

AVAILABLE PORTFOLIOS  
**TELECOMMUNICATIONS / WIRELESS**

<b>PS 503</b>	<b>ADVANCED REMOTE MONITORING TECHNIQUES</b> <i>Intellectual Property, LLC</i>
<b>PS 554</b>	<b>HARDWARE INDEPENDENT DATA COMMUNICATIONS PROTOCOL</b> <i>Darryl C. White</i>
<b>PS 565</b>	<b>TECHNIQUES FOR REPLACING A RINGING SIGNAL OF A TELEPHONE CALL</b> <i>Ring Plus, Inc.</i>

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## ADVANCED REMOTE MONITORING TECHNIQUES

*Intellectual Property, LLC*

This patent portfolio discloses advanced techniques for effective wireless communication between a central monitoring terminal and multiple transponders.

Remote monitoring techniques are commonly employed in commercial, hospital, or industrial facilities to identify and monitor the status of multiple objects. Typically, a central monitoring terminal communicates wirelessly with multiple transponders (e.g., RFID tags) strategically placed at various locations, such as in an advanced inventory system. A standard configuration for such a system consists of a central monitoring system that communicates with various transponders. However, this configuration faces problems with the transponders in that they must be powered for a substantially long time and require a large amount of energy. Furthermore, the transponders are limited in terms of the amount of information that can be communicated due to interference from other transponders. These limitations in current systems make them unsuitable for various applications currently in the marketplace.

**Value Proposition:** This patent discloses a system that can produce superior results without cross transponder interference while requiring lower power for communications. Such results are achieved using a time-based system in which each transponder pulses data which minimizes interference and increases data throughput. The system also implements error checking mechanisms that further enhance the superior results. This patent thus discloses a system that can be used by anyone implementing a wireless multi-nodal information system to increase data transmission while lowering power usage.

**Priority Date:** 08-30-2002

**Forward Citing Companies:** Lutron Electronics, Fujitsu, Graham Bell Holdings

**Representative Claim:** US 6,975,206 – Claim #1

A method of communicating information from first and second transponders to a central monitoring device, the method comprising: receiving a starting indication at the first and second transponders; determining first and second start times for the first and second transponders, respectively, in response to the starting indication; and transmitting a first set of bursts from the first transponder and a second set of bursts from the second transponder, wherein the bursts of the first set respectively occur at least some of a first set of potential transmission times within an interrogation time period; wherein the bursts of the second set respectively occur at at least some of a second set of potential transmission times within the interrogation time period; wherein each of the potential transmission times of the first set are determined in relation to the first start time, and each of the potential transmission times of the second set are determined in relation to the second start time; and wherein the potential transmission times of the first set are separated from one another by one of a bit-cell period and a multiple of the bit-cell period, and the potential transmission times of the second set are separated from one another by one of the bit-cell period and a multiple of the bit-cell period.

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**TECHNOLOGY**  
WIRELESS DEVICES

**NOVELTY**  
ENERGY EFFICIENT  
WIRELESS  
COMMUNICATION  
SYSTEM FOR REMOTE  
MONITORING OF MULTIPLE  
DEVICES

**IMPORTANCE**  
KEY PATENT PORTFOLIO  
FOR ENTITIES INVOLVED  
IN SECURITY AND  
SURVEILLANCE AS  
WELL AS COMPANIES  
MANUFACTURING REMOTE  
MONITORING PRODUCTS

**NUMBER OF ASSETS**  
6

**US PATENTS (1)**  
6,975,206

**APPLICATIONS (5)**  
EP 1540568  
CH 1540568  
DE 1540568  
FR 1540568  
GB 1540568

## HARDWARE INDEPENDENT DATA COMMUNICATIONS PROTOCOL

Darryl C. White

This patent portfolio discloses a method for optimizing packet data traffic between network nodes with a flexible, prioritized access control and retransmission process in a robust protocol. The addition of priority-based access and retransmission intervals provide significant advantages over present CSMA communication protocols (e.g., Ethernet and its derivatives, Fieldbus protocols, LonWorks, LnCP, Controller Area Network (CAN) implementations, DeviceNet/ControlNet, IEEE 802.11, et al.). The packet prioritization features can be implemented within many of these network protocols to reduce collisions and improve the efficiency of high value and time-sensitive data. Transmission priority can be a function of device type, data type, status condition, and/or the number of failed transmission attempts.

**Value Proposition:** This portfolio addresses market limitations with a prioritized method of inter-node communication in a hierarchical or peer-to-peer network. The main advantages of this new protocol are efficient data traffic management, scalability, reliability, low-implementation cost and flexibility in accommodating a wide array of devices over varied channel media. The protocol specifies monitoring the network activity for a variable period prior to transmission, and in the preferred embodiment, transmitting a priority-coded sequence to acquire the channel, and if successful, transmitting the data. If the channel is in use or a collision is detected, the node repeats the process after a delay determined by its packet priority. The protocol also provides error detection features such as packet acknowledgment and CRC's, while minimizing the communications overhead required for simple devices.

**Priority Date:** 03-26-1996

**Forward Citing Companies:** AT&T, Cisco Systems, Fujitsu Limited, GE, Hitachi, Honeywell, Koninklijke Philips Electronics N.V., LG Electronics, Lutron Electronics, NEC America, Qualcomm, Smartmatic International, Yitran Communications

**Representative Claim:** US 6,002,669 – Claim #1

For use with a network used by a plurality of devices, said plurality of devices sending and receiving messages over said network, each device of said plurality of devices having a data rate and a priority level, an operating protocol for a device which desires to transmit data over said network, said operating protocol comprising: (a) monitoring said network for activity for a guardband time, said guardband time being a function of at least one of the slowest data rate for said network and the priority level of said device which desires to transmit; (b) if there is no activity during said guardband time, then transmitting a priority character at said slowest data rate and monitoring said network to detect simultaneous transmission by another of said devices, said priority character representing the priority level of said device which desires to transmit; and (c) if there is a said simultaneous transmission by a said device having a higher priority level than the priority level of said device which desires to transmit, then aborting said transmission and delaying for a period of time determined by at least one of said slowest data rate, said priority level of said device which desires to transmit, and the number of transmissions which have been aborted since a predetermined event.

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### TECHNOLOGY

TELECOMMUNICATIONS

### NOVELTY

SCALABLE AND EFFICIENT  
MULTIPLE ACCESS  
CONTROL PROTOCOL  
WITH PRIORITIZED  
COLLISION AVOIDANCE  
AND RESOLUTION FOR  
WIRELESS AND WIRED  
DATA NETWORKS

### IMPORTANCE

KEY PORTFOLIO WITH  
APPLICATIONS IN  
MULTIPLE NETWORKING  
ENVIRONMENTS  
INCLUDING  
TELECOMMUNICATIONS;  
INDUSTRIAL NETWORKS;  
HOME AUTOMATION AND  
APPLIANCE NETWORKS;  
SMART-GRID AND UTILITY  
DATA NETWORKS

### NUMBER OF ASSETS

1

### US PATENTS (1)

6,002,669

PS  
554

## TECHNIQUES FOR REPLACING A RINGING SIGNAL OF A TELEPHONE CALL

*Ring Plus, Inc.*

This patent portfolio discloses techniques for operating a telecommunications system during a ring-back signal period. Typically, a receiver of a telephone call hears a ring indicating that a caller wants to talk to her. The vast majority of telecommunication systems use some type of ringing signal to inform a receiver about the incoming telephone call. Further, the caller hears a ring-back tone indicating that the process is waiting for the receiver to respond. Currently, there are techniques that replace these ringing signals with promotional messages. However, the techniques use hardware implementation and are not efficient in providing promotional messages. Therefore, there is a need for techniques that can efficiently provide advertisements and other promotional messages.

**Value Proposition:** This portfolio addresses market limitations by disclosing a technique for replacing ringing signals in a telephone communication system with audio promotional messages. A caller's profile is saved in a database that is used to select a pre-recorded promotional message. When a user makes a call, he can listen to the messages (which have replaced the ringing signal) till the receiver responds. Further, the technique discloses a subscriber station that provides the necessary telephone switching and generates pre-recorded messages for the caller and the recipient. The disclosed technique is operable with both hard wired and cellular telephone systems and eliminates the need for significant additional hardware.

**Priority Date:** 06-28-2001

**Forward Citing Companies:** Sprint, Microsoft, SK Telecom, Vringo

**Representative Claim:** US 7,006,608 – Claim #33

A software based algorithm for operation of a telephone system in which a generated sound presentation can replace or overlay a ring-back signal normally heard in a caller's telephone until such time as a recipient of a telephone call answers the telephone call, said algorithm comprising the steps of: a) initiating those actions to identify the class of persons represented by the caller; b) introducing a sound presentation to be generated over the telephone which replaces a portion of or all of the ring-back signal; c) determining whether the telephone line of the recipient telephone is busy; d) terminating the telephone call and generating no sound presentation if the telephone line is busy and allowing for a sound presentation if the telephone line is not busy; e) initiating those actions to play the introduced message to the caller or the recipient or both; and f) terminating the playing of the sound presentation upon answering of the phone call by the recipient.

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### TECHNOLOGY

TELECOMMUNICATIONS

### NOVELTY

SOFTWARE BASED ALGORITHM TO REPLACE RINGING TONES IN THE TELEPHONE SYSTEM WITH PROMOTIONAL MESSAGES

### IMPORTANCE

STRATEGIC PORTFOLIO OF INTEREST TO TELECOMMUNICATIONS SERVICE PROVIDERS

### NUMBER OF ASSETS

7

### US PATENTS (2)

7,006,608  
7,227,929

### US APPLICATIONS (5)

11/403,637  
11/453,183  
11/756,613  
60/283,796  
60/301,760