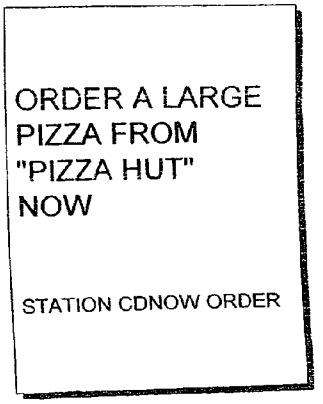

Fig. 9b.

Fig. 9c.

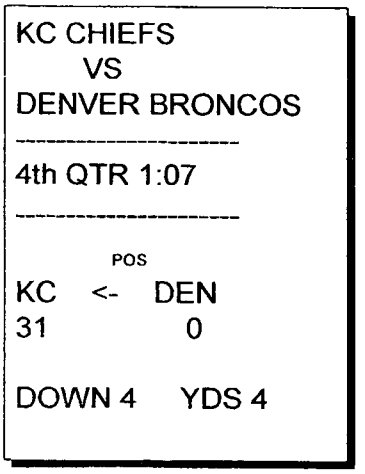

Fig. 9d.

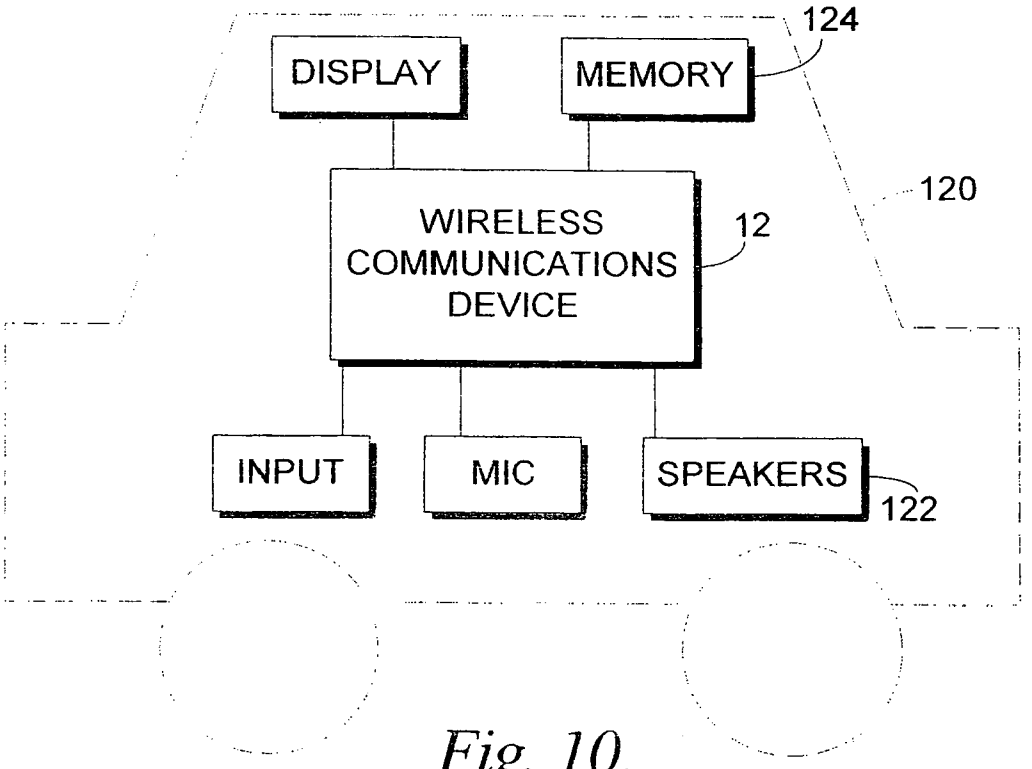

Fig. 10.

DIGITAL MEDIA DISTRIBUTION SYSTEM

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a continuation of U.S. patent application Ser. No. 09/721,120, filed Nov. 22, 2000, now U.S. Pat. No. 7,065,342, entitled System, Method and Device for Playing Recorded Music on a Wireless Communications Device ("the '342 patent"), which claims the benefit of priority from U.S. Provisional Application No. 60/167,179, filed Nov. 23, 1999, entitled System, Method and Device for Playing Recorded Music on a Wireless Communications Device. The following pending patent applications are related to the present application and claim priority, either directly or indirectly, to the '342 patent: U.S. patent application Ser. No. 11/437,131, filed May 18, 2006, and entitled System for Storing and Transmitting Digital Media: and U.S. patent application Ser. No. 11/595,500, filed Nov. 9, 2006, and entitled System, Method and Device for Mobile Advertising. Additionally, the following abandoned applications, each of which names Devon A. Rolf as the sole inventor and was filed on May 18, 2006 (except for U.S. patent application Ser. No. 11/451,834, which was filed on Jun. 13, 2006), are related to the present application and claim priority, either directly or indirectly, to the '342 patent:

App. No. Title

Ser. No. 11/437,122 System and Method for Selling a Streaming Digital Media Recording

Ser. No. 11/437,123 System and Method for Transmitting Digital Media and an Advertisement or Identifier

Ser. No. 11/437,124 Wireless Communications Device for Receiving and Displaying Sports Data

Ser. No. 11/437,127 System and Method for Searching for Digital Media

Ser. No. 11/437,128 System, Method and Device for Downloading Digital Media

Ser. No. 11/437,129 Wireless Communications Device for Playing Digital Video Recordings

Ser. No. 11/437,130 Satellite Radio Receiver and Digital Media Player

Ser. No. 11/437,132 Method for Storing and Transmitting Digital Media

Ser. No. 11/437,133 Method of Playing Digital Media on a Wireless Communications Device

Ser. No. 11/437,134 Wireless Communications Device for Playing Digital Media

Ser. No. 11/437,135 Wireless Communications Device for Playing Digital Media and Displaying Information

Ser. No. 11/437,136 Wireless Communications Device for Purchasing Digital Media Played at the Device

Ser. No. 11/437,137 Entertainment Center for Receiving and Displaying Digital Media

Ser. No. 11/437,138 System and Method for Transmitting Sports Information to a Wireless Device

Ser. No. 11/437,139 Wireless Communications Device and Method for Downloading Software

Ser. No. 11/437,140 System and Method for Downloading Software to a Wireless Communications Device

Ser. No. 11/451,834 System and Method for Managing Digital Media Recordings

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention is generally directed to a system and method for wirelessly transmitting encoded music, via a wireless communications link, to a portable or mobile communications device which includes a player for playing the music or audio.

SUMMARY OF THE INVENTION

In one embodiment, the present invention is a system for transmitting encoded music from a remote, central facility to a wireless communications device, such as a cellular telephone or personal digital assistant. In particular, a user of the cellular telephone (for example) may use the telephone to establish a wireless communications link with the remote, central facility, and then wirelessly download one or more selected music recordings for storage in a memory of the cellular telephone. In particular, the selected music recording(s) is/are transmitted via a wireless data communications link to the cellular telephone. Preferably, the music recordings are encoded and transmitted in packets, and may particularly be encoded by a compression algorithm into an encoded (such as MP3 or other) format.

Using an input of the cellular telephone, a user may select one or more recordings for transmission to the cellular telephone. The selected music recordings, upon receipt by the cellular telephone, are stored in a memory. In one embodiment, the memory is an internal memory. Alternatively, the memory may be a separate cartridge or memory stick (such as a flash memory cartridge) for movable installation in a bay on the telephone. A player within the cellular telephone may then be initiated to play the music recordings, for output on a speaker. In particular, the speaker may include earphones or earplugs connected to a port on the cellular telephone. Alternatively, the player may output the music through an internal speaker of the cellular telephone.

In an alternate embodiment, the wireless communications device is utilized in combination with a vehicle, and a player, a memory for storing the music, and at least one speaker, are located within the vehicle, such that selected recordings may be retrieved from the remote central facility, and played in the vehicle. In this embodiment, the memory may include one or more burnable CDs, and will typically have far more memory storage capacity than the memory of the cellular telephone, which is utilized in the previous embodiment.

In either embodiment, the wireless communications device preferably includes a buffer for streaming data indicative of the music. Additionally, the wireless communications device is preferably a cellular communications device and, in particular, is a cellular voice communications device, such as a cellular telephone.

In accordance with yet an additional aspect of the present invention, the wireless communications device of the present invention (whether it be handheld or installed within a vehicle) retrieves recorded music from a personal storage unit of the user. For example, a user may have a CD tower, flash memory unit, etc. in his or her home or apartment, or may have a personal storage account at a central facility. A plurality of recordings may be stored in the personal storage unit. The personal storage unit is accessible via a wireless communications link from the wireless communications device, to thereby enable the retrieval of selected music from the user's own storage facility. Additionally, such a system permits the user to easily mix recordings from a number of different recordings from his or her own storage unit.

Thus, the system of this embodiment of the present invention utilizes the central facility having music recordings stored therein, a personal storage facility located remotely from the central facility, such as in the residence of a user, and the wireless communications device. In this embodiment,

when a user selects one or more recordings from the central facility, rather than the recordings being transmitted to the wireless communications unit directly via a wireless communications link, they are rather transmitted to the personal storage unit of the user. Once stored in the personal storage unit, the user can then access his or her personal storage facility via a wireless communications link for retrieving, via the wireless communications link, one or more selected recordings. In accordance with this embodiment of the present invention, the encoded music transmitted to the personal storage unit may be stored in a flash memory or, alternatively, may be stored on burnable CDs or any suitable storage medium. In this regard, the encoded music transmitted to the personal storage unit of the user may be decoded, for storage in a decoded manner such that it may be played by more traditional music players or, alternatively, may be stored directly in its encoded format. When stored in a decoded format, music recording is again encoded at the personal storage unit upon retrieval. The personal storage unit may be located at the central location or at a remote site or may comprise a personal computer or an entertainment center, including such components as a display screen (e.g., TV or information TV), stereo, speakers, etc, or as stated, an account at a storage location. It should be understood that wirelessly retrieving a recording from a personal storage unit that is located in physical proximity to the user (e.g., an entertainment center, TV, personal computer, etc.) may be accomplished either by connection with a wide area communications network, or alternatively, by a local area wireless connection or protocol, such as Bluetooth and other such technologies.

It should be understood that the transmittal of the recording to the personal storage account may embody transmitting only a portion of the recording, such as the title and memory (e.g., address) storage location of the recording, such that the personal storage account serves as a directory or index for retrieval of acquired or accumulated recordings. In this regard, the recordings may be stored in a contained database, or may be located at multiple storage sites dispersed within a network. In either case, each recording will have a programmed address to which the personal storage account will point for a corresponding recording. Upon access to the personal storage account by the account holder (via a communications device), and after entry of any required passwords, the user may select one or more recordings for streaming or download, whereupon the recording(s) will be retrieved. Temporary copying/cloning techniques may be used to insure at least substantially simultaneous accessibility to the recording by a large number of users.

In accordance with an additional aspect of the present invention, information pertaining to the music recording, such as the artist, title of the recording, an album from which the recording came, the date of the recording, etc. is also transmitted with the recorded music, such that the informational data is displayed on a display of, or associated with, the wireless communications device when the particular recording is being played. Additionally, it is an aspect of the present invention that an identifier, such as a server address, associated with the remote central facility is encoded along with the transmitted data, such that a selected input on (or associated with) the wireless communications device may be pressed for automatically reconnecting with the central facility or personal storage unit.

In preferred embodiments of the present invention, the wireless communications link established between the wireless communications device and the central facility is a cellular communications link and, more particularly, is an Internet link. In other words, the encoded music and/or informational data is preferably transmitted via a packet switch network, and particularly is preferably transmitted at transmission speeds greater than 50 KHz, such as by a next- or third-generation wireless communications network.

In accordance with yet an additional object of the present invention, the music recordings transmitted to the wireless communications device from the central storage facility, or from the personal storage unit of the user, may be transmitted in a real, or substantially real, time basis. In other words, rather than downloading one or more recordings to a memory within the wireless communications device, encoded music may be streamed directly from its source, for input into a buffer within the communications device, and for play at the communications device, without being otherwise stored in the device. In other words, the music is played as it is streamed from the central storage facility or personal storage unit of the user.

In accordance with yet an additional aspect of the present invention, the wireless communications device receives a sound stream from a source, where the sound stream is in a real time broadcast. For example, a radio broadcast may be encoded and transmitted via a wireless communications link to the wireless communications device. The broadcast may, for example, be a broadcast of music or, preferably, is a traditional radio-type broadcast having transmission of recorded music, advertisements, and voice from one or more disc jockeys. Accordingly, the source (e.g., radio station) may have a plurality of inputs for inputting stored music, stored advertisements, or real time voice from a disc jockey. The input information is encoded (if not already encoded) and transmitted to the wireless communications device via an established communications link. In particular, the data stream is a stream of data packets which are streamed through a buffer of the wireless communications device for decoding and play.

In accordance with the particular aspect of this embodiment of the invention, informational data associated with music or advertising being transmitted is displayed on the display. More particularly, information transmitted to the wireless communications device may be associated with a particular input on the device, such that a communications link corresponding to the displayed information may be made. For example, when a music recording is being played at the wireless communications device, data indicative of that recording may be displayed on the display, and, additionally, a selected key on the wireless communications device may be pressed to transmit a signal to the source of the stream that the user of wireless communications device wishes to purchase the music recording. Alternatively, the signal may be transmitted to a remote music storage facility for effecting a purchase of the recording or its associated album. In this regard, the purchase can be conducted in an electronic input mode or, alternatively, a link may be established for transmitting voice communications to and from the source or music storage facility (as the case may be) at which the sound recording or its associated album is to be purchased. In making the purchase, the user may select whether to have the sound recording or its associated album downloaded to the wireless communications device (if memory space permits), or to a remote personal storage unit or account of the user, or to have the sound recording or album stored on a storage medium and transmitted to an address of the user by mail or courier. In accordance with an additional aspect of the invention, payment for the sound recording or album may be made at the time or, alternatively, a monetary amount corresponding to

the purchase may be billed to a periodic invoice associated with the wireless communications device (such as a telephone bill).

As another example of utilization of the present invention, information corresponding to an advertiser may be displayed on a display screen during an advertisement, and an identifier (such as an electronic address or telephone number) may be associated with a particular key on the communications device, such that activation of the key establishes a voice and/or data communications link with the advertiser, such as for the purpose of making a purchase of goods or services advertised. Additionally, and preferably, an identifier (such as an address or telephone number) associated with the radio station or streaming source is allocated to a particular key, such that the user may contact the source and transmit information thereto, or have a voice conversation with the source. This is particular advantageous for responding to call-in shows, trivia contests, games, etc. sponsored by the source/radio station.

As another example of the transmission of sound and information, the broadcast from the source may be a real-time broadcast of an athletic event, broadcast by one or more announcers. The voice signals of the announcer is encoded and transmitted to the wireless communications device **12**. Additionally, information corresponding to the athletic event being broadcast may be transmitted and displayed on the display. For example, the contestants, the scorer of the contest, the time remaining, and other circumstances relating to the game may be transmitted and stored. Preferably, this informational data is periodically transmitted, so as to update the display.

BRIEF DESCRIPTION OF THE DRAWINGS

The objects and features of the invention noted above are explained in more detail with reference to the drawings, in which like reference numerals denote like elements, and in which:

FIG. **1** is an illustration of a system of a first embodiment the present invention;

FIG. **2** is an illustration of a system of a second embodiment of the present invention;

FIG. **3** is an illustration of a system of a third embodiment of the present invention;

FIG. **4** is a block diagram of a conventional wireless communications device utilized in accordance with the principles of the present invention;

FIG. **5** is a block diagram of a central facility of the present invention;

FIG. **6** is a block diagram of a personal music storage unit of the present invention;

FIGS. **7***a*-**7***c* are exemplary illustrations of how data is transmitted in packets;

FIG. **8** is an illustration of streaming data through one or more buses in accordance with the invention;

FIGS. **9***a*-**9***d* illustrate screen displays in accordance with the present invention; and

FIG. **10** is an illustration of a vehicular communications system for playing music in accordance with the principles of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

With reference initially to FIG. **1**, a system of the present invention for playing encoded music on a wireless communications device is denoted generally by reference numeral **10**. In particular, system **10** has a wireless communications device **12**, such as a cellular telephone. Preferably, wireless communications device **12** is a digital, cellular communications device, and is portable and handheld. In this regard, while one preferred communications device is a telephone, it should be understood that the wireless communications device may be types of devices, such as a palm or handheld computing device having wireless communications capabilities.

A communications link may be established between wireless communications device **12** and a remote storage facility, denoted by reference numeral **14**. The remote storage facility may, for example, be at an address on the world wide web, and includes a data base having a plurality of music recordings therein. Preferably, the music recordings are categorized by a plurality of selectable fields, such as "title", "artist", "album or CD type", "recording label", etc. Additionally, the music recordings are preferably encoded in an encoded format, such as MP3 (Mpeg-1 Audio layer 3). It will be understood that the music recordings may be encoded in other formats or, alternatively, may not be encoded at all. In this latter instance, remote storage facility **14** also includes an encoder (not shown in FIG. **1**) for encoding a recording when it is selected to enable it to be efficiently transmitted via a communications network **18**.

As will become apparent from the detailed discussion below, the wireless communications device **12** may be utilized to establish a communications link with the remote storage facility **14**. Then, using a keypad and input on the wireless communications device, or by voice commands, one or more selected music recordings may be retrieved from the storage facility **14**, for transmission, via wireless communications link, to the device **12**. As will become apparent from the detailed discussion below, the retrieved music recording or recordings may be stored in a memory within the communications device **12**, on a memory cartridge or stick insertable into the device **12** or, alternatively, may simply be strung through a buffer of the device **12** for playback, and no stored at the device **12**.

With additional reference now to FIG. **2**, an alternate embodiment of the present invention is illustrated and described.

In the embodiment of the present invention illustrated in FIG. **2**, a wireless communications device **12** communicates with a central facility **14** for retrieval of one or more stored music recordings. Also in this embodiment, in addition to the wireless communications device **12**, and central facility **14**, the system **10** of the present invention further includes a personal storage unit **16**. However, in this embodiment, the retrieved recordings (after being encoded if necessary) are not transmitted directly to the wireless communications device **12**, but are transmitted via a personal storage unit or account **16** of the user. It should be understood that the communications link between the central facility **14** and personal storage unit **16** may be either hard wired or wireless. In this regard, the personal storage unit **16** may be an account located at the facility **14**, or remotely therefrom. The storage unit for storing music recording may, for example, be in a home or residence of the user of wireless communications device **12**. As will be discussed in greater detail below, in this embodiment, one or more selected music recordings are transmitted to the selected, personal storage unit **16** of the user. Subsequently, the user of wireless communications device **12** establishes a wireless communications link with the personal storage unit **16** for retrieving selected music stored therein.

In accordance with yet an additional aspect of the invention, a music recording desired to be played on wireless communications device **12** need not be fully stored within the

device **12**. In this regard, for example, a music recording stored in central facility **14** or personal storage unit **16** may be streamed to the wireless device **12** via an established communications link. In such an instance, data packets are streamed through a buffer for play by a player each of which are in a memory **26** (see FIG. **4**), such that, as one data packet is played within the buffer, and then exits the buffer, an additional data packet is streamed into the buffer.

With reference to FIG. **3**, and in accordance with an alternate embodiment of the invention, a source of streaming audio **17**, such as radio station broadcasting signals, may transmit an audio stream to device **12**. Wireless communications device **12** may be utilized to establish a link with the radio station source **17**, for receiving an encoded stream of data indicative of the transmission of the radio station. In such an embodiment, the encoded stream of data packets are passed through a buffer for play by a player (see FIG. **4**), thereby making wireless communications device **12** a digital radio for receiving streams of encoded audio data.

Additionally, and in accordance with a particular aspect of the present invention, in addition to the audio data transmitted to the communications device **12**, informational data is also sent for display on display **24**. As will be appreciated, in view of the foregoing discussion, that informational data may be stored in packets and, preferably, is stored in packets that are transmitted at the beginning of a particular recording, or packets that are periodically spaced within a set of other packets. Thus, for example, when a particular music recording is played by the radio station, and output at the wireless communications device **12**, data indicative of the music recording is displayed on display **24**. In accordance with a particular aspect of the present invention, at least a portion of that informational data is associated with a selected input on communications device **12**, such that upon activation of the input, the user of communications device **12** may order (for purchase) an authorized copy of the recording, or the album upon which the recording is placed. In this regard, upon activation of the key associated with the informational data, in one embodiment, while pressing the key associated with the selected information, data indicating that the user desires to make a purchase is transmitted to the station/source **17** or other facility. It should also be understood that the informational data may be retained at the server which is sourcing the recording, such that activation of a selected input causes a signal to be transmitted to the server, the receipt of which is matched with the information pertaining to the recording being transmitted. In any case, the purchase can be effected via the station/source **17** or other site, such as indicated by music storage source **19**, either through appropriate inputs on the communications device **12**, or by establishment of a voice communications link with the central facility **14**.

In addition to the user having a choice of whether to buy the single being played, or the entire album on which the single is located, the user also has the opportunity to select the manner in which the purchased recording or album will be distributed to the user. For example, the purchased recording or album may be downloaded to the wireless communications device **12** (if memory space suffices) or, alternatively, may be downloaded to the user's personal storage unit **16**. Alternatively, the user can select to have a storage medium upon which the music is recorded (such as a CD, for example) mailed to a selected address of the user.

Accordingly, the present invention provides a very unique feature for the distribution and purchasing of music recordings, by allowing an individual to make a purchase of a recording and/or its associated album upon hearing the recording.

In accordance with yet an additional aspect of the present invention, as the radio station transmits audio advertising content, informational data indicative of the advertiser is displayed on display screen **24**. In particular, data indicative of a URL or telephone number is preferably associated with a particular key on the communications device **12**, such that by pressing the associated key, a communications link (either data or voice) is established with the source of the advertising. Thus, for example, during an ad for "Pizza Hut", a particular button may be pressed to establish a communications link with a telephone number or address associated with Pizza Hut, for the purpose of ordering a pizza. In this embodiment, the communications device **12** preferably has an additional buffer for buffering the informational display data. Moreover, in a preferred embodiment, data indicative of a plurality of most recent advertisements is preferably stored in the buffer, and associated with a corresponding number of inputs or a menu driven system, such that, sources associated with the most recent advertisements may be readily contacted.

It is contemplated within the scope of the present invention that a server for accessing content transmitted by the radio station may be a satellite server as well. In other words, the communications link may or may not include a satellite communications link.

With additional reference to FIG. **4**, wireless communications device **12** has a processor **20**. Connected to processor **20** are an input (such as a keypad **22**), a display **24**, a memory **26**, a microphone **32**, a speaker **34**, and a port **36**. Additionally, a DTMF encoder/decoder (or just an encoder, if desired) **38**, and a transceiver **40**, and antenna **42** are connected as shown. Additionally, wireless communications device may have a bay **43** for receiving a memory cartridge or stick, such as a flash memory unit. Furthermore, device **12** has an external speaker port (e.g., for ear plugs or headphones) **44**. The construction of conventional wireless communications devices, such as cellular phones, is well known. However, in accordance with the present invention, a buffer and a player for playing encoded music through an internal speaker, or via headphones or earplugs connected to a speaker port, such as port **44** are provided. In accordance with the invention, the player is a set of encoded instructions, stored in a memory **26**, for decoding and playing recorded, encoded music as it is streamed through a buffer. Additionally, device **12** may have a bag or port for receiving a memory cartridge or stick, such that recordings may be stored on a removable memory device, and such that recordings played by the player are retrieved from the cartridge or stick.

In this regard, the wireless communications device **12** may be provided from a manufacturer with a player already installed in the device **12**. Alternatively, the player may be loaded into the communications device **12** by an end user of the device. In this regard, and in accordance with an aspect of the invention, a user of communications device **12** may establish a communications link with a central facility, such as storage facility **14**, and utilizing inputs on the device, such as a keypad, or a microphone (where the inputs are by voice), make appropriate selections for retrieving an encoded player for storage in the communications device **12**. In this regard, when such a selection is made, the set of instructions comprising the player are themselves preferably encoded (if they are not already encoded), and transmitted via the wireless communications link to communications device **12**, for storage in memory. Accordingly, it is a particular aspect of the invention to wirelessly load a set of instructions, and particularly a music player for decoding encoded, recorded music, into a wireless communications device, such as a cellular telephone or communications equipped palm computing

device, such as a portable digital assistant. As part of the invention, data indicative of the type of operating system installed within communications device **10**, and/or memory storage limitations, may be transmitted to central facility **14** for use in selecting a player from a plurality of players.

In accordance with another aspect of the invention, any charges associated with downloading a player (which would preferably be free) and/or loading recordings may be charged directly to a periodic invoice associated with the wireless communications device, and particularly associated with other services (such as telephone services) associated with the wireless communications device **12**. Alternatively, and in accordance with an aspect of the invention, subscriptions may be established such that a user of communications device **12** may have unlimited or a selected amount of access to the music stored at remote facility **14** so long as a periodic subscription fee is paid. For example, for a selected periodic subscription fee, a selected number of recordings (or albums) may be retrieved. Beyond the selected number within the period, additional fees would be incurred. In this regard, and in accordance with the particular aspect of the invention, the subscription fee is invoiced together with other charges associated with services for usage of the wireless communications device **12**. Alternatively, purchases may be accounted for via electronic transmission of an account number of the user, or in more traditional manners.

With reference initially to FIG. **5**, a block diagram of the central facility **14** is illustrated and described.

In particular, a central facility **14** has a processor **50**. Connected to the processor **50** are a data base memory **52** and a interface **54** (such as a transceiver or modem) for transmitting and receiving communications signals. In addition, the central facility **14** may also have an encoder **58** and an operator station **60**. The encoder **58** is a set of processing instructions stored in a memory for encoding music recordings stored within data base memory **52**. In particular, when wireless communications device **12** accesses the central facility **14** via the communications network for purpose of retrieving one or more selected recordings, the encoder **58** may be utilized to encode the music, according to any preferred encryption and/or compression algorithm (such as mp3, liquid audio, etc.), for transmission of the encoded recording(s) to the wireless communications device **12**. Alternatively, the music recording stored within data base memory **52** may be stored in an encoded/compressed manner, such that the encoder **58** is not necessary. While the operator station **60** is not necessary, it may be provided for allowing the user of wireless communications device **12** to have a voice conversation with an operator employed at the operator station **60**. As will be appreciated, in the absence of an operator, processor **50** invokes application software for providing a menu driven system to wireless communications device **12**, such that the wireless communications device **12** can be utilized to select recording via a menu or listing of recordings. Alternatively, the central facility **14** may be equipped with a voice response system, such that an individual at wireless communications device **12** makes necessary entries/selections via voice commands.

With additional reference to FIG. **6**, a personal storage unit **16** is illustrated and described.

Personal storage unit **16** has a processor **70**. Connected to the processor **70** is interface **72** (such as a transceiver or modem). The personal storage unit **16** also includes a storage unit **74**, such as a CD ROM tower, flash memory, or other storage medium, etc., for storing music recordings. Additionally, the personal storage unit **16** may include a decoder/encoder **76** which is a series of software instructions for decoding and encoding music recordings. In this regard, and in accordance with the embodiment (as set forth in FIG. **2**) in which the wireless communications device is utilized to retrieve selected recordings from central facility **14** for storage in the personal storage unit **16**, the encoded music received from central facility **14** at the personal storage unit **16** may first be decoded prior to storage in the storage unit **16**. In such an instance, upon retrieval of a selected recording from the personal storage unit **16** for play at the wireless communications device **12**, the encoder first encodes a retrieved recording for wireless transmission to the wireless communications device **12**. Alternatively, it should be understood and appreciated that the encoded music received by the personal storage unit **16** may be stored in an encoded fashion, such that the decoder/encoder is unnecessary.

In accordance with one aspect of the invention, personal storage unit **16** may also be a memory storage location at the central facility **14**, or other remote site. In this way, a user of device **12** may have a personal account for storing recordings, such that the account (e.g., personal storage unit **16**) is accessible via device **12** and other devices (such as a personal computer). As described above, a personal storage account may store only selected information pertaining to a recording, such as a title and an address or memory location of the recording, such that a recording may be retrieved through a corresponding account listing by accessing and/or retrieving the remote file containing the selected recording. It is also specifically contemplated that such a personal storage account system may employ a file sharing program such that the listings in the account do not include corresponding addresses, but that the file sharing program merely searches for an approved (based upon defined standards) copy of the recording, and then retrieves the recording once found. Alternatively, the personal storage account may include a last known address of a selected recording and, when that address no longer contains the recording, a search for an approved version of the recording is made and, when found, the last known address is updated. As will be appreciated, use of a common database or a network-oriented file sharing approach, accessible via a personal storage account, conserves storage space since it does not require a single copy of the recording for each user that acquires the recording.

With reference now to FIG. **7**, a representative example of how data packets are transmitted in accordance with a protocol of the present invention is illustrated. In particular, with reference to FIG. **7***a*, data is transmitted in a plurality of data packets **100**. In particular, for example, the first set of data packets, including one or more packets **100**, may include information pertaining to an identifier or address associated with a source of the streamed data. In the example of FIG. **7***a*, the packet is marked with a "A", and is an initially transmitted packet. Additional packets may contain information pertaining to a music recording being transmitted, and as illustrated in FIG. **7***a*, any such packets are designated by a "I". The remainder of the packets include data indicative of the music recording being transmitted, and are labeled "M". In the example of FIG. **7***a*, the address identifier and the information pertaining to the music recording are transmitted first, and thus serve as a header. It will be understood and appreciated that the address and/or information data may be transmitted to other locations within the data stream.

In the example of FIG. **7***b*, a real time data stream is illustrated. As illustrated, the data stream includes music, followed by data indicative of an advertisement (and labeled ADV), followed by data packets indicative of talk. Such a data stream would be representative of the real time radio broadcast, including music, advertising, and talk from a disc jockey or host.

In the example of FIG. **7***c*, data indicative of a voice broadcast, labeled "talk" is encoded in packets, and other "data", as labeled, is interspersed within the talk data packets in accordance with protocol. This illustration, for example, the broadcast may be a real time broadcast of an athletic event, wherein the data packets include data indicative of the circumstances of the athletic event, such as the score of the game, or other circumstances. It should be understood that any desired protocol may be employed. Additionally the data is preferably compressed and encrypted such that subsequent decoding involves both decompression and de-encryption.

With reference to FIG. **8**, one preferred example of how the data packets are processed is illustrated. For example, data packets received by wireless communications device **12** are processed by processor **20**, and passed through at least one buffer. In the simplest embodiment of the present invention, only a single buffer is needed, such that all data packets are transmitted through the same buffer. However, in a preferred embodiment, multiple buffers or stacked memory are/is utilized, for the purpose of separating data packets corresponding to different features. For example, as illustrated in FIG. **8**, the processor **20** (or a data parser) transmits those packets containing data for displaying on a display of the wireless communications device to buffer **102**, while data indicative of sound (e.g., audio such as talk, music, etc.) are streamed through a sound buffer **104**. As illustrated, each of the buffers **102**, **104** have corresponding buffer locations, indicated as B_{dn}, for streaming data packets such as P_{dn} (for display data), or P_{sn} (for sound data). Additionally, as illustrated in FIG. **8**, each of the buffer locations of display buffer **102** may have a correspondingly associated input, designated by inputs **106** such that information displayed on a display may be associated with a particular input on the wireless communications device. In this regard, for example, when information indicative of an identifier of a source of the music or of an advertiser is displayed on the display, the corresponding input may be activated to establish a communications link with that source or advertiser. Alternatively, as will be appreciated, packets containing address or identification information, such as that packet labeled "A" in FIG. **7***a*, may be routed through yet an additional input buffer, wherein buffer storage locations within which the input buffer corresponding inputs on the wireless communications device **12**.

With reference to FIGS. **9***a*-**9***d*, display screens of wireless communications device **12**, in use, are illustrated. For example, in the illustration of FIG. **9***a*, data indicative of an artist, album, or recording data associated with a particular music recording being played by wireless communications device **12** is illustrated. Additionally, data indicative of a source of the music recording is illustrated and, preferably, positioned on the display in association with the corresponding keypad input, such that by pressing the keypad input **106** a communications link with the source will be initiated. It will be understood and appreciated that, in view of the foregoing discussion regarding data packets and buffer storage locations, that data indicative of an identifier of the source may be stored in a corresponding buffer location associated with the keypad input.

FIG. **9***b* is illustrative of a situation when an advertisement in a streaming audio signal is being output by the player, with corresponding data displayed on the display screen. In the example illustrated, the user is invited to order a large pizza from Pizza Hut. In accordance with the invention, the user may place an order during the advertisement by pressing a button corresponding with "order" display feature on the display. Again, this is accomplished through the positioning of data and corresponding memory location, where the data includes an identifier (such as an address or telephone number) for establishing a communications link with the advertiser. As is also illustrated, in the scenario in which a user of communications device **12** is receiving a real time streaming audio broadcast, data indicative of the real time streaming broadcast includes data indicative of the station or streaming source from which the broadcast is being received is transmitted, and stored in a particular memory or buffer storage location, and associated with a keypad input, such that the station may be contacted with a single entry. This is particularly useful for call-in shows, contests, making requests to the station, etc.

With additional reference to FIG. **9***c*, an example of real time streaming broadcast, in which music is being output along with corresponding data on the display, is illustrated. In accordance with an aspect of the present invention, data indicative of a site at which the particular music recording is being played (and/or it associated album or video) can be ordered is transmitted and associated with a particular input, as evidenced by "order" on the display at which location is associated with a particular keypad input on the wireless communications device. Accordingly, while listening to the music recording, an individual may activate the order key and be connected with a source for ordering that particular music recording. For example, the identifier or address associated with the "order" location may be the source of the streaming music, or alternatively, may be a remote music storage source, such as indicated by reference numeral **19** in FIG. **3**. Additionally, upon activation of the order key, either a data, a voice, or a combined voice/data link may be established with the source at which the music recording is to be purchased, and the purchase may be conducted in a purely electronic fashion, or by speaking with an operator. Preferably, such a link terminates the link with the streaming source, although terminating the initial link may not be necessary if there is sufficient bi-directional bandwidth available. Additionally, a selection of how the purchase is to be made could also be entered using wireless communications device **12**. For example, purchase may be made such that a complete copy of the sound recording (or its associated album) is downloaded to the memory **26** within wireless communications device **12**. Alternatively, the user can specify, either by input, or through a previously established account with the source at which the recording is being purchased, to have the music recording downloaded to a remote, personal storage unit, such as the personal storage unit **16** indicated in FIGS. **2** and **3**. Alternatively, the user may simply select to have the music recording located on a transferable medium, such as a CD or DVD, and courriered or mailed to a selected address of the user.

Additionally, as illustrated in FIGS. **9***b* and **9***c*, the contact information is preferably buffered or QUED in such a way that at least one additional, previous address or identifier is temporarily stored. For example, where the data first includes an advertisement from Pizza Hut (as in FIG. **9***b*), and then streams a recording by Jewel (as indicated in FIG. **9***c*), the data indicative of Pizza Hut is moved over one location on the display and associated with a different key, such that even after the Pizza Hut advertisement has concluded, a communications link with a Pizza Hut central source may still be made. It will be understood and appreciated that the QUE or buffer for retaining prior items associated with particular sets of data streams may also be retained in memory, although not displayed on the display, such that through utilization of a scroll feature previous items may be recalled.

FIG. **9***d* illustrates display of athletic contests, such as a football game. In accordance with the invention, and as described, as the user is listening to a broadcast of the athletic

contest, data indicative of the contest may be transmitted, according to a protocol for display on the display. In the example of FIG. **9***b*, the data includes the contestants in the contest, the amount of time remaining in the contest, and in the instance of a football game, a possession arrow to indicate which team has possession of the football, a score, and down, yards to go, and location of the line of scrimmage. It will be appreciated that other circumstances associated with athletic events, depending upon the nature and type of the event, may be displayed. Additionally, the information is periodically updated as additional data packets including data indicative of the real time circumstances of the game are transmitted.

In use, a user of communications device **12** may establish a communications link via the communications network with the remote storage facility **14**. In a preferred embodiment, the facility **14** has a uniform resource locator (URL) on a global communications network (such as the world-wide web), and device **12** accesses the facility **14** via a server in the communications network. Alternatively, device **12** may be utilized to dial directly a telephone number associated with the storage facility **14**. Using keypad input **22**, or microphone **32**, when storage facility **14** includes voice recognition equipment, the user may select one or more music recordings for downloading to the wireless communications device. If the selected recordings are already encoded, they are transmitted to the wireless communications device **12** via the communications network, and stored in memory **32**. Alternatively, if the selected recordings are not already encoded by encoder **58**, they are first encoded at the storage facility and then transmitted via the communications network to the communications device **12**.

As will by now be appreciated in view of the foregoing, the communications device **12** may also be used for retrieving one or more music recordings from a remote storage facility **14** for storage in a personal storage unit **16** of the user. As described, the personal storage unit **16** may be a memory storage location at an address on the global communications network and, indeed, may be located at the remote storage facility **14**. In such an instance, when a communications link with a remote storage facility **14** is established with wireless communications device **12**, the user can select whether he or she wishes to select new recordings, or enter his or her personal storage unit account for retrieval of recordings that have already been purchased.

In accordance with a preferred aspect of the present invention, the music recordings are encoded in data packets for transmission via a packet switched network. In particular, it is preferred that the wireless communications network be a next or third generation network, such that data transmissions are at sufficiently high speeds, and preferably greater than 50 KHz.

Once an encoded music recording is stored in memory **26**, or on a memory cartridge, of the wireless communications device **12**, the input **22** may be utilized to control the player to play the recording. In this regard, when a music recording is retrieved from memory for play, the player decodes the encoded data packet according to conventional steaming techniques in the buffer. The player outputs the music via speaker **34** or, in the event earplugs or headphones are connected to port **44** of communications device **12**, then the music is outputted via the headphones or earplugs.

In accordance with an aspect of the invention, information relating to a music recording is preferably transmitted along with music recording data for storage in memory **26**. For example, data indicative of the artist, the title of the recording, the album or CD from which the recording came, the recording label, the date of the recording, or any other desired information may be stored along with the recording at storage facility **14**, and transmitted for storage in memory **26**. Preferably, the informational data is stored as a header (e.g., in one or more integrally transmitted data packets) (See FIG. **1**), such that processor **20** outputs the information to display **24**. Alternatively, informational packets may be disseminated between packets containing music data. Additionally, it is an aspect of the present invention that each music recording stored at facility **14** has associated therewith data indicative of an electronic address of the facility **14**, which address data is also transmitted to the communications device **12** upon retrieval of a music recording. Communications device **12** is programmed such that, upon retrieval and playback of the recording, the data indicative of the address of the storage facility **14** is associated with a particular key or input on communications device **12** and may remain stored in a memory location associated with that key even after playback is completed (or until replaced with other data). Thus, the user of communications device **12**, upon opening the "player application", will be able to immediately establish a communications link with storage facility **14** by pressing the program key. In this regard, informational data indicative of the address, or indicating to the user that a particular key may be pressed to establish a quick communications link with the storage facility **14**, is preferably displayed on the display.

Alternatively, the present invention may be utilized to stream audio which is music or broadcast, in real time, from a streaming source. In such an instance, the streamed data is not stored in an internal memory of wireless communications device **12** or in a memory cartridge, but simply streamed through the buffer and played. As described, information indicative of that which is being streamed may be simultaneously output on a display of the communications device Particularly, contact information (e.g., a telephone number or electronic address) is preferably associated with an input such that an additional communications link may be established with a source or entity associated with the information. In the preferred embodiment described, for example, a user may establish a link with source of an advertisement for purpose of making a purchase. It should be understood and appreciated that the actual communications link made may be made through the streaming source (such as a radio station), or may be made through another remote site, such as a transaction clearing house. Additionally, it is contemplated that location information, such as may be obtained via an incorporated global positioning system unit, or by a network location determining feature, may be transmitted along with any signal such that the communications link may be routed, if desired, to a particular location. For example, in the instance of "Pizza Hut", which has a plurality of locations, the call may be routed to a nearest most Pizza Hut. Preferably, however, the call is initiated to a central location of Pizza Hut, or to a web site or answering service engaged by Pizza Hut and other entities for the purpose of taking orders. Additionally, it should be understood and appreciated that while the preferred input is a key on the telephone, or communications device **12** being employed, the input may be any other type of input, such as a voice activated input or a touch screen display, such as used on many conventional personal digital assistants.

From the foregoing description, it will be readily seen that a wide variety of other uses fall within the scope of the application. For example, in the preferred embodiment described, information indicative of the source at which a particular music recording being played is preferably associated with an input on the communications device **12**, such that activation of that input establishes a communications link with the source for the purpose of purchasing a music record-

ing. However, in accordance with an additional aspect of the invention, a concert schedule of the artist or group that recorded the song being played may be accessed at the source, for the purpose of buying concert tickets. Accordingly, upon hearing a particular song, a user of communications device **12** can activate a single input and establish a communications link with a source for purchasing concert tickets. It should be understood that the communications link may be a voice communications link or, alternatively, may be a voice and/or data communications link, such that the tickets may be purchased electronically. In particular, while the concert information may be available at the described source, it should be understood and appreciate that additional data may be encoded in the data stream, and associated with a different input, such that activation of a first input establishes a communications link with a first source at which the music recording may be purchased, while activation of a second input establishes a communications link with a second source at which concert tickets may be purchased. It should be understood that the purchasing features of the present invention may be utilized on wired or wireless PCs and computing stations as well as via wireless links. It should also be understood that, while the invention has been described with respect to music or sound recordings, various features of the invention are, applicable to recordings of other types, such as video recordings.

With reference now to FIG. **10**, an alternative embodiment of the present invention, is illustrated and described. In particular, in the embodiment of FIG. **10**, the wireless communications device **12** is incorporated in a vehicle. Thus, in such an instance, each of the components of the wireless communications device, such as the processor, memory, buffer, input, display, microphone, speaker, etc. may not be encased within the same housing. In fact, it is preferred that a plurality of speakers **122** are utilized, and spaced about the vehicle in a conventional fashion. Additionally, it is preferred that the memory **124** has much greater storage capacity than in a portable, handheld wireless communications device. In this regard, the memory may be one or more burnable CDs. The remaining aspect of this embodiment of the present invention is similar to those described above, and need not be reiterated here. In summary, the wireless communications device may be used to download selected, encoded music recordings and played via the vehicle speakers, or to stream a real time encoded broadcast. Preferably, the wireless communications device is also a voice communications device, such that voice connections may be made with the device, as well. It should be understood and appreciated that, in this vehicular embodiment, that a portable wireless communications device may be utilized in conjunction with in vehicle components, such that the wireless communications device communicates (such as by the cable connection) with one or more speakers, a storage unit, and/or an input.

From the foregoing it will be seen that this invention is one well adapted to attain all ends and objects hereinabove set forth together with the other advantages which are obvious and which are inherent to the structure.

It will be understood that certain features and subcombinations are of utility and may be employed without reference to other features and subcombinations. This is contemplated by and is within the scope of the claims.

Since many possible embodiments may be made of the invention without departing from the scope thereof, it is to be understood that all matter herein set forth or shown in the accompanying drawings is to be interpreted as illustrative, and not in a limiting sense.

What is claimed is:

1. A system comprising:

a source of digital media recordings;

wherein said source of digital media recordings is accessible via a communications network and stores and makes available for purchase a plurality of digital music recordings;

wherein said source of digital media recordings provides a menu for use in selecting said digital media recordings;

a mobile communications device having an operating system, wherein said mobile communications device is for wireless communication and comprises—

a processor,

a display,

a memory, and

an input;

said system further comprising a personal storage account associated with the user of said mobile communications device, wherein said personal storage account is accessible via a communications network;

wherein said source of digital media recordings processes a request, received from said mobile communications device, to purchase a digital music recording, wherein said request to purchase said digital music recording is input via said mobile communications device by a user of said mobile communications device;

wherein said system causes said purchased digital music recording to be transmitted to said mobile communications device;

wherein said purchased digital music recording is wirelessly received by said mobile communications device;

wherein said system identifies said purchased digital music recording in said personal storage account of the user;

wherein said source of digital media recordings receives, via said personal storage account of the user, a request input by the user to transmit to a computing device accessible by the user said purchased digital music recording that is identified in said personal storage account of the user;

wherein, based on said request to transmit said purchased digital music recording to the computing device, said system causes said purchased digital music recording to be transmitted to the computing device, and

wherein said system comprises a program that searches for a digital music recording of the user that is not associated with an address of a corresponding digital music file at said source of digital media recordings, finds a digital music file that corresponds with said digital music recording for which said program searched, retrieves information indicative of said found digital music file, and makes said found digital music file accessible, to said mobile communications device of the user, via said personal storage account of said user.

2. The system as set forth in claim **1**, wherein said system provides a choice to purchase said digital music recording as a single or as part of a digital music album on which said digital music recording is present.

3. The system as set forth in claim **1**, wherein said source of digital media recordings receives, from said mobile communications device, a selection of a digital music recording based upon a voice input into said mobile communications device.

4. The system as set forth in claim **1**, wherein said system further enables said mobile communications device to access said source of digital media recordings and select digital music recordings that are available for purchase or to access,

via said personal storage account of the user, digital music recordings that have already been purchased by the user from said source.

5. The system as set forth in claim **4**, said system further comprising a computing device for downloading the digital music recording that is purchased by the user from said source of digital media recordings using said mobile communications device and identified via the personal storage account of the user.

6. The system as set forth in claim **1**, wherein said system enables the user to select to play in said mobile communications device said digital music recording corresponding to said found digital music file, that is accessible via said personal storage account of the user, as said digital music recording corresponding to said found digital music file is received in said mobile communications device from said source of digital media recordings.

7. The system as set forth in claim **1**, said system further comprising a computing device, wherein said system further enables the user to select to play in said computing device said digital music recording corresponding to said found digital music file, that is accessible via said personal storage account of the user, as said digital music recording corresponding to said found digital music file is received in said computing device from said source of digital media recordings.

8. The system as set forth in claim **7**, wherein said mobile communications device further comprises functionality to receive voice inputs, wherein said system receives a voice input that is input into the mobile communications device by the user, and wherein a facility corresponding to said source of digital media recordings comprises voice response functionality.

9. The system as set forth in claim **1**, wherein said mobile communications device further comprises functionality to receive voice inputs, wherein said system receives a voice input that is input into the mobile communications device by the user, and wherein a facility corresponding to said source of digital media recordings comprises voice response functionality.

10. The system as set forth in claim **1**, wherein said system, in response to said receipt of said request to transmit said purchased digital music recording that is identified in said personal storage account to a computing device of the user, uses information indicative of a memory location of a file corresponding to said purchased digital music recording to access said file, at said source of digital media recordings, for transmitting said purchased digital music recording to the computing device.

11. The system as set forth in claim **1**, wherein said personal storage account of the user is accessible at said source of digital media recordings.

12. The system as set forth in claim **1**, said system further comprising a computing device for downloading the digital music recording that is purchased by the user from said source of digital media recordings using said mobile communications device and identified via the personal storage account of the user.

13. The system as set forth in claim **1**, wherein said mobile communications device further comprises a player application for playing digital music recordings, wherein said player application enables the user to initiate a wireless communications link with said source of digital media recordings.

14. The system as set forth in claim **1**, wherein said system further enables the user to select to have said digital music recording that is purchased from said source using said mobile communications device accessible to the user via said personal storage account of the user.

15. The system as set forth in claim **1**, wherein said system requires entry of a password before said system will transmit a digital music recording, that is accessible to the user via said personal storage account of said user, from said source of digital media recordings to a communications device associated with the user.

16. The system as set forth in claim **1**, wherein said purchased digital music recording that is wirelessly received by said mobile communications device is stored in said mobile communications device and is available in said mobile communications device for selection and play.

17. The system as set forth in claim **1**, wherein said purchased digital music recording that is transmitted to the computing device of the user is stored in the computing device.

18. The system as set forth in claim **1**, wherein said source of digital media recordings further comprises a source of concert tickets or passes, wherein said concert tickets or passes permit access into concert events, wherein said system provides concert schedules of artists, and wherein said system provides the ability for the user of said mobile communications device to purchase a concert ticket or pass, from said mobile communications device, electronically via a data link between said mobile communications device and said source of concert tickets or passes.

* * * * *

APPENDIX
TAB 5

US008843947B2

(12) **United States Patent**
Rolf

(10) **Patent No.: US 8,843,947 B2**
(45) **Date of Patent: Sep. 23, 2014**

(54) **DIGITAL MEDIA DISTRIBUTION SYSTEM AND METHOD**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(60) Provisional application No. 60/167,179, filed on Nov. 23, 1999.

(51) **Int. Cl.**

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H04N 21/20	(2011.01)
H04N 21/482	(2011.01)
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USPC **725/1**; 725/2; 725/37; 725/62

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USPC 725/86, 87, 91–93, 98, 99, 1, 2, 37, 62

See application file for complete search history.

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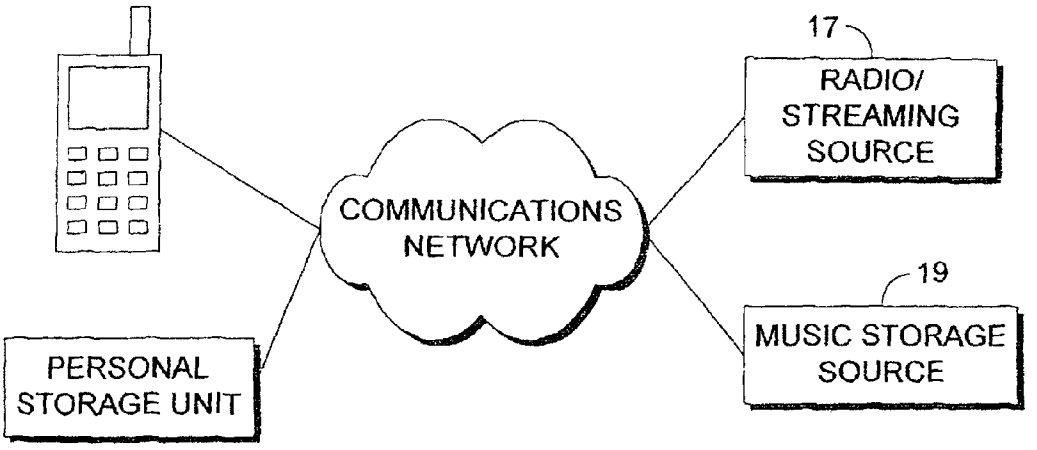
(57) **ABSTRACT**

A system and method employs an online site for making stored digital video recordings available for selection and download to a wireless communications device. Upon receipt of a selection for a digital video recording, the system and method causes the selected digital video recording to be wirelessly transmitted to the wireless communications device. The selected digital video recording is also made available to a personal computer associated with the user who made the selection. At least a title of the selected digital video recording is stored in a personal storage account of the user.

31 Claims, 4 Drawing Sheets



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RCE dtd. Oct. 10, 2007 submitting additional references in U.S. Appl. No. 11/437,137.
U.S. Appl. No. 11/437,137; Office Action; Dtd Jul. 26, 2006.
Response Dtd Oct. 12, 2006 to Office Action Dtd Jul. 26, 2006 in U.S. Appl. No. 11/437,137.
U.S. Appl. No. 11/437,129; Office Action; Dtd Jan. 9, 2008.
Preliminary Amendment Dtd. Nov. 9, 2006 in U.S. Appl. No. 11/437,140.
U.S. Appl. No. 11/437,140; Office Action; Dtd Aug. 24, 2007.
Response dtd Nov. 30, 2006 to Office Action dtd Aug. 1, 2006 in U.S. Appl. No. 11/437,138.
Response dtd May 16, 2007 to Office Action dtd Mar. 8, 2007 in U.S. Appl. No. 11/437,138.
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Preliminary Amendment dated Aug. 19, 2005, in U.S. Appl. No. 09/721,120, filed Nov. 22, 2000; First Named Inventor: Rolf, Devon A.
Amendment and Request for for Reconsideration dated Apr. 3, 2006, in U.S. Appl. No. 09/721,120, filed Nov. 22, 2000; First Named Inventor: Rolf, Devon A.
Advisory Action Before the Filing of an Appeal, dated Jul. 7, 2011, in U.S. Appl. No. 11/437,121, filed May 18, 2006; First Named Inventor: Rolf, Devon.
Amendment dated Apr. 15, 2011, in U.S. Appl. No. 11/437,121, filed May 18, 2006; First Named Inventor: Rolf, Devon A.
Amendment dated Jun. 30, 2009, in U.S. Appl. No. 11/437,121, filed May 18, 2006; First Named Inventor: Rolf, Devon A.

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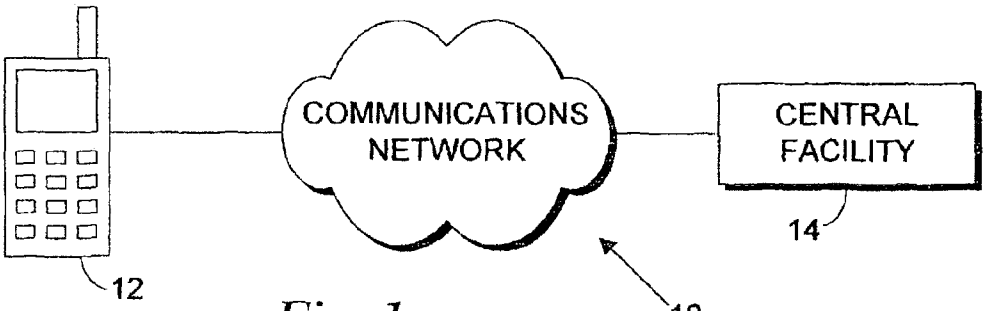

Fig. 1.

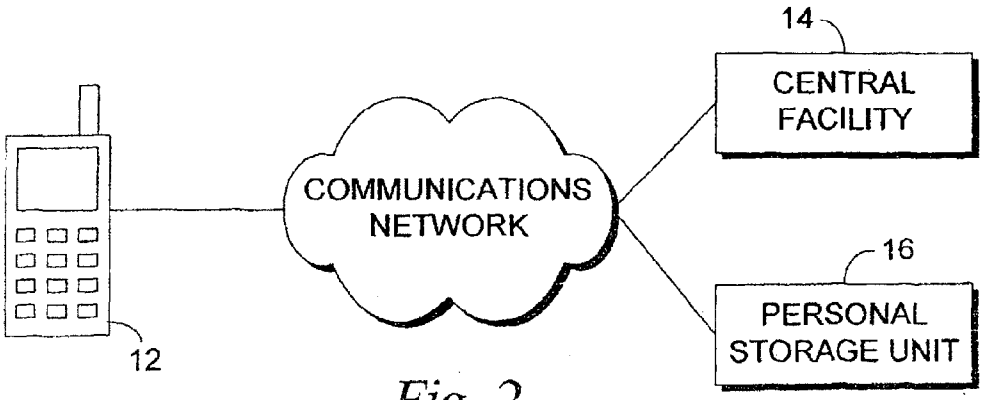

Fig. 2.

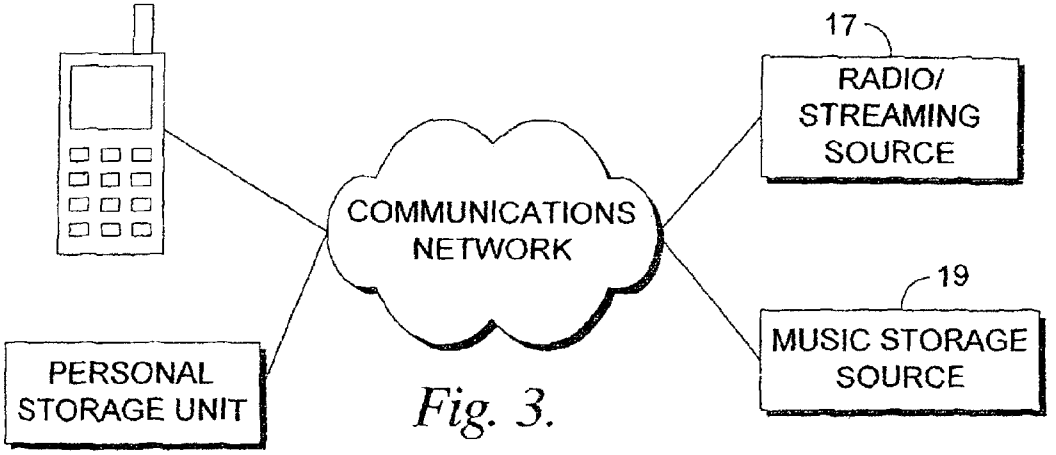

Fig. 3.

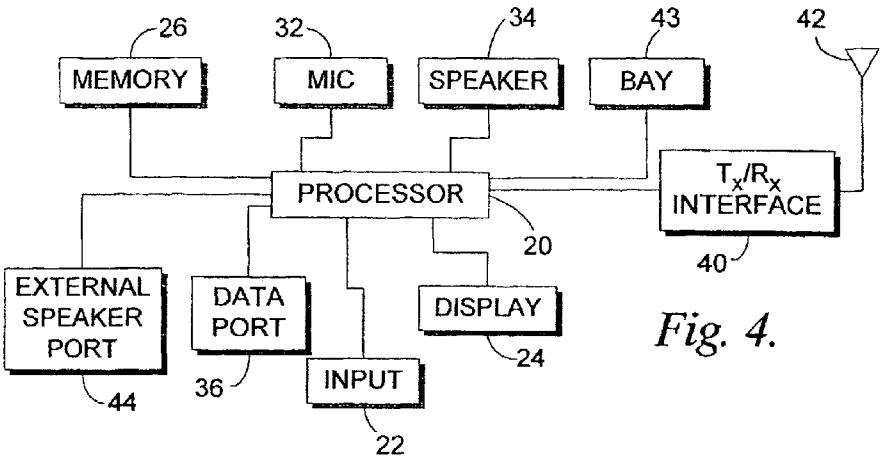

Fig. 4.

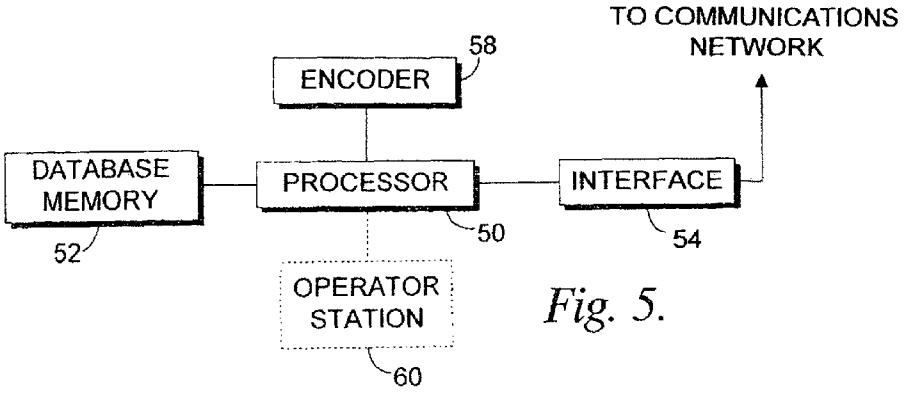

Fig. 5.

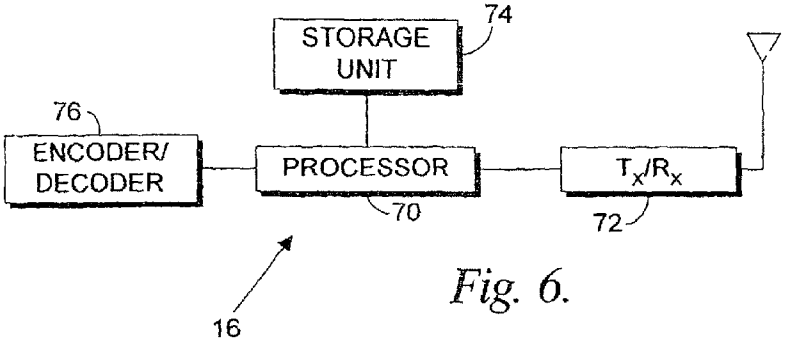

Fig. 6.

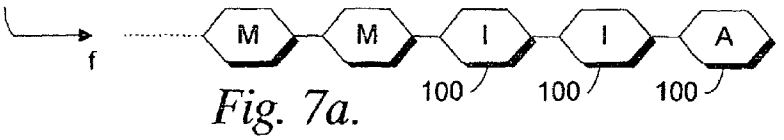

Fig. 7a.

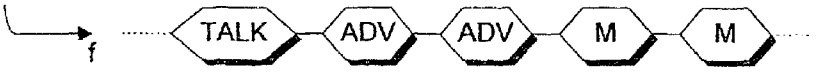

Fig. 7b.

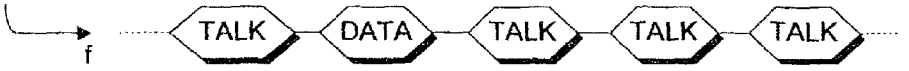

Fig. 7c.

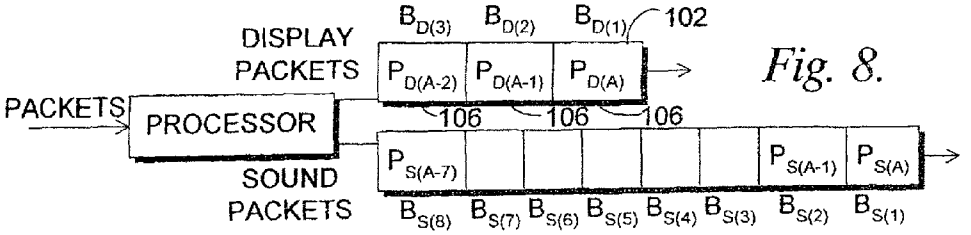

Fig. 8.

ARTIST:
JEWEL

ALBUM:
THIS IS IT

RECORDED:
XX-XX-XX

SOURCE

Fig. 9a.

ORDER A LARGE
PIZZA FROM
"PIZZA HUT"
NOW

STATION CDNOW ORDER

Fig. 9b.

Fig. 9c.

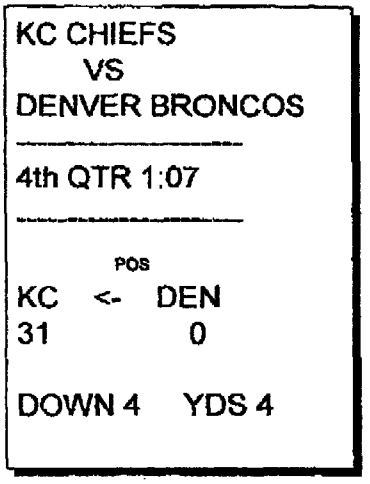

Fig. 9d.

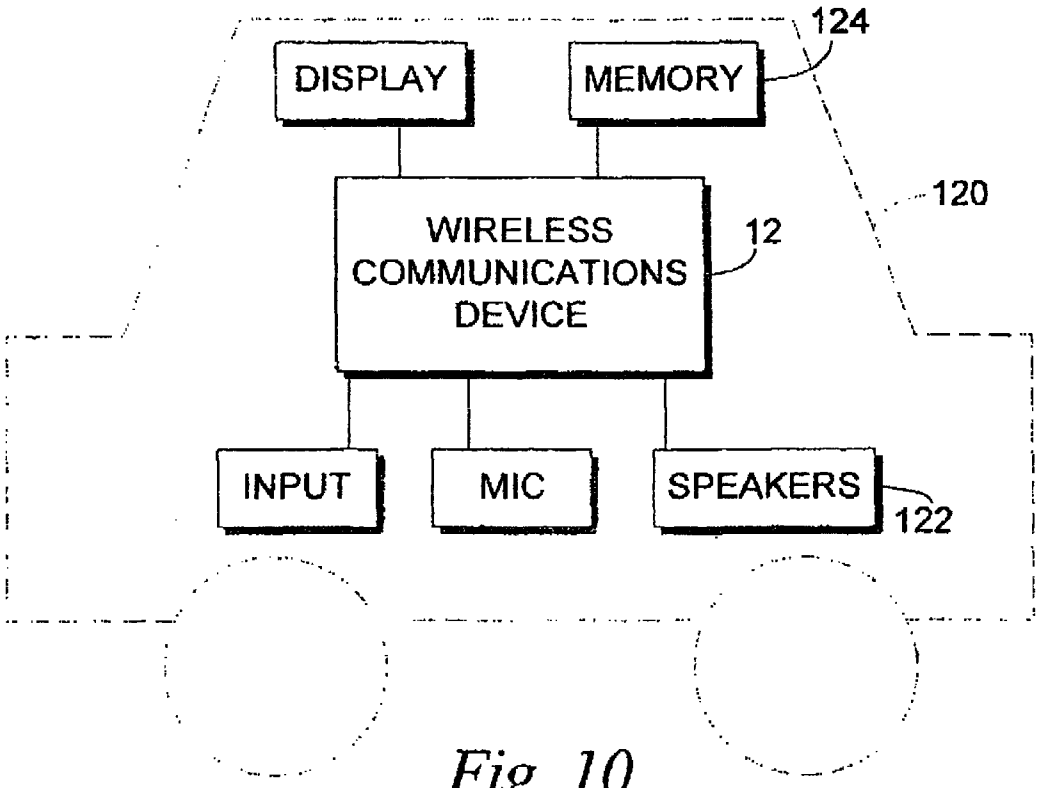

Fig. 10.

DIGITAL MEDIA DISTRIBUTION SYSTEM AND METHOD

RELATED APPLICATIONS

This continuation application claims priority benefit, with regard to all common subject matter, of earlier-filed U.S. patent application Ser. No. 11/437,121, filed May 18, 2006, entitled Digital Media Distribution System ("the '121 application"). The '121 application is a continuation application and claims priority benefit, with regard to all common subject matter, of earlier-filed U.S. patent application Ser. No. 09/721,120, filed Nov. 22, 2000, now U.S. Pat. No. 7,065,342, and entitled System, Method and Device for Playing Recorded Music on a Wireless Communications Device ("the '342 patent"), which claims priority benefit of U.S. Provisional Application No. 60/167,179, filed Nov. 23, 1999, entitled System, Method and Device for Playing Recorded Music on a Wireless Communications Device. The above-referenced patent applications and patent are hereby incorporated by reference in their entirety.

BACKGROUND

1 .Field

The present invention is generally directed to a system and method for wirelessly transmitting encoded music, via a wireless communications link, to a portable or mobile communications device which includes a player for playing the music or audio.

SUMMARY

In one embodiment, the present invention is a system for transmitting encoded music from a remote, central facility to a wireless communications device, such as a cellular telephone or personal digital assistant. In particular, a user of the cellular telephone (for example) may use the telephone to establish a wireless communications link with the remote, central facility, and then wirelessly download one or more selected music recordings for storage in a memory of the cellular telephone. In particular, the selected music recording (s) is/are transmitted via a wireless data communications link to the cellular telephone. Preferably, the music recordings are encoded and transmitted in packets, and may particularly be encoded by a compression algorithm into an encoded (such as MP3 or other) format.

Using an input of the cellular telephone, a user may select one or more recordings for transmission to the cellular telephone. The selected music recordings, upon receipt by the cellular telephone, are stored in a memory. In one embodiment, the memory is an internal memory. Alternatively, the memory may be a separate cartridge or memory stick (such as a flash memory cartridge) for movable installation in a bay on the telephone. A player within the cellular telephone may then be initiated to play the music recordings, for output on a speaker. In particular, the speaker may include earphones or earplugs connected to a port on the cellular telephone. Alternatively, the player may output the music through an internal speaker of the cellular telephone.

In an alternate embodiment, the wireless communications device is utilized in combination with a vehicle, and a player, a memory for storing the music, and at least one speaker, are located within the vehicle, such that selected recordings may be retrieved from the remote central facility, and played in the vehicle. In this embodiment, the memory may include one or more burnable CDs, and will typically have far more memory storage capacity than the memory of the cellular telephone, which is utilized in the previous embodiment.

In either embodiment, the wireless communications device preferably includes a buffer for streaming data indicative of the music. Additionally, the wireless communications device is preferably a cellular communications device and, in particular, is a cellular voice communications device, such as a cellular telephone.

In accordance with yet an additional aspect of the present invention, the wireless communications device of the present invention (whether it be handheld or installed within a vehicle) retrieves recorded music from a personal storage unit of the user. For example, a user may have a CD tower, flash memory unit, etc. in his or her home or apartment, or may have a personal storage account at a central facility. A plurality of recordings may be stored in the personal storage unit. The personal storage unit is accessible via a wireless communications link from the wireless communications device, to thereby enable the retrieval of selected music from the user's own storage facility. Additionally, such a system permits the user to easily mix recordings from a number of different recordings from his or her own storage unit.

Thus, the system of this embodiment of the present invention utilizes the central facility having music recordings stored therein, a personal storage facility located remotely from the central facility, such as in the residence of a user, and the wireless communications device. In this embodiment, when a user selects one or more recordings from the central facility, rather than the recordings being transmitted to the wireless communications unit directly via a wireless communications link, they are rather transmitted to the personal storage unit of the user. Once stored in the personal storage unit, the user can then access his or her personal storage facility via a wireless communications link for retrieving, via the wireless communications link, one or more selected recordings. In accordance with this embodiment of the present invention, the encoded music transmitted to the personal storage unit may be stored in a flash memory or, alternatively, may be stored on burnable CDs or any suitable storage medium. In this regard, the encoded music transmitted to the personal storage unit of the user may be decoded, for storage in a decoded manner such that it may be played by more traditional music players or, alternatively, may be stored directly in its encoded format. When stored in a decoded format, music recording is again encoded at the personal storage unit upon retrieval. The personal storage unit may be located at the central location or at a remote site or may comprise a personal computer or an entertainment center, including such components as a display screen (e.g., TV or information TV), stereo, speakers, etc, or as stated, an account at a storage location. It should be understood that wirelessly retrieving a recording from a personal storage unit that is located in physical proximity to the user (e.g., an entertainment center, TV, personal computer, etc.) may be accomplished either by connection with a wide area communications network, or alternatively, by a local area wireless connection or protocol, such as Bluetooth and other such technologies.

It should be understood that the transmittal of the recording to the personal storage account may embody transmitting only a portion of the recording, such as the title and memory (e.g., address) storage location of the recording, such that the personal storage account serves as a directory or index for retrieval of acquired or accumulated recordings. In this regard, the recordings may be stored in a contained database, or may be located at multiple storage sites dispersed within a network. In either case, each recording will have a pro-

grammed address to which the personal storage account will point for a corresponding recording. Upon access to the personal storage account by the account holder (via a communications device), and after entry of any required passwords, the user may select one or more recordings for streaming or download, whereupon the recording(s) will be retrieved. Temporary copying/cloning techniques may be used to insure at least substantially simultaneous accessibility to the recording by a large number of users.

In accordance with an additional aspect of the present invention, information pertaining to the music recording, such as the artist, title of the recording, an album from which the recording came, the date of the recording, etc. is also transmitted with the recorded music, such that the informational data is displayed on a display of, or associated with, the wireless communications device when the particular recording is being played. Additionally, it is an aspect of the present invention that an identifier, such as a server address, associated with the remote central facility is encoded along with the transmitted data, such that a selected input on (or associated with) the wireless communications device may be pressed for automatically reconnecting with the central facility or personal storage unit.

In preferred embodiments of the present invention, the wireless communications link established between the wireless communications device and the central facility is a cellular communications link and, more particularly, is an Internet link. In other words, the encoded music and/or informational data is preferably transmitted via a packet switch network, and particularly is preferably transmitted at transmission speeds greater than 50 KHz, such as by a next- or third-generation wireless communications network.

In accordance with yet an additional object of the present invention, the music recordings transmitted to the wireless communications device from the central storage facility, or from the personal storage unit of the user, may be transmitted in a real, or substantially real, time basis. In other words, rather than downloading one or more recordings to a memory within the wireless communications device, encoded music may be streamed directly from its source, for input into a buffer within the communications device, and for play at the communications device, without being otherwise stored in the device. In other words, the music is played as it is streamed from the central storage facility or personal storage unit of the user.

In accordance with yet an additional aspect of the present invention, the wireless communications device receives a sound stream from a source, where the sound stream is in a real time broadcast. For example, a radio broadcast may be encoded and transmitted via a wireless communications link to the wireless communications device. The broadcast may, for example, be a broadcast of music or, preferably, is a traditional radio-type broadcast having transmission of recorded music, advertisements, and voice from one or more disc jockeys. Accordingly, the source (e.g., radio station) may have a plurality of inputs for inputting stored music, stored advertisements, or real time voice from a disc jockey. The input information is encoded (if not already encoded) and transmitted to the wireless communications device via an established communications link. In particular, the data stream is a stream of data packets which are streamed through a buffer of the wireless communications device for decoding and play.

In accordance with the particular aspect of this embodiment of the invention, informational data associated with music or advertising being transmitted is displayed on the display. More particularly, information transmitted to the wireless communications device may be associated with a particular input on the device, such that a communications link corresponding to the displayed information may be made. For example, when a music recording is being played at the wireless communications device, data indicative of that recording may be displayed on the display, and, additionally, a selected key on the wireless communications device may be pressed to transmit a signal to the source of the stream that the user of wireless communications device wishes to purchase the music recording. Alternatively, the signal may be transmitted to a remote music storage facility for effecting a purchase of the recording or its associated album. In this regard, the purchase can be conducted in an electronic input mode or, alternatively, a link may be established for transmitting voice communications to and from the source or music storage facility (as the case may be) at which the sound recording or its associated album is to be purchased. In making the purchase, the user may select whether to have the sound recording or its associated album downloaded to the wireless communications device (if memory space permits), or to a remote personal storage unit or account of the user, or to have the sound recording or album stored on a storage medium and transmitted to an address of the user by mail or courier. In accordance with an additional aspect of the invention, payment for the sound recording or album may be made at the time or, alternatively, a monetary amount corresponding to the purchase may be billed to a periodic invoice associated with the wireless communications device (such as a telephone bill).

As another example of utilization of the present invention, information corresponding to an advertiser may be displayed on a display screen during an advertisement, and an identifier (such as an electronic address or telephone number) may be associated with a particular key on the communications device, such that activation of the key establishes a voice and/or data communications link with the advertiser, such as for the purpose of making a purchase of goods or services advertised. Additionally, and preferably, an identifier (such as an address or telephone number) associated with the radio station or streaming source is allocated to a particular key, such that the user may contact the source and transmit information thereto, or have a voice conversation with the source. This is particular advantageous for responding to call-in shows, trivia contests, games, etc. sponsored by the source/radio station.

As another example of the transmission of sound and information, the broadcast from the source may be a real-time broadcast of an athletic event, broadcast by one or more announcers. The voice signals of the announcer is encoded and transmitted to the wireless communications device **12**. Additionally, information corresponding to the athletic event being broadcast may be transmitted and displayed on the display. For example, the contestants, the scorer of the contest, the time remaining, and other circumstances relating to the game may be transmitted and stored. Preferably, this informational data is periodically transmitted, so as to update the display.

BRIEF DESCRIPTION OF THE DRAWINGS

The objects and features of the invention noted above are explained in more detail with reference to the drawings, in which like reference numerals denote like elements, and in which:

FIG. **1** is an illustration of a system of a first embodiment the present invention;

FIG. **2** is an illustration of a system of a second embodiment of the present invention;

FIG. **3** is an illustration of a system of a third embodiment of the present invention;

FIG. **4** is a block diagram of a conventional wireless communications device utilized in accordance with the principles of the present invention;

FIG. **5** is a block diagram of a central facility of the present invention;

FIG. **6** is a block diagram of a personal music storage unit of the present invention;

FIGS. **7***a*-**7***c* are exemplary illustrations of how data is transmitted in packets;

FIG. **8** is an illustration of streaming data through one or more buses in accordance with the invention;

FIGS. **9***a*-**9***d* illustrate screen displays in accordance with the present invention; and

FIG. **10** is an illustration of a vehicular communications system for playing music in accordance with the principles of the present invention.

DETAILED DESCRIPTION

With reference initially to FIG. **1**, a system of the present invention for playing encoded music on a wireless communications device is denoted generally by reference numeral **10**. In particular, system **10** has a wireless communications device **12**, such as a cellular telephone. Preferably, wireless communications device **12** is a digital, cellular communications device, and is portable and handheld. In this regard, while one preferred communications device is a telephone, it should be understood that the wireless communications device may be types of devices, such as a palm or handheld computing device having wireless communications capabilities.

A communications link may be established between wireless communications device **12** and a remote storage facility, denoted by reference numeral **14**. The remote storage facility may, for example, be at an address on the world wide web, and includes a data base having a plurality of music recordings therein. Preferably, the music recordings are categorized by a plurality of selectable fields, such as "title", "artist", "album or CD type", "recording label", etc. Additionally, the music recordings are preferably encoded in an encoded format, such as MP3 (Mpeg-1 Audio layer 3). It will be understood that the music recordings may be encoded in other formats or, alternatively, may not be encoded at all. In this latter instance, remote storage facility **14** also includes an encoder (not shown in FIG. **1**) for encoding a recording when it is selected to enable it to be efficiently transmitted via a communications network **18**.

As will become apparent from the detailed discussion below, the wireless communications device **12** may be utilized to establish a communications link with the remote storage facility **14**. Then, using a keypad and input on the wireless communications device, or by voice commands, one or more selected music recordings may be retrieved from the storage facility **14**, for transmission, via wireless communications link, to the device **12**. As will become apparent from the detailed discussion below, the retrieved music recording or recordings may be stored in a memory within the communications device **12**, on a memory cartridge or stick insertable into the device **12** or, alternatively, may simply be strung through a buffer of the device **12** for playback, and no stored at the device **12**.

With additional reference now to FIG. **2**, an alternate embodiment of the present invention is illustrated and described.

In the embodiment of the present invention illustrated in FIG. **2**, a wireless communications device **12** communicates with a central facility **14** for retrieval of one or more stored music recordings. Also in this embodiment, in addition to the wireless communications device **12**, and central facility **14**, the system **10** of the present invention further includes a personal storage unit **16**. However, in this embodiment, the retrieved recordings (after being encoded if necessary) are not transmitted directly to the wireless communications device **12**, but are transmitted via a personal storage unit or account **16** of the user. It should be understood that the communications link between the central facility **14** and personal storage unit **16** may be either hard wired or wireless. In this regard, the personal storage unit **16** may be an account located at the facility **14**, or remotely therefrom. The storage unit for storing music recording may, for example, be in a home or residence of the user of wireless communications device **12**. As will be discussed in greater detail below, in this embodiment, one or more selected music recordings are transmitted to the selected, personal storage unit **16** of the user. Subsequently, the user of wireless communications device **12** establishes a wireless communications link with the personal storage unit **16** for retrieving selected music stored therein.

In accordance with yet an additional aspect of the invention, a music recording desired to be played on wireless communications device **12** need not be fully stored within the device **12**. In this regard, for example, a music recording stored in central facility **14** or personal storage unit **16** may be streamed to the wireless device **12** via an established communications link. In such an instance, data packets are streamed through a buffer for play by a player each of which are in a memory **26** (see FIG. **4**), such that, as one data packet is played within the buffer, and then exits the buffer, an additional data packet is streamed into the buffer.

With reference to FIG. **3**, and in accordance with an alternate embodiment of the invention, a source of streaming audio **17**, such as radio station broadcasting signals, may transmit an audio stream to device **12**. Wireless communications device **12** may be utilized to establish a link with the radio station source **17**, for receiving an encoded stream of data indicative of the transmission of the radio station. In such an embodiment, the encoded stream of data packets are passed through a buffer for play by a player (see FIG. **4**), thereby making wireless communications device **12** a digital radio for receiving streams of encoded audio data.

Additionally, and in accordance with a particular aspect of the present invention, in addition to the audio data transmitted to the communications device **12**, informational data is also sent for display on display **24**. As will be appreciated, in view of the foregoing discussion, that informational data may be stored in packets and, preferably, is stored in packets that are transmitted at the beginning of a particular recording, or packets that are periodically spaced within a set of other packets. Thus, for example, when a particular music recording is played by the radio station, and output at the wireless communications device **12**, data indicative of the music recording is displayed on display **24**. In accordance with a particular aspect of the present invention, at least a portion of that informational data is associated with a selected input on communications device **12**, such that upon activation of the input, the user of communications device **12** may order (for purchase) an authorized copy of the recording, or the album upon which the recording is placed. In this regard, upon activation of the key associated with the informational data, in

one embodiment, while pressing the key associated with the selected information, data indicating that the user desires to make a purchase is transmitted to the station/source **17** or other facility. It should also be understood that the informational data may be retained at the server which is sourcing the recording, such that activation of a selected input causes a signal to be transmitted to the server, the receipt of which is matched with the information pertaining to the recording being transmitted. In any case, the purchase can be effected via the station/source **17** or other site, such as indicated by music storage source **19**, either through appropriate inputs on the communications device **12**, or by establishment of a voice communications link with the central facility **14**.

In addition to the user having a choice of whether to buy the single being played, or the entire album on which the single is located, the user also has the opportunity to select the manner in which the purchased recording or album will be distributed to the user. For example, the purchased recording or album may be downloaded to the wireless communications device **12** (if memory space suffices) or, alternatively, may be downloaded to the user's personal storage unit **16**. Alternatively, the user can select to have a storage medium upon which the music is recorded (such as a CD, for example) mailed to a selected address of the user.

Accordingly, the present invention provides a very unique feature for the distribution and purchasing of music recordings, by allowing an individual to make a purchase of a recording and/or its associated album upon hearing the recording.

In accordance with yet an additional aspect of the present invention, as the radio station transmits audio advertising content, informational data indicative of the advertiser is displayed on display screen **24**. In particular, data indicative of a URL or telephone number is preferably associated with a particular key on the communications device **12**, such that by pressing the associated key, a communications link (either data or voice) is established with the source of the advertising. Thus, for example, during an ad for "Pizza Hut", a particular button may be pressed to establish a communications link with a telephone number or address associated with Pizza Hut, for the purpose of ordering a pizza. In this embodiment, the communications device **12** preferably has an additional buffer for buffering the informational display data. Moreover, in a preferred embodiment, data indicative of a plurality of most recent advertisements is preferably stored in the buffer, and associated with a corresponding number of inputs or a menu driven system, such that, sources associated with the most recent advertisements may be readily contacted.

It is contemplated within the scope of the present invention that a server for accessing content transmitted by the radio station may be a satellite server as well. In other words, the communications link may or may not include a satellite communications link.

With additional reference to FIG. **4**, wireless communications device **12** has a processor **20**. Connected to processor **20** are an input (such as a keypad **22**), a display **24**, a memory **26**, a microphone **32**, a speaker **34**, and a port **36**. Additionally, a DTMF encoder/decoder (or just an encoder, if desired) **38**, and a transceiver **40**, and antenna **42** are connected as shown. Additionally, wireless communications device may have a bay **43** for receiving a memory cartridge or stick, such as a flash memory unit. Furthermore, device **12** has an external speaker port (e.g., for ear plugs or headphones) **44**. The construction of conventional wireless communications devices, such as cellular phones, is well known. However, in accordance with the present invention, a buffer and a player for playing encoded music through an internal speaker, or via headphones or earplugs connected to a speaker port, such as port **44** are provided. In accordance with the invention, the player is a set of encoded instructions, stored in a memory **26**, for decoding and playing recorded, encoded music as it is streamed through a buffer. Additionally, device **12** may have a bag or port for receiving a memory cartridge or stick, such that recordings may be stored on a removable memory device, and such that recordings played by the player are retrieved from the cartridge or stick.

In this regard, the wireless communications device **12** may be provided from a manufacturer with a player already installed in the device **12**. Alternatively, the player may be loaded into the communications device **12** by an end user of the device. In this regard, and in accordance with an aspect of the invention, a user of communications device **12** may establish a communications link with a central facility, such as storage facility **14**, and utilizing inputs on the device, such as a keypad, or a microphone (where the inputs are by voice), make appropriate selections for retrieving an encoded player for storage in the communications device **12**. In this regard, when such a selection is made, the set of instructions comprising the player are themselves preferably encoded (if they are not already encoded), and transmitted via the wireless communications link to communications device **12**, for storage in memory. Accordingly, it is a particular aspect of the invention to wirelessly load a set of instructions, and particularly a music player for decoding encoded, recorded music, into a wireless communications device, such as a cellular telephone or communications equipped palm computing device, such as a portable digital assistant. As part of the invention, data indicative of the type of operating system installed within communications device **10**, and/or memory storage limitations, may be transmitted to central facility **14** for use in selecting a player from a plurality of players.

In accordance with another aspect of the invention, any charges associated with downloading a player (which would preferably be free) and/or loading recordings may be charged directly to a periodic invoice associated with the wireless communications device, and particularly associated with other services (such as telephone services) associated with the wireless communications device **12**. Alternatively, and in accordance with an aspect of the invention, subscriptions may be established such that a user of communications device **12** may have unlimited or a selected amount of access to the music stored at remote facility **14** so long as a periodic subscription fee is paid. For example, for a selected periodic subscription fee, a selected number of recordings (or albums) may be retrieved. Beyond the selected number within the period, additional fees would be incurred. In this regard, and in accordance with the particular aspect of the invention, the subscription fee is invoiced together with other charges associated with services for usage of the wireless communications device **12**. Alternatively, purchases may be accounted for via electronic transmission of an account number of the user, or in more traditional manners.

With reference initially to FIG. **5**, a block diagram of the central facility **14** is illustrated and described.

In particular, a central facility **14** has a processor **50**. Connected to the processor **50** are a data base memory **52** and a interface **54** (such as a transceiver or modem) for transmitting and receiving communications signals. In addition, the central facility **14** may also have an encoder **58** and an operator station **60**. The encoder **58** is a set of processing instructions stored in a memory for encoding music recordings stored within data base memory **52**. In particular, when wireless communications device **12** accesses the central facility **14** via the communications network for purpose of retrieving one or

more selected recordings, the encoder **58** may be utilized to encode the music, according to any preferred encryption and/or compression algorithm (such as mp3, liquid audio, etc.), for transmission of the encoded recording(s) to the wireless communications device **12**. Alternatively, the music recording stored within data base memory **52** may be stored in an encoded/compressed manner, such that the encoder **58** is not necessary. While the operator station **60** is not necessary, it may be provided for allowing the user of wireless communications device **12** to have a voice conversation with an operator employed at the operator station **60**. As will be appreciated, in the absence of an operator, processor **50** invokes application software for providing a menu driven system to wireless communications device **12**, such that the wireless communications device **12** can be utilized to select recording via a menu or listing of recordings. Alternatively, the central facility **14** may be equipped with a voice response system, such that an individual at wireless communications device **12** makes necessary entries/selections via voice commands.

With additional reference to FIG. **6**, a personal storage unit **16** is illustrated and described.

Personal storage unit **16** has a processor **70**. Connected to the processor **70** is interface **72** (such as a transceiver or modem). The personal storage unit **16** also includes a storage unit **74**, such as a CD ROM tower, flash memory, or other storage medium, etc., for storing music recordings. Additionally, the personal storage unit **16** may include a decoder/encoder **76** which is a series of software instructions for decoding and encoding music recordings. In this regard, and in accordance with the embodiment (as set forth in FIG. **2**) in which the wireless communications device is utilized to retrieve selected recordings from central facility **14** for storage in the personal storage unit **16**, the encoded music received from central facility **14** at the personal storage unit **16** may first be decoded prior to storage in the storage unit **16**. In such an instance, upon retrieval of a selected recording from the personal storage unit **16** for play at the wireless communications device **12**, the encoder first encodes a retrieved recording for wireless transmission to the wireless communications device **12**. Alternatively, it should be understood and appreciated that the encoded music received by the personal storage unit **16** may be stored in an encoded fashion, such that the decoder/encoder is unnecessary.

In accordance with one aspect of the invention, personal storage unit **16** may also be a memory storage location at the central facility **14**, or other remote site. In this way, a user of device **12** may have a personal account for storing recordings, such that the account (e.g., personal storage unit **16**) is accessible via device **12** and other devices (such as a personal computer). As described above, a personal storage account may store only selected information pertaining to a recording, such as a title and an address or memory location of the recording, such that a recording may be retrieved through a corresponding account listing by accessing and/or retrieving the remote file containing the selected recording. It is also specifically contemplated that such a personal storage account system may employ a file sharing program such that the listings in the account do not include corresponding addresses, but that the file sharing program merely searches for an approved (based upon defined standards) copy of the recording, and then retrieves the recording once found. Alternatively, the personal storage account may include a last known address of a selected recording and, when that address no longer contains the recording, a search for an approved version of the recording is made and, when found, the last known address is updated. As will be appreciated, use of a common database or a network-oriented file sharing approach, accessible via a personal storage account, conserves storage space since it does not require a single copy of the recording for each user that acquires the recording.

With reference now to FIG. **7**, a representative example of how data packets are transmitted in accordance with a protocol of the present invention is illustrated. In particular, with reference to FIG. **7***a*, data is transmitted in a plurality of data packets **100**. In particular, for example, the first set of data packets, including one or more packets **100**, may include information pertaining to an identifier or address associated with a source of the streamed data. In the example of FIG. **7***a*, the packet is marked with a "A", and is an initially transmitted packet. Additional packets may contain information pertaining to a music recording being transmitted, and as illustrated in FIG. **7***a*, any such packets are designated by a "I". The remainder of the packets include data indicative of the music recording being transmitted, and are labeled "M". In the example of FIG. **7***a*, the address identifier and the information pertaining to the music recording are transmitted first, and thus serve as a header. It will be understood and appreciated that the address and/or information data may be transmitted to other locations within the data stream.

In the example of FIG. **7***b*, a real time data stream is illustrated. As illustrated, the data stream includes music, followed by data indicative of an advertisement (and labeled ADV), followed by data packets indicative of talk. Such a data stream would be representative of the real time radio broadcast, including music, advertising, and talk from a disc jockey or host.

In the example of FIG. **7***c*, data indicative of a voice broadcast, labeled "talk" is encoded in packets, and other "data", as labeled, is interspersed within the talk data packets in accordance with protocol. This illustration, for example, the broadcast may be a real time broadcast of an athletic event, wherein the data packets include data indicative of the circumstances of the athletic event, such as the score of the game, or other circumstances. It should be understood that any desired protocol may be employed. Additionally the data is preferably compressed and encrypted such that subsequent decoding involves both decompression and de-encryption.

With reference to FIG. **8**, one preferred example of how the data packets are processed is illustrated. For example, data packets received by wireless communications device **12** are processed by processor **20**, and passed through at least one buffer. In the simplest embodiment of the present invention, only a single buffer is needed, such that all data packets are transmitted through the same buffer. However, in a preferred embodiment, multiple buffers or stacked memory are/is utilized, for the purpose of separating data packets corresponding to different features. For example, as illustrated in FIG. **8**, the processor **20** (or a data parser) transmits those packets containing data for displaying on a display of the wireless communications device to buffer **102**, while data indicative of sound (e.g., audio such as talk, music, etc.) are streamed through a sound buffer **104**. As illustrated, each of the buffers **102**, **104** have corresponding buffer locations, indicated as B.sub.dn, for streaming data packets such as P.sub.dn (for display data), or P.sub.sn (for sound data). Additionally, as illustrated in FIG. **8**, each of the buffer locations of display buffer **102** may have a correspondingly associated input, designated by inputs **106** such that information displayed on a display may be associated with a particular input on the wireless communications device. In this regard, for example, when information indicative of an identifier of a source of the music or of an advertiser is displayed on the display, the corresponding input may be activated to establish a communications link with that source or advertiser. Alternatively, as

will be appreciated, packets containing address or identification information, such as that packet labeled "A" in FIG. **7***a*, may be routed through yet an additional input buffer, wherein buffer storage locations within which the input buffer corresponding inputs on the wireless communications device **12**.

With reference to FIGS. **9***a*-**9***d*, display screens of wireless communications device **12**, in use, are illustrated. For example, in the illustration of FIG. **9***a*, data indicative of an artist, album, or recording data associated with a particular music recording being played by wireless communications device **12** is illustrated. Additionally, data indicative of a source of the music recording is illustrated and, preferably, positioned on the display in association with the corresponding keypad input, such that by pressing the keypad input **106** a communications link with the source will be initiated. It will be understood and appreciated that, in view of the foregoing discussion regarding data packets and buffer storage locations, that data indicative of an identifier of the source may be stored in a corresponding buffer location associated with the keypad input.

FIG. **9***b* is illustrative of a situation when an advertisement in a streaming audio signal is being output by the player, with corresponding data displayed on the display screen. In the example illustrated, the user is invited to order a large pizza from Pizza Hut. In accordance with the invention, the user may place an order during the advertisement by pressing a button corresponding with "order" display feature on the display. Again, this is accomplished through the positioning of data and corresponding memory location, where the data includes an identifier (such as an address or telephone number) for establishing a communications link with the advertiser. As is also illustrated, in the scenario in which a user of communications device **12** is receiving a real time streaming audio broadcast, data indicative of the real time streaming broadcast includes data indicative of the station or streaming source from which the broadcast is being received is transmitted, and stored in a particular memory or buffer storage location, and associated with a keypad input, such that the station may be contacted with a single entry. This is particularly useful for call-in shows, contests, making requests to the station, etc.

With additional reference to FIG. **9***c*, an example of real time streaming broadcast, in which music is being output along with corresponding data on the display, is illustrated. In accordance with an aspect of the present invention, data indicative of a site at which the particular music recording is being played (and/or it associated album or video) can be ordered is transmitted and associated with a particular input, as evidenced by "order" on the display at which location is associated with a particular keypad input on the wireless communications device. Accordingly, while listening to the music recording, an individual may activate the order key and be connected with a source for ordering that particular music recording. For example, the identifier or address associated with the "order" location may be the source of the streaming music, or alternatively, may be a remote music storage source, such as indicated by reference numeral **19** in FIG. **3**. Additionally, upon activation of the order key, either a data, a voice, or a combined voice/data link may be established with the source at which the music recording is to be purchased, and the purchase may be conducted in a purely electronic fashion, or by speaking with an operator. Preferably, such a link terminates the link with the streaming source, although terminating the initial link may not be necessary if there is sufficient bi-directional bandwidth available. Additionally, a selection of how the purchase is to be made could also be entered using wireless communications device **12**. For example, purchase may be made such that a complete copy of the sound recording (or its associated album) is downloaded to the memory **26** within wireless communications device **12**. Alternatively, the user can specify, either by input, or through a previously established account with the source at which the recording is being purchased, to have the music recording downloaded to a remote, personal storage unit, such as the personal storage unit **16** indicated in FIGS. **2** and **3**. Alternatively, the user may simply select to have the music recording located on a transferable medium, such as a CD or DVD, and courriered or mailed to a selected address of the user.

Additionally, as illustrated in FIGS. **9***b* and **9***c*, the contact information is preferably buffered or QUED in such a way that at least one additional, previous address or identifier is temporarily stored. For example, where the data first includes an advertisement from Pizza Hut (as in FIG. **9***b*), and then streams a recording by Jewel (as indicated in FIG. **9***c*), the data indicative of Pizza Hut is moved over one location on the display and associated with a different key, such that even after the Pizza Hut advertisement has concluded, a communications link with a Pizza Hut central source may still be made. It will be understood and appreciated that the QUE or buffer for retaining prior items associated with particular sets of data streams may also be retained in memory, although not displayed on the display, such that through utilization of a scroll feature previous items may be recalled.

FIG. **9***d* illustrates display of athletic contests, such as a football game. In accordance with the invention, and as described, as the user is listening to a broadcast of the athletic contest, data indicative of the contest may be transmitted, according to a protocol for display on the display. In the example of FIG. **9***b*, the data includes the contestants in the contest, the amount of time remaining in the contest, and in the instance of a football game, a possession arrow to indicate which team has possession of the football, a score, and down, yards to go, and location of the line of scrimmage. It will be appreciated that other circumstances associated with athletic events, depending upon the nature and type of the event, may be displayed. Additionally, the information is periodically updated as additional data packets including data indicative of the real time circumstances of the game are transmitted.

In use, a user of communications device **12** may establish a communications link via the communications network with the remote storage facility **14**. In a preferred embodiment, the facility **14** has a uniform resource locator (URL) on a global communications network (such as the world-wide web), and device **12** accesses the facility **14** via a server in the communications network. Alternatively, device **12** may be utilized to dial directly a telephone number associated with the storage facility **14**. Using keypad input **22**, or microphone **32**, when storage facility **14** includes voice recognition equipment, the user may select one or more music recordings for downloading to the wireless communications device. If the selected recordings are already encoded, they are transmitted to the wireless communications device **12** via the communications network, and stored in memory **32**. Alternatively, if the selected recordings are not already encoded by encoder **58**, they are first encoded at the storage facility and then transmitted via the communications network to the communications device **12**.

As will by now be appreciated in view of the foregoing, the communications device **12** may also be used for retrieving one or more music recordings from a remote storage facility **14** for storage in a personal storage unit **16** of the user. As described, the personal storage unit **16** may be a memory storage location at an address on the global communications network and, indeed, may be located at the remote storage

facility **14**. In such an instance, when a communications link with a remote storage facility **14** is established with wireless communications device **12**, the user can select whether he or she wishes to select new recordings, or enter his or her personal storage unit account for retrieval of recordings that have already been purchased.

In accordance with a preferred aspect of the present invention, the music recordings are encoded in data packets for transmission via a packet switched network. In particular, it is preferred that the wireless communications network be a next or third generation network, such that data transmissions are at sufficiently high speeds, and preferably greater than 50 KHz.

Once an encoded music recording is stored in memory **26**, or on a memory cartridge, of the wireless communications device **12**, the input **22** may be utilized to control the player to play the recording. In this regard, when a music recording is retrieved from memory for play, the player decodes the encoded data packet according to conventional steaming techniques in the buffer. The player outputs the music via speaker **34** or, in the event earplugs or headphones are connected to port **44** of communications device **12**, then the music is outputted via the headphones or earplugs.

In accordance with an aspect of the invention, information relating to a music recording is preferably transmitted along with music recording data for storage in memory **26**. For example, data indicative of the artist, the title of the recording, the album or CD from which the recording came, the recording label, the date of the recording, or any other desired information may be stored along with the recording at storage facility **14**, and transmitted for storage in memory **26**. Preferably, the informational data is stored as a header (e.g., in one or more integrally transmitted data packets) (See FIG. **1**), such that processor **20** outputs the information to display **24**. Alternatively, informational packets may be disseminated between packets containing music data. Additionally, it is an aspect of the present invention that each music recording stored at facility **14** has associated therewith data indicative of an electronic address of the facility **14**, which address data is also transmitted to the communications device **12** upon retrieval of a music recording. Communications device **12** is programmed such that, upon retrieval and playback of the recording, the data indicative of the address of the storage facility **14** is associated with a particular key or input on communications device **12** and may remain stored in a memory location associated with that key even after playback is completed (or until replaced with other data). Thus, the user of communications device **12**, upon opening the "player application", will be able to immediately establish a communications link with storage facility **14** by pressing the program key. In this regard, informational data indicative of the address, or indicating to the user that a particular key may be pressed to establish a quick communications link with the storage facility **14**, is preferably displayed on the display.

Alternatively, the present invention may be utilized to stream audio which is music or broadcast, in real time, from a streaming source. In such an instance, the streamed data is not stored in an internal memory of wireless communications device **12** or in a memory cartridge, but simply streamed through the buffer and played. As described, information indicative of that which is being streamed may be simultaneously output on a display of the communications device Particularly, contact information (e.g., a telephone number or electronic address) is preferably associated with an input such that an additional communications link may be established with a source or entity associated with the information. In the preferred embodiment described, for example, a user may establish a link with source of an advertisement for purpose of making a purchase. It should be understood and appreciated that the actual communications link made may be made through the streaming source (such as a radio station), or may be made through another remote site, such as a transaction clearing house. Additionally, it is contemplated that location information, such as may be obtained via an incorporated global positioning system unit, or by a network location determining feature, may be transmitted along with any signal such that the communications link may be routed, if desired, to a particular location. For example, in the instance of "Pizza Hut", which has a plurality of locations, the call may be routed to a nearest most Pizza Hut. Preferably, however, the call is initiated to a central location of Pizza Hut, or to a web site or answering service engaged by Pizza Hut and other entities for the purpose of taking orders. Additionally, it should be understood and appreciated that while the preferred input is a key on the telephone, or communications device **12** being employed, the input may be any other type of input, such as a voice activated input or a touch screen display, such as used on many conventional personal digital assistants.

From the foregoing description, it will be readily seen that a wide variety of other uses fall within the scope of the application. For example, in the preferred embodiment described, information indicative of the source at which a particular music recording being played is preferably associated with an input on the communications device **12**, such that activation of that input establishes a communications link with the source for the purpose of purchasing a music recording. However, in accordance with an additional aspect of the invention, a concert schedule of the artist or group that recorded the song being played may be accessed at the source, for the purpose of buying concert tickets. Accordingly, upon hearing a particular song, a user of communications device **12** can activate a single input and establish a communications link with a source for purchasing concert tickets. It should be understood that the communications link may be a voice communications link or, alternatively, may be a voice and/or data communications link, such that the tickets may be purchased electronically. In particular, while the concert information may be available at the described source, it should be understood and appreciate that additional data may be encoded in the data stream, and associated with a different input, such that activation of a first input establishes a communications link with a first source at which the music recording may be purchased, while activation of a second input establishes a communications link with a second source at which concert tickets may be purchased. It should be understood that the purchasing features of the present invention may be utilized on wired or wireless PCs and computing stations as well as via wireless links. It should also be understood that, while the invention has been described with respect to music or sound recordings, various features of the invention are, applicable to recordings of other types, such as video recordings.

With reference now to FIG. **10**, an alternative embodiment of the present invention, is illustrated and described. In particular, in the embodiment of FIG. **10**, the wireless communications device **12** is incorporated in a vehicle. Thus, in such an instance, each of the components of the wireless communications device, such as the processor, memory, buffer, input, display, microphone, speaker, etc. may not be encased within the same housing. In fact, it is preferred that a plurality of speakers **122** are utilized, and spaced about the vehicle in a conventional fashion. Additionally, it is preferred that the memory **124** has much greater storage capacity than in a portable, handheld wireless communications device. In this

regard, the memory may be one or more burnable CDs. The remaining aspect of this embodiment of the present invention is similar to those described above, and need not be reiterated here. In summary, the wireless communications device may be used to download selected, encoded music recordings and played via the vehicle speakers, or to stream a real time encoded broadcast. Preferably, the wireless communications device is also a voice communications device, such that voice connections may be made with the device, as well. It should be understood and appreciated that, in this vehicular embodiment, that a portable wireless communications device may be utilized in conjunction with in vehicle components, such that the wireless communications device communicates (such as by the cable connection) with one or more speakers, a storage unit, and/or an input.

From the foregoing it will be seen that this invention is one well adapted to attain all ends and objects hereinabove set forth together with the other advantages which are obvious and which are inherent to the structure.

It will be understood that certain features and subcombinations are of utility and may be employed without reference to other features and subcombinations. This is contemplated by and is within the scope of the claims.

Since many possible embodiments may be made of the invention without departing from the scope thereof, it is to be understood that all matter herein set forth or shown in the accompanying drawings is to be interpreted as illustrative, and not in a limiting sense.

The invention claimed is:

1. A system comprising:

a source of digital media recordings;

wherein said source of digital media recordings is accessible via a communications network and stores in a database memory and makes available for purchase a plurality of digital media recordings;

a mobile communications device associated with a user, wherein said mobile communications device has an operating system and is for wireless communication and comprises

a processor,

a display,

a digital media player application that is pre-installed in the mobile communications device before the mobile communications device is provided to the user;

a memory, and

an input;

an account associated with the user of said mobile communications device, wherein said account is accessible to the user using said mobile communications device, and wherein said account comprises a directory of a plurality of digital media recordings that have been obtained by the user;

wherein said source of digital media recordings processes a request, received from said mobile communications device, to purchase a digital media recording, wherein said request to purchase said digital media recording is input via said mobile communications device by the user of said mobile communications device;

wherein, when said digital media recording is purchased from said source, said source of digital media recordings makes said purchased digital media recording available for transmission to said mobile communications device;

wherein, said system does not transmit, at the time said digital media recording is purchased from said source, said purchased digital media recording to said mobile communications device for either (i) play; or (ii) complete storage and subsequent play of said purchased digital media recording in said mobile communications device;

wherein, when said digital media recording is purchased from said source, said system identifies said purchased digital media recording in said directory of obtained digital media recordings in said account of the user;

wherein, said source of digital media recordings receives from said mobile communications device, via a communications interface initiated subsequent to said purchase of said digital media recording and by the user using the mobile communications device, a selection to transmit to said mobile communications device said purchased digital media recording that was previously purchased by the user using said mobile communications device and was identified by said system in said account of the user in the directory of digital media recordings obtained by the user;

wherein, based on said selection to transmit said purchased digital media recording to the mobile communications device of the user, said source of digital media recordings accesses in said database memory said digital media recording that was purchased by the user and transmits said purchased digital media recording to said mobile communications device of the user;

wherein said mobile communications device wirelessly receives said purchased digital media recording and stores said purchased digital media recording in said memory of said mobile communications device; and

wherein said purchased digital media recording stored in said memory of said mobile communications device is available for play in said mobile communications device with said pre-installed digital media player application.

2. The system as set forth in claim **1**, wherein said system further comprises a computing device of the user, wherein said system enables the user to select whether to play in said computing device the obtained digital media recording, that is accessible via said account of the user, as said digital media recording is received in said computing device from said source of digital media recordings, or to download said obtained digital media recording for storage in said computing device of the user, wherein said source of digital media recordings receives a selection input by the user using said computing device to transmit to said computing device of the user said digital media recording that was purchased by the user using said mobile communications device and was identified by said system in said account of the user in the directory of digital media recordings obtained by the user, and wherein, based on said selection to transmit said purchased digital media recording to the computing device of the user, said system accesses said digital media recording that was purchased by the user and initially transmits said purchased digital media recording to said computing device of the user.

3. The system as set forth in claim **1**, wherein said system further comprises a computing device of the user and said source of digital media recordings further comprises streaming digital audio functionality, wherein said source streams to said mobile communications device, via a radio communications link with said mobile communications device, a digital music recording followed by an advertisement, said system further comprising enabling the digital music recording that is streaming to said mobile communications device to be purchased from said source of digital media recordings while said digital music recording is streaming to said mobile communications device, wherein said source receives from said mobile communications device a request to purchase said streaming digital music recording while said digital music

recording is streaming to said mobile communications device, wherein said source processes said request to purchase said streaming digital music recording and identifies said purchased digital music recording in said directory of digital media recordings in said account of the user, wherein said purchased digital music recording that is identified in said directory of digital media recordings is accessible by said computing device of the user, and wherein said source of digital media recordings downloads said purchased digital music recording to said mobile communications device for storage in said mobile communications device without terminating said radio communications link with said source.

4. The system as set forth in claim **1**, wherein said purchased digital media recording comprises a digital music recording.

5. The system as set forth in claim **1**, wherein said purchased digital media recording comprises a video recording.

6. The system as set forth in claim **1**, wherein said system further comprises a computing device of the user, wherein said source of digital media recordings comprises a first source, said system further comprising a downloadable music player application that is compatible with said operating system of said mobile communications device, wherein said system receives a request from said mobile communications device to download said downloadable music player application, wherein said system causes said requested downloadable music player application to be transmitted to said mobile communications device, wherein said mobile communications device wirelessly receives said music player application, and wherein said received music player application is operable to play digital music recordings as they are received from a streaming source of digital music, wherein said streaming source of digital music comprises a second source that is different from said first source, and wherein said system further enables a digital music recording that is streaming to said mobile communications device from said second source to be purchased from said first source of digital media recordings while said digital music recording is streaming to said mobile communications device from said second source, wherein said first source of digital media recordings receives from said mobile communications device a request to purchase a streaming digital music recording while said digital music recording is streaming to said mobile communications device via a radio communications link from said second source, wherein said first source processes said request to purchase said streaming digital music recording and identifies said purchased digital music recording in said directory of obtained digital media recordings in said account of the user, wherein said purchased digital music recording that is identified in said directory of obtained digital media recordings in said account of the user is accessible by the computing device of the user, and wherein said first source of digital media recordings downloads said purchased digital music recording to said mobile communications device for storage in said mobile communications device without terminating said radio communications link with said second source.

7. The system as set forth in claim **1**, said system further comprising a television that is enabled to receive digital media recordings from said source of digital media recordings.

8. The system as set forth in claim **1**, wherein said account further comprises memory storage for storing digital music files that have been obtained by the user.

9. The system as set forth in claim **1**, wherein said system does not transmit said purchased digital media recording to said mobile communications device when said digital media recording is purchased based on a selection, input by the user, using said mobile communications device when said digital media recording is purchased.

10. The system as set forth in claim **1**, wherein said account of the user is established and provided to the user before said purchase by the user of said digital media recording, wherein said system does not transmit said purchased digital media recording to said mobile communications device when said digital media recording is purchased based on a selection of the user entered into said pre-established account of the user.

11. The system as set forth in claim **1**, said system further comprising:

a media unit located in a residence of the user, wherein said media unit comprises a memory and a digital media decoder;

wherein, when said digital media recording is purchased based on said request to purchase said digital media recording received from said mobile communications device, said source of digital media recordings transmits said purchased digital media recording to said media unit located in the residence of the user.

12. The system as set forth in claim **11**, wherein said media unit further comprises a television.

13. The system as set forth in claim **11**, wherein said not transmitting said purchased digital media recording to said mobile communications device and transmitting said purchased digital media recording to said media unit is based on a selection entered into said system by the user.

14. The system as set forth in claim **1**, said system further comprising:

a media unit located in a residence of the user, wherein said media unit comprises a memory and a digital media decoder;

wherein said directory of said plurality of digital media recordings that have been obtained by the user is stored in said memory of said media unit, and wherein said source of digital media recordings retrieves said purchased digital media recording and transmits said purchased digital media recording to said media unit based upon a selection of said purchased digital media recording by the user using said directory stored in said memory of said media unit.

15. The system as set forth in claim **14**, wherein said media unit further comprises a television.

16. The system as set forth in claim **1**, wherein said purchased digital media recording comprises a first purchased digital media recording, said system further comprising:

wherein said source of digital media recordings processes a request input by the user from said mobile communications device to purchase a second digital media recording;

wherein, when said second digital media recording is purchased, said second digital media recording is downloaded to said mobile communications device for storage in said memory of said mobile communications device, wherein said downloaded second digital media recording is available in said mobile communications device for subsequent play with said pre-installed digital media player application.

17. The system as set forth in claim **16**, wherein said second digital media recording is downloaded to said mobile communications device when said second digital media recording is purchased based on a selection, input by the user, using said mobile communications device when said digital media recording is purchased.

18. The system as set forth in claim **16**, wherein said second digital media recording is downloaded to said mobile com-

munications device when said second digital media recording is purchased based on a selection of the user entered into said account of the user.

19. The system as set forth in claim **16**, wherein said input comprises an input that is accessible to the user via said pre-installed digital media player application, wherein said request to purchase said second digital media recording is made via a connection, between said mobile communications device and said source of digital media recordings, initiated by the user using said input that is accessible via said digital media player application.

20. The system as set forth in claim **1**, wherein said input comprises an input that is accessible to the user via said pre-installed digital media player application and is for initiating an interface with said source of digital media recordings.

21. The system as set forth in claim **20**, said system enables the user to select to access via the mobile communications device said directory of said plurality of obtained digital media recordings in said account of the user and to select a new recording that is available for purchase at said source of digital media recordings.

22. A method comprising:

providing a source of digital media recordings that is accessible via a communications network and stores and makes available a plurality of digital media recordings;

providing to a user a mobile communications device that comprises

a processor;

an operating system;

a display;

a memory;

a digital media player application that is pre-installed in said mobile communications device before the mobile communications device is provided to the user;

an input;

providing an account to the user of said mobile communications device,

wherein said account is accessible to the user using said mobile communications device,

wherein said account comprises a directory of a plurality of digital media recordings that have been obtained by the user from said source of digital media recordings;

receiving, from the mobile communications device of the user, a request to purchase a digital media recording, wherein said request to purchase said digital media recording is received in a communication initiated from said mobile communications device by the user;

processing a purchase of said digital media recording;

when said digital media recording is purchased, making said purchased digital media recording available for transmission to said mobile communications device of the user;

identifying said purchased digital media recording in said directory of obtained digital media recordings in said account of the user and not transmitting, at the time said digital media recording is purchased from said source, said purchased digital media recording to said mobile communications device for either (i) play; or (ii) complete storage and subsequent play;

receiving from said mobile communications device at said source of digital media recordings, via a communications interface initiated subsequent to said purchase of said digital media recording and by the user using the mobile communications device, a request to transmit said purchased digital media recording to said mobile communications device; and

in response to said receiving said request to transmit said purchased digital media recording to said mobile communications device, transmitting said purchased digital media recording to said mobile communications device for play of the digital media recording as it is received in said mobile communications device;

playing said transmitted digital media recording in said mobile communications device as it is received from said source;

enabling, via said mobile communications device, the user to select to download said purchased digital media recording to said memory of said mobile communications device so that said purchased digital media recording is available in said mobile communications device for subsequent play with said pre-installed digital media player application in said mobile communications device;

receiving, from a computing device of the user, a request to access said account of the user;

providing access to said account of the user by the computing device of the user;

receiving, from the computing device of the user, a request to transmit to the computing device of the user said digital media recording that was purchased by the user using the mobile communications device and was identified in said account of the user in the directory of digital media recordings obtained by the user; and

based on said request to transmit said purchased digital media recording to the computing device of the user, accessing said requested digital media recording at said source of digital media recordings and causing said requested digital media recording to be initially transmitted to the computing device of the user.

23. The method as set forth in claim **22**, wherein said source of digital media comprises a first source of digital media and said digital media player application comprises a first digital music player application, said method further comprising providing a second digital music player application that is compatible with said operating system of said mobile communications device and is downloadable to said mobile communications device, wherein said second digital music player application enables streaming digital radio functionality for streaming digital music recordings to said mobile communications device from a second source of digital media that streams digital music recordings.

24. The method as set forth in claim **22**, wherein said digital media player application comprises a first digital music player application and said operating system comprises a first operating system, said method further comprising providing a second downloadable digital music player application that is compatible with a second operating system of said mobile communications device, wherein said second digital music player application is operable to play said obtained digital media recordings identified in said directory of digital music recordings.

25. The method as set forth in claim **22**, said method further comprising enabling digital media files of the user to be stored in said account that is provided to the user.

26. The method as set forth in claim **22**, wherein said digital media recordings comprise digital music recordings, said method further comprising enabling the user to mix, via said account associated with the user, a plurality of digital music recordings that have been obtained by the user.

27. The method as set forth in claim **22**, wherein said not transmitting said purchased digital media recording to said

mobile communications device when said digital media recording is purchased is based on an input by the user when making said purchase.

28. The method as set forth in claim **22**, wherein said not transmitting said purchased digital media recording to said mobile communications device when said digital media recording is purchased is based on an input by the user via said account.

29. A system comprising:

a source of digital media recordings;

wherein said source of digital media recordings is accessible via a communications network and stores in a database memory and makes available for purchase a plurality of digital media recordings;

a mobile communications device associated with a user, wherein said mobile communications device has an operating system and is for wireless communication and comprises

a processor,

a display,

a digital media player application that is pre-installed in the mobile communications device before the mobile communications device is provided to the user;

a memory, and

an input;

an account associated with the user of said mobile communications device, wherein said account is accessible to the user using said mobile communications device, and wherein said account comprises a directory of a plurality of digital media recordings that have been obtained by the user;

a media unit located in a residence of the user, wherein said media unit comprises a memory and a digital media decoder;

wherein said source of digital media recordings processes a request, received from said mobile communications device, to purchase a digital media recording, wherein said request to purchase said digital media recording is input via said mobile communications device by the user of said mobile communications device;

wherein, when said digital media recording is purchased from said source, said source of digital media recordings makes said purchased digital media recording available for transmission to said mobile communications device;

wherein, said system does not transmit, at the time said digital media recording is purchased from said source, said purchased digital media recording to said mobile communications device for either (i) play; or (ii) complete storage and subsequent play of said digital media recording in said mobile communications device;

wherein, when said digital media recording is purchased from said source, said system identifies said purchased digital media recording in said directory of obtained digital media recordings in said account of the user;

wherein, when said digital media recording is purchased from said source based on said request to purchase said digital media recording received from said mobile communications device, said source of digital media recordings transmits said purchased digital media recording to said media unit located in the residence of the user;

wherein said source of digital media recordings receives from said mobile communications device, via a communications interface initiated subsequent to said purchase of said digital media recording and by the user using the mobile communications device, a selection to transmit to said mobile communications device said purchased digital media recording that was previously purchased by the user using said mobile communications device and was identified by said system in said account of the user in the directory of digital media recordings obtained by the user;

wherein, based on said selection to transmit said purchased digital media recording to the mobile communications device of the user, said source of digital media recordings accesses in said database memory said digital media recording that was purchased by the user and transmits said purchased digital media recording to said mobile communications device of the user;

wherein said mobile communications device wirelessly receives said purchased digital media recording and stores said purchased digital media recording in said memory of said mobile communications device; and

wherein said purchased digital media recording stored in said memory of said mobile communications device is available for complete play in said mobile communications device with said pre-installed digital media player application.

30. The system as set forth in claim **29**, wherein said transmitting said purchased digital media recording to said media unit is based on a selection entered into said system by the user using said mobile communications device.

31. The system as set forth in claim **29**, wherein said media unit further comprises a television.

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